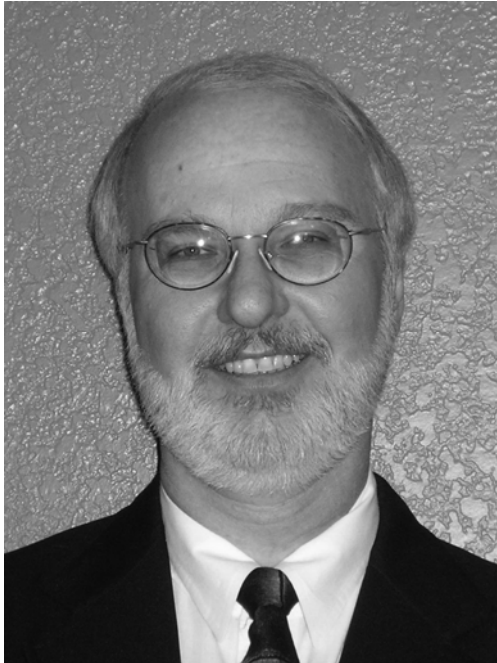


President's Message



Let me welcome you to the 2006 Annual Meeting of NAPCRG in Tucson, Ariz. NAPCRG has become increasingly renowned for both the quality of its sessions and the interesting and fun sites for its meetings, and this year will be no exception. The Hilton El Conquistador is a beautiful resort nestled under the mountains just north of the city. There are many interesting places to visit in Tucson, and everyone should particularly try to make it out to the Arizona-Sonora Desert Museum, one of the best zoological parks in the country and a great introduction to desert flora and fauna. Other cool outdoor attractions in the area include Saguaro National Park and Sabino Canyon. There are also many beautiful and interesting old missions in the area, and movie fans may want to trek out to the Old Tucson Studios, the set for a number of notable Western movies over the years and a fun place to visit.

NAPCRG has also pulled together some great offerings to keep you inside for the bulk of the time during the meeting. Along with our usual array of posters, papers, and forums, NAPCRG offers three strong plenary speakers, with one each from the United States, the United Kingdom, and Canada. Todd Weber, MD, the director of the Office of Antimicrobial Resistance at the US Centers for Disease Control, will start things off with a discussion of strategies for improving the appropriate use of antimicrobial drugs in primary care settings and research needs for further understanding control and prevention of antimicrobial-resistant infections. Paul Little, MD, MBBS, a GP from Romsey, UK, and Southampton University, will discuss his years of research focusing on consultation and the management of the interface between self care and managed care. Finally, Diane Watson, PhD, MBA, the inaugural director of Research and Analysis at the Health Council of Canada and a faculty member at the Centre for Health Services and Policy Research at the University of British Columbia, will give folks a great reason to stay around for the final half-day of the meeting with her presentation on the development of a framework for performance measurement.

NAPCRG has become one of the premier venues for presenting primary care research in the world, and it serves as a meeting place for primary care researchers from everywhere. The culture of NAPCRG has always been extremely warm and nurturing, and we welcome all: both novice and senior researchers, family physician researchers and clinicians, PhD researchers, nurse researchers, researchers from other primary care disciplines, and international researchers. We believe that you will find many friends and potential collaborators and an environment that is conducive to interesting and stimulating interactions at NAPCRG.

—Perry Dickinson, MD
NAPCRG President

Board of Directors and Program Committee

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NAPCRG Past Presidents

1972–1983	Maurice Wood, MD
1983–1985	C. Richard Kirkwood, MD
1985–1987	J. Christopher Shank, MD
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1991–1993	Walter Rosser, MD
1993–1995	Kenneth Reeb, MD
1995–1997	William Phillips, MD, MPH
1997–1999	Larry Green, MD
1999–2001	Ann Macaulay, MD, CCFP
2001–2003	Kurt Stange, MD, PhD
2003–2005	Moir Stewart, PhD

Monday, October 16

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9:30–11 am.....	111

Monday, October 16

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PRESENTATION FORMATS

Distinguished Papers

Distinguished Papers are selected by the NAPCRG Program Committee from full paper submissions to highlight excellence in research among the conference submissions. Several factors are considered for selection including peer-review ratings, soundness and innovativeness of research, and diversity of topic and presenters. Five Distinguished Papers have been selected this year, and each will have 30 minutes for presentation and discussion. They will be presented immediately following plenary sessions with three concurrently on Monday, October 16, and two concurrently on Tuesday, October 17.

Extended Papers

Extended Papers are selected by the NAPCRG Program Committee from full paper submissions to allow more time for in-depth lecture and discussion than the 15 minutes normally allotted for paper presentations. Each of the five Extended Papers will have 30 minutes for presentation and discussion, with three sessions concurrently on Monday, October 16, and two concurrently on Tuesday, October 17.

Concurrent Papers

Paper presentations are given a maximum of 15 minutes – 10 minutes for presentation and 5 minutes for discussion and transition to the next paper. These presentations are given in concurrent sessions, and a moderator will be in attendance for each presentation.

Workshops

Workshops are scheduled as 90-minute sessions and run concurrently with other sessions. These presentations normally involve research methodology or research skills development ideas that involve audience participation.

Forums

A forum is an informal 3-hour session and runs concurrently with other sessions. Forums are designed to provide researchers with an opportunity to discuss specific methodological challenges that they have encountered while applying for funding or conducting a project. Forums allow researchers with similar interests to share ideas regarding methodology, sampling, statistical methods, planning studies, and other creative solutions to project challenges.

Posters

Poster presentations can be completed research or research in progress and are given stand-alone time to maximize contact among researchers. There will be two poster sessions – Poster Session I will be on Monday, October 16, and Poster Session II will be on Tuesday, October 17.

NAPCRG MEETING CALENDAR

2007

35th NAPCRG Annual Meeting
October 20-23 (Saturday – Tuesday)
Sheraton Vancouver Wall Centre
Vancouver, British Columbia

2008

36th NAPCRG Annual Meeting
November 15-19 (Saturday – Wednesday)
Westin Del Mar
Rio Grande, Puerto Rico

2009

37th NAPCRG Annual Meeting
November 14-18 (Saturday – Wednesday)
Le Centre Sheraton
Montreal, Quebec

Conference Schedule

Sunday, October 15

7:30 am–7 pm Registration – *Presidio Ballroom Foyer*

PRECONFERENCE WORKSHOPS/MEETINGS

8 am–12:30 pm Place Matters: Using Geographic

Information Systems in Primary Care
Research – *Canyon Suite IV*

8 am–4 pm How to Build a Sustainable NIH-funded
Research Program – *Joshua Tree II*

8:30 am–4 pm Academic Family Medicine Research
Development: Where Are You, Where Do
You Want to Be, and How Can You Get
There? – *Agave Ballroom*

1-4:30 pm Fundamentals of Building a Primary Care
Practice-based Research Network: Lessons
Learned From the Federation of Practice-
based Research Networks – *Canyon Suite III*

5–5:30 pm Members' Orientation Program –
Coronado Ballroom

5:30–7 pm Welcome Reception – *Poolside Courtyard*

Monday, October 16

7 am–5:45 pm Registration – *Presidio Ballroom Foyer*

7 am–5:45 pm Speaker Ready Room – *Palo Verde I*

7–7:45 am Continental Breakfast and Special
Interest Groups – *Presidio Ballroom*

OPENING PLENARY SESSION

8–9:20 am

Presidio Ballroom

Greetings/Moderator: Arch Mainous, III, PhD

Primary Care and Antimicrobial Use: Heroes or Villains? –

J. Todd Weber, MD, FACP, FIDSA, director, Office of
Antimicrobial Resistance in the Coordinating Center for
Infectious Diseases at the Centers for Disease Control

POSTER SESSION I

9:30–10:45 am

PS100-PS216 and Coffee Break – *Turquoise Ballroom*

DISTINGUISHED PAPER PRESENTATIONS

10:45–11:15 am

DP1: Myocardial Infarction Mortality in Rural and Urban
Hospitals: Rethinking Measures of Quality of Care – **Paul
James, MD**, University of Iowa Carver College of
Medicine – *Coronado I*

Moderator: Arch Mainous, PhD

DP2: Distress and Therapeutic Interactions in Patients With
Advanced Metastatic Cancer: The Self-integrity Model –
Joanne Reeve, MBChB, MPH, University of Liverpool –
Joshua Tree

Moderator: David Katerndahl, MD, MA

DP3: Preventing Low Birth Weight Babies: The Role of
Primary Care – **Andrew Coco, MD, MS**, Lancaster General
Hospital – *Agave Ballroom*

Moderator: Valerie Gilchrist, MD

CONCURRENT PAPER SESSIONS

11:30 am–12:30 pm

Obstetrics I

A1-A4 *Coronado I*

Complexity Science

B1-B4 *Coronado II*

Health Care Disparities I

C1-C4 *Agave II & III*

Geriatrics

D1-D4 *Joshua Tree I*

Health Care Delivery/Health Services Research I

E1-E4 *Joshua Tree II*

Education/Training I

F1-F4 *Canyon Suite I*

Epidemiology I

G1-G4 *Canyon Suite II*

Practice-based Research I

H1-H4 *Canyon Suite III*

Vulnerable Populations I

I1-I4 *Canyon Suite IV*

NAPCRG LUNCHEON AND ANNUAL MEMBERSHIP MEETING

12:30–2:15 pm

Presidio Ballroom

Conference Schedule

CONCURRENT PAPER SESSIONS

2:30–4 pm

Extended Paper Session

J1-J3 *Coronado I*

Behavioral/Psychosocial I

K1-K6 *Coronado II*

Diabetes I

L1-L6 *Agave II & III*

Practice-based Research II

M1-M6 *Joshua Tree I*

Medical Informatics I

N1-N6 *Joshua Tree II*

4–4:15 pm Refreshment Break – *Turquoise Ballroom*

WORKSHOPS

2:30–4 pm

WK1: A 90 Minute Workshop on How to Create an Alternatively Structured Academic Primary Care Research Fellowship to Enhance Research Infrastructure – *Canyon Suite I*

WK2: The Patient's Contribution to Improved Mental Health in the Consultation – *Canyon Suite II*

WK3: A Critical Time for NAPCRG: Continued Growth and Development of Leaders – *Canyon Suite III*

WK4: Developing Integrated Approaches to Reporting Mixed Methods Research – *Canyon Suite IV*

CONCURRENT PAPER SESSIONS

4:15–5:45 pm

Obesity/Exercise/Nutrition

O1-O6 *Coronado I*

Office/Practice Management

P1-P6 *Coronado II*

Infectious Diseases

Q1-Q6 *Agave II & III*

Practice-based Research III

R1-R6 *Joshua Tree I*

Research Capacity Building

S1-S6 *Joshua Tree II*

WORKSHOPS

4:15–5:45 pm

WK5: International Perspectives on Building Research Capacity: What Can We Learn From Each Other? – *Canyon Suite I*

WK6: Using Qualitative Methods in Primary Care Research: Practical Application and Innovation – *Canyon Suite II*

WK7: Medical Education Research: Catch the Rising Tide – *Canyon Suite III*

WK8: Challenges and Strategies in Conducting Community-based Qualitative Research With Immigrant Women – *Canyon Suite IV*

SPECIAL SESSION

6–6:30 pm Members Forum – *Joshua Tree*

Tuesday, October 17

7 am–5 pm Registration – *Presidio Ballroom Foyer*

7 am–5 pm Speaker Ready Room – *Palo Verde I*

7–7:45 am Continental Breakfast and Special Interest Groups – *Presidio Ballroom*

PLENARY SESSION II

8–9:20 am

Presidio Ballroom

Greetings/Moderator: Helen Lester, MD, FRCGP

Not Rocket Science—The Journey of a Clinical Researcher – **Paul Little, MD, MBBS**, Southampton University/Primary Medical Care Group

POSTER SESSION II

9:30–10:45 am

PS217-PS331 and Coffee Break – *Turquoise Ballroom*

DISTINGUISHED PAPER PRESENTATIONS

10:45–11:15 am

DP4: Progression From Prehypertension to Hypertension in a Cohort of Adults Aged 45–64 Years: The Role of Traditional and Psychosocial Factors – **Marty Player, MD**, Medical University of South Carolina – *Presidio Ballroom*
Moderator: Martin Dawes, MBBS, PhD

DP5: A Relationship-centered Model of Family Medicine Performance – **Holly Lanham, MBA**, The University of Texas at Austin – *Joshua Tree*
Moderator: William Miller, MD, MA

Conference Schedule

CONCURRENT PAPER SESSIONS

11:30 am–12:30 pm

Behavioral/Psychosocial II

T1-T3 *Coronado II*

Health Care Disparities II

U1-U4 *Agave II & III*

Education/Training II

V1-V4 *Joshua Tree I*

Epidemiology II

W1-W4 *Joshua Tree II*

Medical Informatics II

X1-X4 *Canyon Suite I*

Practice-based Research IV

Y1-Y4 *Canyon Suite II*

Obstetrics II

Z1-Z4 *Canyon Suite III*

Vulnerable Populations II

AA1-AA4 *Canyon Suite IV*

SAPC DISTINGUISHED PAPER*

11:30 am–12 pm

Coronado I

SS1: Blood Pressure Reduction With Statins: A Meta Analysis of Randomized Controlled Trials – **Sally Kerry, MSc**, St. George's University of London
Moderator: Tony Kendrick, MD

12:30–2 pm Lunch on your own. Poster Session II open for viewing

CONCURRENT PAPER SESSIONS

2–3:45 pm

Extended Papers Session

BB1-BB2 *Coronado I*

Cancer Research I

CC1-CC7 *Coronado II*

Health Care Delivery/Health Services Research II

DD1-DD7 *Agave II & III*

Health Promotion/Disease Prevention I

EE1-EE7 *Joshua Tree I*

Psychiatry I

FF1-FF7 *Joshua Tree II*

* The Society for Academic Primary Care is the organization in the United Kingdom most comparable to NAPCRG. In our effort to build collaborations between the SAPC and NAPCRG, the organizations have a mutual exchange of 1-2 best paper presentations at our respective annual meetings.

WORKSHOPS

2–3:45 pm

WK9: Strategies for Successful Mentoring Research Workshops: A Workshop for Current and Future Mentors – *Canyon Suite I*

WK10: On the Road to SOMEWHERE...Just Not Sure Where Yet: Finding a “Real Job!” Discussion for Students, Residents, and Fellows (and Honorary Students, Residents, and Fellows – *Canyon Suite II*

WK11: Integrating Competency-based Scholarly Work Into a Community-based Family Medicine Residency's Curriculum – *Canyon Suite III*

WK12: The Impact of Community Member Participation on PBRN Research – *Canyon Suite IV*

3:45–4 pm Refreshment Break –*Turquoise Ballroom*

CONCURRENT PAPER SESSIONS

4–5:45 pm

Education/Training II

GG1-GG6 *Coronado I*

Cancer Research II

HH1-HH7 *Coronado II*

Cardiology

II1-II7 *Agave II & III*

Health Care Delivery/Health Services Research III

JJ1-JJ7 *Joshua Tree I*

Health Promotion/Disease Prevention II

KK1-KK7 *Joshua Tree II*

Diabetes II

LL1-LL7 *Canyon Suite I*

Health Care Disparities III

MM1-MM7 *Canyon Suite II*

Psychiatry II

NN1-NN7 *Canyon Suite III*

Women's Health Issues/Gynecology

OO1-OO7 *Canyon Suite IV*

SPECIAL SESSION

4–5:45 pm

SS2: The Role of Family Medicine Departments in NIH Clinical Translational Science Award (CTSA) Applications – *White Dove*

6:15 pm – Midnight

An Evening at the Last Territory
On-site event

Conference Schedule

Wednesday, October 18

7 am–Noon Registration – *Presidio Ballroom Foyer*

7–7:45 am Continental Breakfast and Special Interest Groups – *Presidio Ballroom*

PLENARY SESSION III

8–9:15 am

Presidio Ballroom

Need to Know: Public, Provider, and Policy Perspectives on Priorities for Information About Primary Health Care –

Diane Watson, PhD, MBA, Director of Research and Analyses, Health Council of Canada Faculty, Centre for Health Services and Policy Research, University of British Columbia

Moderator: Fred Burge, MD, MSc

9:15–9:30 am Refreshment Break – *Presidio Ballroom Foyer*

FORUMS

9:30 am–12:30 pm

FR1: Researching Interdisciplinary Teams in Primary Care: Lessons Learned – *Coronado Ballroom*

FR2: International Forum on Primary Care Researchable Databases – *Canyon Suite I & II*

WORKSHOPS

9:30–11 am

WK13: The Role of Primary Health Care Research in Developing an Evidence Base for Primary Care Practitioners to Reduces Health Disparities in Their Communities and Countries – *Joshua Tree*

WK14: From the BMJ: A Potpourri on Primary Care Research for Prospective Authors – *Agave Ballroom*

WK15: How Can We Make it Easier to Recruit Patients to Primary Care Trials? – *Turquoise I*

WK16: Technology and Practice Change to Support Patient-centered, Collaborative Care – *Turquoise II*

INTERNATIONAL SPECIAL SESSION

9:30–11 am

SS3: A China-US Collaboration to Foster Community-oriented Primary Care Research – *Canyon Suite III*

WORKSHOPS

11 am–12:30 pm

WK17: Applying Survey Design Guidelines to Web-based and Other Electronic Survey Tools – *Joshua Tree*

WK18: Implementation on a National Scale: Taking Facilitation to Decision Makers Across Canada – *Agave Ballroom*

WK19: USPSTF Methods of Updating the Evidence for Clinical Preventive Services – *Turquoise II*

WK20: The IRB Made Plain and Simple – *Turquoise III*

12:30 pm CONFERENCE ADJOURNS

Concurrent Sessions Listed Alphabetically by Topic

TOPIC	DAY/TIME	ROOM	CODE	PAGES
Behavioral/Psychosocial I <i>Moderator: Bruce Arroll, MBChB, PhD</i>	MON – Oct 16 2:30-4 pm	Coronado II	K1-6	35-37
Behavioral/Psychosocial II <i>Moderator: Donald Nease, MD</i>	TUE – Oct 17 11:30 am-12:30 pm	Coronado II	T1-3	60
Cancer Research I <i>Moderator: Ariel Smits, MD, MPH</i>	TUE – Oct 17 2-3:45 pm	Coronado II	CC1-7	72-75
Cancer Research II <i>Moderator: Brian Wells, MD, MS</i>	TUE – Oct 17 4-5:45 pm	Coronado II	HH1-7	88-90
Cardiology <i>Moderator: Marty Player, MD</i>	TUE – Oct 17 4-5:45 pm	Agave II & III	II1-7	90-93
Complexity Science <i>Moderator: Benjamin Crabtree, PhD</i>	MON – Oct 16 11:30 am-12:30 pm	Coronado II	B1-4	21-22
Diabetes I <i>Moderator: Carole Upshur, EdD</i>	MON – Oct 16 2:30-4 pm	Agave II & III	L1-6	37-39
Diabetes II <i>Moderator: Richelle Koopman, MD, MS</i>	TUE – Oct 17 4-5:45 pm	Canyon Suite I	LL1-6	98-100
Education/Training I <i>Moderator: Jennifer Keehbauch, MD</i>	MON – Oct 16 11:30 am-12:30 pm	Canyon Suite I	F1-4	27-29
Education/Training II <i>Moderator: Jane Johnson, MA</i>	TUE – Oct 17 11:30 am-12:30 pm	Joshua Tree I	V1-4	62-64
Education/Training III <i>Moderator: Inis Jane Bardella, MD</i>	TUE – Oct 17 4-5:45 pm	Coronado I	GG1-7	85-87
Epidemiology I <i>Moderator: Daniel Vinson, MD, MSPH</i>	MON – Oct 16 11:30 am-12:30 pm	Canyon Suite II	G1-4	29-30
Epidemiology II <i>Moderator: Robert Gramling, MD</i>	TUE – Oct 17 11:30 am-12:30 pm	Joshua Tree II	W1-4	64-65
Geriatrics <i>Moderator: Arvind Modawal, MD, MPH</i>	MON – Oct 16 11:30 am-12:30 pm	Joshua Tree I	D1-4	24-25
Health Care Delivery/Health Services Research I <i>Moderator: Naomi Lacy, PhD</i>	MON – Oct 16 11:30 am-12:30 pm	Joshua Tree II	E1-4	26-27
Health Care Delivery/Health Services Research II <i>Moderator: Inese Grava-Gubins, MA</i>	TUE – Oct 17 2-3:45 pm	Agave II & III	DD1-7	75-77
Health Care Delivery/Health Services Research III <i>Moderator: Martey Dodoo, PhD</i>	TUE – Oct 17 4-5:45 pm	Joshua Tree I	JJ1-7	93-95
Health Care Disparities I <i>Moderator: Fred Tudiver, MD</i>	MON – Oct 16 11:30 am-12:30 pm	Agave II & III	C1-4	23-24
Health Care Disparities II <i>Moderator: David Meyers, MD</i>	TUE – Oct 17 11:30 am-12:30 pm	Agave II & III	U1-4	61-62
Health Care Disparities III <i>Moderator: Ellen Anderson, MD</i>	TUE – Oct 17 4-5:45 pm	Canyon Suite II	MM1-7	101-103
Health Promotion/Disease Prevention I <i>Moderator: Nancy Elder, MD, MSPH</i>	TUE – Oct 17 2-3:45 pm	Joshua Tree I	EE1-7	78-80
Health Promotion/Disease Prevention II <i>Moderator: Kathleen Culhane-Pera, MD</i>	TUE – Oct 17 4-5:45 pm	Joshua Tree II	KK1-7	96-98
Infectious Diseases <i>Moderator: Elizabeth Clark, MD, MPH</i>	MON – Oct 16 4:15-5:45 pm	Agave II & III	Q1-6	50-52

Concurrent Sessions Listed Alphabetically by Topic

TOPIC	DAY/TIME	ROOM	CODE	PAGES
Medical Informatics I <i>Moderator: Michelle Greiver, MD, CCFP</i>	MON – Oct 16 2:30-4 pm	Joshua Tree II	N1-6	42-44
Medical Informatics II <i>Moderator: Jesse Crosson, PhD</i>	TUE – Oct 17 11:30 am-12:30 pm	Canyon Suite I	X1-4	66-67
Obesity/Exercise/Nutrition <i>Moderator: Vanessa Diaz, MD</i>	MON – Oct 16 4:15-5:45 pm	Coronado I	O1-6	46-48
Obstetrics I <i>Moderator: Elizabeth Shaw, MD</i>	MON – Oct 16 11:30 am-12:30 pm	Coronado I	A1-4	20-21
Obstetrics II <i>Moderator: Michael C. Klein, MD, CCFP</i>	TUE – Oct 17 11:30 am-12:30 pm	Canyon Suite III	Z1-4	69-70
Office/Practice Management <i>Moderator: Judith MacPhail, RN, MHSc</i>	MON – Oct 16 4:15-5:45 pm	Coronado II	P1-6	48-50
Practice-based Research I <i>Moderator: Jan Barnsley, PhD</i>	MON – Oct 16 11:30 am-12:30 pm	Canyon Suite III	H1-4	31-32
Practice-based Research II <i>Moderator: Margaret Love, PhD</i>	MON – Oct 16 2:30-4 pm	Joshua Tree I	M1-6	39-41
Practice-based Research III <i>Moderator: Renee Crichlow, MD</i>	MON – Oct 16 4:15-5:45 pm	Joshua Tree I	R1-6	53-55
Practice-based Research IV <i>Moderator: Deborah Graham, MSPH</i>	TUE – Oct 17 11:30 am-12:30 pm	Canyon Suite II	Y1-4	67-68
Psychiatry I <i>Moderator: Joanne Reeve, MBChB, MPH</i>	TUE – Oct 17 2-3:45 pm	Joshua Tree II	FF1-7	81-83
Psychiatry II <i>Moderator: Lyle (LJ) Fagnan, MD</i>	TUE – Oct 17 4-5:45 pm	Canyon Suite III	NN1-7	103-105
Research Capacity Building <i>Moderator: Christopher Dowrick, MD, MSc</i>	MON – Oct 16 4:15-5:45 pm	Joshua Tree II	S1-6	55-57
Vulnerable Populations I <i>Moderator: Wilson Pace, MD</i>	MON – Oct 16 11:30 am-12:30 pm	Canyon Suite IV	I1-4	32-33
Vulnerable Populations II <i>Moderator: Olga Szafran, MHSA</i>	TUE – Oct 17 11:30 am-12:30 pm	Canyon Suite IV	AA1-4	70-71
Women's Health Issues/Gynecology <i>Moderator: Michelle Howard, MSc</i>	TUE – Oct 17 4-5:45 pm	Canyon Suite IV	OO1-7	106-108

CONFERENCE LOCATION

Hilton Tucson El Conquistador

Golf and Tennis Resort

10,000 N. Oracle Road

Tucson, AZ 85704

Telephone: 520-544-5000

Guest Fax: 520-544-1224

The Hilton El Conquistador, set in the expansive Sonoran Desert, exemplifies the best of Southwestern living. Once you step inside El Conquistador, it quickly becomes obvious that you're somewhere unique. Cathedral ceilings and wrought iron chandeliers provide an impressive setting in the lobby, while floor-to-ceiling windows welcome the sunny outdoors into the lobby lounge.

With intimate paths and surroundings, walking to your guest room or suite resembles a stroll through your own private resort. And once there, you'll enjoy incredible views of the mountains, the desert, or the courtyard pool from your patio or balcony.

With more than 300 days of sunshine a year and 45 championship holes, golfers will swear they've found paradise at El Conquistador. Non-golfers may have even more fun playing tennis, lounging at one of the pools, and relaxing with a spa treatment at the wellness center. Explore the surrounding Santa Catalina Mountains by biking, hiking, or on horseback.

The Hilton El Conquistador Golf and Tennis Resort has been the recipient of the Four Diamond Award from AAA from 1999-2006 and the Award of Excellence from *Corporate and Incentive Travel Magazine* from 1991-2006.

The resort is within 30-40 minutes from many of Tucson's favorite attractions, including the Arizona-Sonora Desert Museum, Old Tucson Studios, Sabino Canyon, Catalina State Park, and Saguaro National Monument.

GROUND TRANSPORTATION

Note that schedules/prices are subject to change.

Taxi Service

From Tucson International Airport, taxi service is approximately \$50-\$60 one way.

Alternate Transportation

The resort offers dedicated service that runs to and from the airport. Check with the hotel front desk for information.

Car Rental

Hertz is the official rental car provider for the NAPCRG 2006 Annual Meeting. Special discounted

rates beginning at \$40 US/day and \$168 US/week are available 1 week prior through 1 week after the conference dates. Weekly rentals are from 5-7 days. The conference rates include unlimited mileage. Reservations may be placed at www.hertz.com or by calling 800-654-2240. Also note that Hertz has a rental counter in the lobby of the Hilton hotel. When making reservations, please reference CV#022Q2811 for the conference rates/discount.

CHILD CARE SERVICES

Contact the Hilton concierge to arrange for individual child care needs. As this service is not offered by the hotel, reservations must be made at least 48 hours prior to the date needed for child care.

MEETING ORIENTATION PROGRAM

Sunday, October 15, 5-5:30 pm, Coronado Ballroom

Are you new to NAPCRG and the NAPCRG Annual Meeting? Consider attending this 30-minute session for a brief overview of the organization and the Annual Meeting. Individuals will participate in an informal discussion at tables where new attendees are intermixed with 1-2 NAPCRG veterans who will explain how to successfully navigate the NAPCRG Annual Meeting and will answer your questions about the organization. This session also allows you to build on your network of fellow primary care researchers by introducing yourself to others at the orientation. After the meeting orientation, we invite you to join your NAPCRG colleagues at the Welcoming Reception scheduled for Sunday from 5:30-7 pm. You must have preregistered to participate in this program.

NAPCRG LUNCHEON AND ANNUAL MEMBERSHIP MEETING

Come enjoy lunch with your fellow NAPCRG members on Monday, October 16, 12:30-2:15 pm. At this luncheon, you can also hear a presentation from the 2006 Wood Award recipient. The luncheon is included in your registration fee.

DINE-AROUND NIGHT

Participate in an optional dutch-treat dinner with your NAPCRG friends and colleagues on Monday evening. Restaurant options will be located within the hotel or within 15 minutes' driving distance of the hotel, and sign up sheets will be posted at the conference registration desk.

EVENING EVENT AT THE LAST TERRITORY AT EL CONQUISTADOR

Tuesday, October 17

6:15–7 pm—Reception

7–9:30 pm—Dinner and entertainment

8 pm—Midnight—DJ and dancing

NAPCRG is known for throwing a great party at its Annual Meeting, and this year will follow that same tradition. This year's conference party will be a western-inspired evening of fun, food, and entertainment, held on the resort property at the Last Territory. We'll start things off with a reception to give you some time for conversing with fellow research colleagues. Tucson is known for stargazing, so we'll have astronomers on hand to give you a peek into the hidden treasures of the beautiful Arizona night sky. For those closed cowboys and cowgirls in the group, don't miss the demonstration by our expert ropers who will teach you some western-style rope tricks. For dinner, the Tucson chefs are going to treat us to a barbecue with all the fixins'. To round out the evening, our deejay will teach guests some western line dance moves and will also play a variety of dance music until the cows come home... or midnight, whichever comes first. So rustle up those boots and hats... we encourage you to wear your best western attire, kick up your heels, and have a great time.

While this evening of food and entertainment is included as part of your conference registration fee, advance registration is required. If you failed to preregister, check with the conference registration desk to see if space is still available. **Additional adult guest tickets are \$65 US; \$73 Can. We'll offer a meal for kids ages 5-12 for \$25 US, \$28 Can. Children under age 5 may attend and eat for free. Registration is required.**

CONTINUING MEDICAL EDUCATION

CME credit for the 2006 NAPCRG Annual Meeting has been approved by the American Academy of Family Physicians. The number of approved prescribed hours is 24.25. This includes 24.25 Prescribed and 2.00 Elective credits. These credit hours include plenary sessions, paper sessions, workshops, and forums. Posters are not approved for CME credit. Also, these credits do not include additional hours for optional preconference workshops offered prior to the meeting.

The AAFP and the College of Family Physicians of Canada (CFPC) have a reciprocal agreement whereby CFPC members who attend CME programs that have been accredited by the AAFP for Prescribed credit can claim MAINPRO-M1 credit. An attendance certificate will be given to attendees in their registration packet.

CONFERENCE HIGHLIGHTS

New This Year – NAPCRG will now provide laptop computers in its breakout rooms to save you the trouble of bringing your computer. All you'll need to do is bring your presentation to NAPCRG on a memory stick or CD-ROM...which is convenient for you and easy to carry. We'll also provide computers with Internet access to allow you to check your e-mail during the conference.

NAPCRG's Annual Showcase – Our annual meeting provides the best opportunity for camaraderie with colleagues from around the world with an interest in primary care research through sessions, informal gatherings, and social events.

Great Research Presentations – The annual meeting will offer more than 400 sessions in a variety of presentation formats to help you gain new ideas and vital information to use in your research.

Highlighted Poster Session Time – Due to the popularity of our posters, we offer our two poster sessions in a 1 hour and 15 minute block of time with no competing sessions. This allows attendees to maximize their time viewing the research and talking to poster presenters. Posters are also open for viewing, without being staffed, during other conference times.

International Research Collaborations – The Society for Academic Primary Care (SAPC) is the organization in the United Kingdom most comparable to NAPCRG. There are several efforts to build collaborations between SAPC and NAPCRG, including a mutual exchange of the two best paper presentations at the organizations' annual meetings, which began in November 2004. We also have a terrific relationship with the College of Family Physicians of Canada Section of Researchers, whose leadership will be at our 2006 meeting. The International Federation of Primary Care Research Networks will also meet during our conference. This truly is the gathering place for primary care researchers around the world.

Networking – The conference schedule provides ample quality time to make connections and contacts with your peers through special interest breakfasts, dine-out opportunities, the conference orientation program, and evening functions.

Monday, October 16

8-9:20 am – Presidio Ballroom

PRIMARY CARE AND ANTIMICROBIAL USE: HEROES OR VILLAINS?

J. Todd Weber, MD, FACP, FIDSA, director, Office of Antimicrobial Resistance in the Coordinating Center for Infectious Diseases at the Centers for Disease Control



The development and proliferation of antimicrobial resistance is driven by antimicrobial drug use, both appropriate and inappropriate. Because of the presenting syndromes and empiric use of antimicrobials in primary care settings, there are significant opportunities for overuse and, therefore, opportunities in these settings for improving

antimicrobial use. The CDC and other federal agencies, state health departments, academic institutions, and other organizations have sought various strategies that would most effectively encourage improved antimicrobial prescribing without sacrificing high quality patient care. To the extent possible, these strategies have been evidence-based and implemented with the aid of partners. Rising incidence of at least two infections—*Clostridium difficile* and community-associated Methicillin-resistant *staphylococcus aureus*—appears closely tied to antimicrobial use and suggests that new strategies for improving antimicrobial prescribing or preventing transmission of drug resistant infections in the community are needed. Attendees at this session will learn what strategies are effective for improving the appropriate use of antimicrobial drugs in primary care settings and what research needs to be conducted in primary care settings to further understand control and prevention of antimicrobial-resistant infections. Primary care researchers could play an important role in exploring the viability of educational strategies to providers on potential adverse effects of antimicrobial prescribing.

J. Todd Weber, MD, FACP, FIDSA, is cochair of the Federal Interagency Task Force on Antimicrobial Resistance. He is a graduate of the College of Physicians & Surgeons of Columbia University and was trained in internal medicine at Bellevue Hospital Center and Tisch Hospital in New York City. He has been at CDC since 1990 where he has worked in the divisions of Bacterial and Mycotic Diseases, Sexually Transmitted Disease Prevention, and the Division of HIV/AIDS prevention. He is a fellow in the American College of Physicians and the Infectious Diseases Society of America.

Tuesday, October 17

8-9:20 am – Presidio Ballroom

NOT ROCKET SCIENCE—THE JOURNEY OF A CLINICAL RESEARCHER

Paul Little, MD, MBBS, Southampton University/Primary Medical Care Group



A clinical research career in primary care is fraught with difficulty, but the enthusiasm for research and the simple lessons learned will be highlighted in this discussion of several research projects spanning 15 years. All these projects in some way address the issue of the consultation and the management of the interface between self care and managed care, eg, the impact of multiple dietary

intervention for hypertension, a study of the prevalence of deafness and ear disease in one of the poorest countries in the world (Nepal), the ‘medicalizing’ effect of different antibiotic prescribing strategies for respiratory tract infection, the role of antibiotic prescribing in preventing complications, large scale studies addressing the predictors of consultation behavior, and the empirical evidence for the importance of patient-centered consultation styles.

Paul Little, MD, MBBS, lives in Romsey (Hampshire, UK) with his wife and two children, is a general practitioner (GP) at Nightingale surgery in Romsey, and was appointed to a personal chair as professor of primary care research at the University of Southampton in 2003. He undertook medical training at Oxford University and Kings College Hospital. After achieving membership of the Royal College of Physicians (MRCP), he trained as a GP in Southampton in 1990, was the first GP to be awarded a Wellcome HSR training fellowship, and then a Medical Research Council (MRC) Clinician Scientist Fellowship. He represents primary care on several panels, including MRC working groups and research boards, National Institute for Clinical Excellence panels, and the UK Research Assessment Exercise 2008 panel. Dr Little is perhaps best known internationally for research on antibiotic prescribing agents, which has addressed one of the major threats to public health—the progressive development of antibiotic resistance. This work has also close links to two other research agendas: on consultation skills, and on the interface between self management and managed care.

Wednesday, October 18

8-9:15 am – Presidio Ballroom

NEED TO KNOW: PUBLIC, PROVIDER, AND POLICY PERSPECTIVES ON PRIORITIES FOR INFORMATION ABOUT PRIMARY CARE

Diane Watson, PhD, MBA, Director of Research and Analyses, Health Council of Canada Faculty, Centre for Health Services and Policy Research, University of British Columbia



Since 1997, substantial federal, provincial, and territorial investments have been dedicated to improving the delivery of publicly funded primary health care in Canada. Yet, a performance measurement strategy to monitor this sector, inform quality improvement initiatives, and assess the impact of renewal efforts is lacking. This

session will share information about research and consultations conducted in Canada, as well as lessons learned, regarding:

- the development and validation of a theoretically based, research-driven performance measurement framework;
- public, provider, and policy perspectives on priorities for information; and
- implications for the development of a feasible strategy to collect and disseminate that information.

Diane Watson, PhD, is the inaugural director of Research and Analysis at the Health Council of Canada. The Health Council was established in 2003 by the First Ministers in Canada to monitor and report to Canadians on the progress of health care renewal. Dr Watson holds this position 4 days per week and retains a faculty position 1 day per week at the Centre for Health Services and Policy Research at the University of British Columbia. She holds a doctoral degree in Health Policy, Management, and Evaluation from the University of Toronto, and a master of business administration from the University of Western Ontario and Stockholm School of Economics. Dr Watson is a Harkness Associate in the Health Care Policy Program of the Commonwealth Fund.



NAPCRG 2007

October 20-23

**Sheraton Vancouver Wall Centre
Vancouver, British Columbia**

Don't miss the 35th NAPCRG Annual Meeting being held in Vancouver. Watch for details in future newsletters and our Web site www.napcrg.org.



Photos courtesy of Tourism Vancouver

Preconference Workshops

Sunday, October 15

8 am–12:30 pm

Place Matters: Using Geographic Information Systems in Primary Care Research

Canyon Suite IV

Norman Oliver, MD, University of Virginia; Robert Phillips, MD, Andrew Bazemore, MD, Jessica McCann, MD, Robert Graham Center

Geographic information systems (GIS) now play an integral part in today's field of primary care research. This workshop will include a short introductory talk on GIS and spatial analyses in health services research. The introduction will be followed by a 45-minute session in which three examples of research by NAPCRG members using GIS technology will be presented. The workshop then will receive a lecture on key methodological questions involved in conducting spatial analyses using GIS. Next, a lecture will be given by someone from the Robert Graham Center on Health Policy Studies, presenting their HealthLandscape.com, which is a Web-based GIS tool for health services and health policy research. The tool will be discussed and a demonstration given of its functioning. Following a break, workshop participants will receive a talk on how to get started on incorporating GIS and spatial analyses into their research. This talk will be followed by a short presentation, presenting pearls on navigating HIPAA and IRB issues pertinent to GIS research. The workshop will conclude with a poster session in which workshop participants will display and discuss their own research using GIS. Those wishing to present posters will be asked to submit abstracts to the workshop organizers for review and selection.

This workshop will aim to: (1) provide an overview of uses of GIS technology in primary care, health services, and health policy research, (2) examine methods for special data collection, manipulation, and management, (3) explore which measures to map and at what geographic scale to conduct analyses, (4) examine GIS approaches that conform to HIPAA regulations and assure IRBs of safe and ethical research conduct, and (5) present an overview of a new Web-based GIS tool for primary care research.

Intended Audience: All researchers with an interest in GIS and what it can do for primary care research in their department are welcome to attend.

Fee: \$65 US; \$73 Can (includes continental breakfast)

1–4:30 pm

Fundamentals of Building a Primary Care Practice-based Research Network: Lessons Learned From the Federation of Practice-based Research Networks

Canyon Suite III

Margaret Love, PhD, University of Kentucky; John Ryan, DrPH, University of Miami; Lyle Fagnan, MD, Oregon Health & Science University; Chester Fox, MD, SUNY at Buffalo; James Mold, MD, MPH, University of Oklahoma HSC; Kevin Peterson, MD, MPH, University of Minnesota; Jonathan Temte, MD, PhD, University of Wisconsin

This workshop starts with a panel of four practice-based research network (PBRN) directors, who will present their strategies and experiences regarding mission, governance, member recruitment, communication with members, community involvement (ie, patient communities), identifying partners, and funding. These directors serve on the Steering Committee of the Federation of Practice-based Research Networks (FPBRN) and represent networks in four different regions of the United States. Second, community-based PBRN member clinicians will share their reasons for participating in a PBRN. Finally two FPBRN directors will discuss new, national opportunities for PBRNs.

This session is intended to (1) inform and orient new network leaders about critical elements of strategic planning in developing and sustaining their PBRNs, (2) facilitate an exchange of ideas among all participants about potentially successful strategies, and (3) introduce new areas for growth in PBRN research. Audience members will be invited to ask questions of all the presenters, with time scheduled for discussion. All participants are encouraged to share their own experiences and perspectives.

Intended Audience: New practice-based research network leaders will gain the knowledge they need to be successful in developing and sustaining their network. Experienced network leaders may also gain new ideas for how to expand their network.

Fee: \$50 US; \$56 Can (includes soft drinks and light snacks)

8 am–4 pm

How to Build a Sustainable NIH-funded Research Program

Joshua Tree II

Michael Fleming, MD, MPH, University of Wisconsin

There is limited information on how a family physician can build a sustainable research program and community laboratory. Unlike our basic science and public health colleagues, there are few models or mentors to guide us. There is no template or guidebook. This workshop will provide participants with the opportunity to learn from each other on methods that have worked for them.

The workshop is intended to assist primary care clinicians and scientists in building sustainable NIH-funded research programs and community laboratories.

The all-day workshop will consist of four components focused on: (1) recruitment and funding of graduate students, (2) utilization of post-doctoral research fellows, (3) how to obtain resources from medical school, hospital, foundation, university, and local tax-supported programs, and (4) federal funding opportunities.

Each component will include a short didactic presentation, case studies, and focused group discussions. Dr Fleming will lead each of the seminars.

Intended Audience: The workshop will be limited to 40 participants. Each participant should be the primary investigator on an active NIH/AHRQ grant or have a NIH/AHRG grant in review. International colleagues who have equivalent funding are eligible.

Fee: \$145 US; \$105 Can (includes continental breakfast and lunch)

8:30 am–4 pm

Academic Family Medicine Research Development: Where Are You, Where Do You Want to Be, and How Can You Get There?

Agave Ballroom

Carlos Jaen, MD, PhD, FAAFP, University of Texas HSC at San Antonio; Jeffrey Borkan, MD, PhD, Brown Medical School; James Campbell, PhD, University of Missouri-Columbia

This workshop will draw on already available needs assessment instruments, case examples, and a workshop format that has proven to be successful at the University of Missouri-Columbia. Participants, paired from each participating department, will assess their needs and current level, examine case examples, participate in small-group discussion around salient issues, and re-examine in the large group specific issues leading toward an action plan to take home for their department. Dyads of chairs and research directors/senior researchers will use their departmental self-assessment to develop an action plan. Members of the Association of Departments of Family Medicine will contact participant dyads at 6 months and 1 year after the workshop to evaluate how many of the action steps were taken in each of the departments to develop research infrastructure to their state goal.

Participants of this session will, through use of already available instruments, leave the session with an action plan that outlines: (1) what level of infrastructure their academic department is at, (2) where they want to move that level to, and (3) how they can get to the desired level. They will also understand what the tough decisions and issues will be along the way.

Intended Audience: Anyone who has a goal for the direction of his/her own department's research, from novice researchers to program directors, will be able to gain insight from this workshop on how to achieve that goal.

Fee: \$145 US; \$160 Can (includes continental breakfast and lunch)

Distinguished Papers

Monday, October 16

10:45-11:15 am

DP1-Myocardial Infarction Mortality in Rural and Urban Hospitals: Rethinking Measures of Quality of Care

Coronado I

James, Paul, University of Iowa; Li, Pengxiang; Ward, Marcia

Context: Studies have shown that patients with acute myocardial infarction (MI) have higher mortality rates in rural hospitals than urban hospitals suggesting substandard quality of care. **Objective:** To examine in-hospital mortality of MI patients admitted to rural hospitals compared to urban hospitals. **Design:** Retrospective observational design using the Iowa State Inpatient Dataset. **Setting:** Iowa hospitals in 2002 and 2003. **Subjects:** 12,191 Iowa residents age 18 years or older hospitalized with a principal diagnosis of acute MI (ICD-9-CM codes: 410.01- 410.91). **Instrument:** 116 Iowa hospitals were classified as rural or urban. Age, sex, payor status, admission type, and race were collected along with two comorbidity indices, Charlson comorbidity index and All Patient Refined DRGs to calculate risk-adjusted mortality. The distances from each patient's home to the nearest urban Iowa hospital were used as an instrumental variable to compare risk-adjusted mortality controlled for unmeasured confounders. **Outcome Measures:** In-hospital mortality was the primary outcome measure. **Results:** Unadjusted and risk-adjusted mortality rates using logistic regression models indicated significantly lower in-hospital mortality for MI patients admitted to urban hospitals (6.4% vs. 14% unadjusted.). Urban and rural MI patients differed significantly on observed variables. Using the instrumental variable technique, mortality differences disappeared suggesting that the traditional logistic regression models could be confounded by unmeasured patient variables. **Conclusions:** Mortality from MI in rural hospitals is not higher when controlled for unmeasured confounders. Current risk-adjustment models may not be sufficient when assessing hospitals that perform different functions within the health care system. Unmeasured confounding is a significant concern when comparing heterogeneous and undifferentiated populations.

DP2-Distress and Therapeutic Interactions in Patients With Advanced Metastatic Cancer: The Self-integrity Model

Joshua Tree

Reeve, Joanne, University of Liverpool; Lloyd-Williams, Mari; Payne, Sheila; Dowrick, Christopher

Context: Distress in patients with terminal cancer is common; optimal treatment approaches remain unclear. Palliative care research advocates screening for depression as a treatable cause of distress; but there are theoretical and empirical problems which limit its utility in primary care. Understanding and treating illness experience from a Narrative Medicine perspective may offer new insights into development of a primary care-oriented approach to supporting this patient group. **Objective:** To explore the impact, meaning and response to distress in patients with advanced cancer, through a narrative approach. **Design:** Qualitative study. **Setting:** GP Practices, Liverpool. **Patients:** Purposive sample: 19 adults with advanced metastatic cancer; aged 45-83 years; eight men; eleven identified as at high risk of depression. **Instrument:** Semi-structured interviews. **Outcome Measures:** Transcripts analyzed using the phenomenographic method of Marton. **Results:** Analysis revealed that life events, including illness, challenged individual's core selves - the values and assumptions which mattered most to them. Threat caused distress. People subsequently sought to restore emotional equilibrium through reflection (identifying meaning in events); and/or through responses at an emotional level - releasing the negative emotion and finding opportunities for experience associated with positive emotions. Thus we have developed a new model (the Self-Integrity model) to explain experiences and reactions to distress in this patient group. Importantly, we found evidence that health care professionals may support or disrupt the process of maintaining Self-Integrity, offering insights into the therapeutic and disruptive effects of patient-practitioner interactions. **Conclusions:** This model offers potential to develop clinical practice through new patient-centered approaches to understanding need in people with terminal cancer presenting with emotional health problems. The results also provide insight into the development of therapeutic approaches at both a reflexive and emotional level. Finally we offer our model of Self-Integrity as the basis for future work into the nature of the therapeutic interaction.

DP3-Preventing Low Birth Weight Babies: The Role of Primary Care

Agave Ballroom

Coco, Andrew, Lancaster General Hospital; Ratcliffe, Stephen; Horst, Michael; Anderson, Janice; Brooks-Barr, Wendy; Bennett, Ian

Context: Low birth weight (LBW) is a serious, complex, health problem. Primary care interventions that have been shown to improve LBW prevention include treatment of inflammatory conditions and depression, promoting smoking cessation, and increasing inter-pregnancy intervals. Objective: To assess physician compliance with these interventions. Design: Retrospective cohort study of data collected in family medicine residency practice-based research network (PBRN). Setting: 13 family medicine residency programs in the Northeast US. Participants: 2,404 low income maternity patients. Intervention: None, collection of baseline measures. Outcome Measures: rates of screening and odds ratios of LBW infant for screening variables in logistic regression model. Results: LBW rate of 8.3%. Physician compliance rates: 1.) Smoking – screened for in 93% of visits with intervention advised in 86% of smokers and quit rate of 40%. 2.) Asymptomatic bacteriuria – 91% screened, 69% of positives treated. 3.) Asymptomatic bacterial vaginosis – 41% of those with risk factors screened before 16 weeks and 84% treated 4). Depression – 45% screened prenatally, 49% postpartum. 5.) Postpartum contraceptive plan -- 91%. Odds of a LBW infant were decreased with smoking cessation (OR=0.16, 95% CI; 0.05 -- 0.58) and as the inter-pregnancy interval increased in 6 month increments from ?6 to ?24 (OR=0.72, 95% CI; 0.55 – 0.98). Conclusions: There is potential to improve prenatal care in family medicine residency programs that could decrease LBW rates.

Distinguished Papers

Tuesday, October 17

10:45-11:15 am

DP4-Progression from Prehypertension to Hypertension in a Cohort of Adults Aged 45-64 Years: The Role of Traditional and Psychosocial Factors

Presidio Ballroom

Player, Marty, Medical University of South Carolina; King, Dana; Mainous, Arch; Geesey, Mark

Context: Hypertension is a one of the most common conditions predisposing to cardiovascular disease, and prehypertension has an even higher prevalence. It is unclear which risk factors contribute to the progression from prehypertension to hypertension. Objective: To determine which traditional cardiovascular risk factors and various psychosocial stress measurements are associated with the progression from prehypertension to hypertension. Design/Setting: Secondary data analysis of the Atherosclerosis Risk in Communities (ARIC) study, a prospective cohort study of 15,792 men and women ages 45 to 64 years at enrollment in four communities across the United States. Patients: Participants with blood pressure in the prehypertension range at the initial visit of the ARIC study were included (n=2822). Outcome Measures: Progression from prehypertension to hypertension. Results: Using backward elimination stepwise logistic regression, the factors significant for progression from prehypertension to hypertension were advanced age (adjusted odds ratio [AOR] 1.44, 95% confidence interval [CI] 1.21-1.72), female gender (AOR 1.38, 95% CI 1.13-1.67), obesity BMI (AOR 1.45, 95% CI 1.15-1.84), current smoking status (AOR 1.32, 95% CI 1.04-1.67), having a high depression symptom score (AOR 1.51, 95% CI 1.23-1.87), and having a weight increase of >5% (AOR 1.23, 95% CI 1.02-1.49). Conclusions: The findings indicate that depression and weight gain are the two biggest modifiable factors associated with the progression from prehypertension to hypertension. These findings were maintained after controlling for age, gender, BMI, smoking status and other factors. Further research is needed to more fully understand the role of psychosocial factors in the development of hypertension.

DP5-A Relationship-centered Model of Family Medicine Performance

Joshua Tree

Lanham, Holly, The University of Texas at Austin; McDaniel, Reuben; Crabtree, Benjamin; Miller, William; Stange, Kurt; Tallia, Alfred; Nutting, Paul

Context: Researchers, leaders, and practitioners in health care continue to search for new tools and strategies for improving the quality of health services. In general, research efforts have tended to focus on improving health care delivery by separately improving discrete parts of the health care system. In reality, the parts of a health care system do not function independently from each other; they are highly interrelated, and they interact in complex and patterned, but unpredictable ways. **Objective:** The purpose of this paper is to demonstrate that the relationships in primary care practices can be studied in a deeper, more specific, more meaningful way giving individuals who are interested in improving the quality of health care at the primary care level a clearer picture of how relationships can help a practice move toward its goal of delivering high quality and cost effective health care. **Design:** Comprehensive analyses of qualitative data from more than one hundred practices in five states derived from studies conducted by this research group during the past ten years. **Setting:** A diverse set of more than one hundred family practices in five states over a ten year period. **Results:** A conceptual model highlighting the importance of seven characteristics of relationships in primary care practice performance is presented. **Conclusions:** Improvements in health services at the primary care level will require careful understanding of and attention to the nature of the relationships among all members of primary care practices.

NAPCRG Program Committee

NAPCRG gives special thanks to the members of the Program Committee for their work on the 2006 Annual Meeting.

Arch Mainous, III, PhD, Chair
Medical University of South Carolina

Bruce Arroll, MBChB, PhD
University of Auckland

Jeannie Haggerty, PhD
University of Montreal

Dana King, MD
Medical University of South Carolina

Paul Little, MD, MBBS, MRCP
Southampton University

Diane McKee, MD
Albert Einstein College of Medicine

Rebecca Meriwether, MD, MPH
University of South Carolina

Martin Dawes, MBBS, PhD
McGill University

Judith Belle Brown, PhD
University of Western Ontario

Monday, October 16

Concurrent Paper Sessions

11:30 am – 12:30 pm

OBSTETRICS I (A1-A4)

CORONADO I

A1-Time to Cesarean Section: Is the 30-minute Guideline Appropriate?

Naismith, Angela, Dalhousie University; Murphy-Kaulbeck, Lynn; Mancuso, Michelina

Context: Obstetrics literature alludes to a thirty minute consensus guideline for emergency cesarean sections (C/S). We set out to show the reality of time to emergency C/S at our hospital and, if greater than thirty minutes, that it did not negatively affect fetal outcomes. Family physicians at our hospital are an integral part of obstetrical care.

Objective: To determine the time to emergency C/S at a regional hospital, what influences this time and if fetal outcomes are affected by longer times. **Design:** Retrospective analysis of 100 consecutive emergency C/S. Written indication for cesarean section, time of day, and calculated decision to incision time was recorded. Fetal outcomes measured include cord pH and Apgar scores.

Setting: Regional Level II Hospital. **Patients:** One hundred women who required emergency C/S in 2002. **Outcome**

Measures: The primary outcome was the time to C/S. Secondary outcomes included fetal outcomes relative to time to C/S, and if time of day or indication for C/S influenced time to C/S. **Results:** Average time to C/S was 97 \pm 73 minutes. ANOVA comparing time of day revealed a significant difference between shifts ($P=0.022$). For urgent C/S between 16:00 hours and midnight, mean time was 119 minutes compared to 81 minutes (midnight-0800) and 76 minutes (0800-1600), respectively. Time to C/S for fetal indications was significantly shorter compared to maternal indications ($P=0.046$). No correlation between fetal outcomes and time to C/S was found. **Conclusions:** Average time to urgent cesarean section was greater than 30 minutes but poor fetal outcomes were not present when assessed using cord pH and Apgars. Comparison of times and indications for C/S suggest that physicians use clinical judgement and experience to select patients at highest risk of poor outcome. Time of day when the decision is made for C/S does impact wait time.

A2-An Association Between a Higher Rate of Labor Induction and a Lower Rate of Cesarean Delivery in Urban Multiparous Women

Nicholson, James, University of Pennsylvania; Stenson, Morghan; Cronholm, Peter

Context: Annual cesarean delivery rates have been increasing in the United States for the past eight years. The 2004 rate reached an all-time high of 29.1%. Most attempts to limit this trend have been directed toward women without previous delivery (nulliparas) or women with a history of cesarean delivery (VBAC's). However, pregnant women who have previously experienced only vaginal delivery (multiparas) make up the largest parity group, and a method of care that could reduce the cesarean delivery in this group would have a significant impact on population cesarean delivery rates.

Objective: To determine if exposure of multiparas to the Active Management of Risk in Pregnancy at Term (AMOR-IPAT) was associated with a lower group cesarean delivery rate. **Design:** A retrospective cohort design was used to compare the outcomes of 123 multiparous pregnant women exposed to AMOR-IPAT to 304 randomly selected multiparous women that received standard management.

Setting: An urban quaternary teaching hospital. **Patients:** Multiparous singleton pregnancies who received their prenatal care from a hospital-affiliated clinic, had no pre-37 week indication for cesarean delivery, and delivered after 37 1/2 weeks gestation. **Intervention:** AMOR-IPAT used risk factors for cesarean delivery to guide an increased use of prostaglandin-assisted preventive labor induction. **Outcome Measures:** Mode of delivery, degree of maternal perineal injury, infant APGAR scores, and type of nursery admission. **Results:** The two groups had comparable levels of prenatal risk and previous obstetric problems. The AMOR-IPAT exposed group experienced a higher induction rate (61.0% vs. 15.8%, $P<0.001$) and a lower cesarean delivery rate (0.8% vs. 9.9%, $p<0.001$). Exposure was not associated with higher rates of other adverse birth outcomes.

Conclusions: Exposure of multiparous women to AMOR-IPAT was associated with a significantly lower group cesarean delivery rate. A prospective randomized trial is needed to further explore this association.

A3-How Do Family Medicine Residents and Nurses See Birth, Compared to Family Physicians, Obstetricians, and Midwives?

Klein, Michael, British Columbia Child and Family Research Institute; Wilson, Ron; Hall, Wendy; Aparicico, Dulce

Objectives: Compare attitudes of British Columbia nurses and family medicine residents (FPRs) to attitudes/beliefs of practicing family doctors (FPs), obstetricians (OBs) and midwives from a previous study. **Design/Setting:** Survey: provincial convenience sample British Columbia maternity nurses' ($n=33$) and all UBC FPRs. Survey results are compared to Vancouver FPs and OBs and a British Columbia provincial sample of midwives. **Outcome Measures:** Attitudes to episiotomy, medico-legal issues, post-dates pregnancy, epidurals, EFM, cord gases, free-standing birth centers,

doulas, birth plans, VBACs, cesarean section on request. **Results:** More nurses were in favor of routine episiotomy use, 22.6% vs 0-2% among midwives, physicians and FPRs. All OBs were in favor of induction for post-dates at 41 3/7th weeks vs 30% of midwives, 80.5% FPs and 68% and 77% nurses and FPRs, respectively. Sixty-six to 75% of FPs and midwives appreciated that routine epidurals cause malpositions vs only 25% to 33% of OBs, nurses and FPRs. All midwives and 71% of nurses would practice in an out-of-hospital birth center vs 25% of OBs, while FPs and FPRs fell between. 85% of midwives felt that doulas improve birth outcomes, while only 39% and 58% of OBs and FPs, respectively. FPRs (76%) and midwives (61%) were in favor of birth plans, while only 15% of OBs agreed. 49% of FPs and 61% of FPRs agreed. Half of OBs and 38% of FPRs were in favor of cesarean on request, vs 3.3% of nurses, 14% of FPs and 15% of midwives. All results $p < .001$. **Conclusion:** Generally OBs and FPRs held views favorable to technology. Midwives were the least so inclined. FPs held views intermediate between OBs and midwives. Nurses had views that varied widely according to the question.

A4-Medical and Midwifery Students', Family Medicine and Obstetrical Residents' Responses to Models of Maternity Care: What Might Attract the Next Generation of Intrapartum Care Providers?

Biringer, Anne, University of Toronto; Carroll, June; Medves, Jenny; VanWagner, Vicki; Oandasan, Ivy; Tobin, Stacey; Moineddin, Rahim; Prakash, Preeti; Thomas, Jackie; Boutilier-Dean, Marie

Context: Ontario is facing a crisis in the provision of intrapartum care as fewer family physicians attend births and midwives are unable to fill the void. New collaborative models of maternity care are being proposed as part of the answer. **Objective:** To determine which maternity care models are preferred by medical students (MS), family medicine (FMR) and obstetrical residents (OBR) and midwifery (MWS) students and which factors would encourage them to include intrapartum care in their future practices. **Design:** Web-based survey administered by modified Dillman technique (final request was paper copy of same survey). **Setting:** Ontario, Canada. **Participants:** All final year MS ($n=573$), all fourth year MWS ($n=109$), all FMR ($n=602$) and OBR ($n=109$) in Ontario, Canada. **Outcome Measures:** Learners were asked whether they would consider practicing maternity care within 7 proposed models. Factors were probed which might encourage intrapartum practice upon graduation. **Results:** Response rates were 26%, 72%, 31%, and 35% for the MS, MWS, FMR, OBR respectively. 30% of MS and 25% of FMR planned to include intrapartum care in future practice compared with 94% of OBR and 100% of MWS. When asked to choose their preferred model of practice, 56% of MS, 62% of MWS and 54% of FMR chose either the multiprofessional or interprofessional model of intrapartum

care, despite the fact that the majority had not observed either during training. 44% of OBR preferred a uniprofessional "hard call" system. When asked to choose the most important factor encouraging provision of intrapartum care, all groups rated an on call arrangement which suited their needs most highly. The MWS ranked a respectful work environment as equally important. Good medical obstetrical back-up, better education and training and increased remuneration were also important. **Conclusions:** An understanding of factors which may attract today's learners into providing intrapartum care is crucial for the stability tomorrow's maternity care system.

COMPLEXITY SCIENCE (B1-B4)

CORONADO II

B1-Improving Clinical Performance Through Standardization of Processes of Diabetic Care in a Family Medicine Practice

Lazar, Joel, Dartmouth Medical School; Jackson, Gillian; Pike, Tracy

Context: Despite wide dissemination of evidence-based guidelines for care of patients with diabetes mellitus, numerous studies document failure to achieve appropriate clinical targets. Optimal diabetic intervention may be especially difficult in primary care settings, where clinicians must manage multiple, and sometimes competing, patient priorities. **Objective:** To assess the impact of a multi-disciplinary protocol on diabetic care in a primary care setting. **Design:** Quality improvement initiative. **Setting:** University-affiliated family medicine practice. **Participants:** 189 office visits by 158 unique diabetic patients. **Intervention:** Standardization of care was accomplished initially through standing orders for HbA1c testing, and subsequently through a Diabetes Task Sheet that aligned practice-wide targets for diabetic measures with specific target-based responsibilities for each member of the practice team. Nursing staff were assigned to implement process changes based upon standing orders; physicians were assigned to implement treatment interventions based upon HbA1c, blood pressure, and LDL cholesterol measurements. Staff accountability was encouraged via signatures on Task Sheet. **Outcome Measures:** Proportions of patients up-to-date for HbA1c, LDL cholesterol and urine micro-albumin tests; and staff compliance with protocol responsibilities. **Results:** Proportion of patients up-to-date for HbA1c increased from 51% among patients seen in March 2005, to 92% among patients seen in February 2006 [$p < 0.001$]. Proportion up-to-date for urine micro-albumin also increased, from 29% to 73% [$P < 0.001$]. LDL testing (not specified in standing orders) increased non-significantly from 62% to 73% ($P=0.10$). Task Sheet was completed at 72.5% of visits. Full compliance with protocol was greater for nursing than for physician tasks [$P < 0.0001$]. Post-hoc chart review identified 176 opportunities to intervene for elevated HbA1c, blood pressure, or LDL; no intervention was documented on Task Sheet in 54% of these cases. **Conclusion:** Protocol-based

standardization of diabetic management improves process measures of care. Assuring appropriate action for measures out of target range will require modification of current strategies.

B2-Knowledge Management and Enhanced Practice Performance: An Exploratory Qualitative Data Analysis

Orzano, A. John, UMDNJ - RWJMS; Tallia, Alfred; McInerney, Claire; Scharf, Davida; Crabtree, Benjamin
Context: Knowledge Management (KM) is the process by which organizations find, share, and develop new knowledge for action. KM impacts performance by influencing work relationships in ways that enhance learning and decision-making. Do primary care practices exhibit knowledge management, and if so how is it manifested? **Objective:** To empirically test the applicability of KM to family practices. **Design:** Qualitative analysis of extensive fieldnotes from 2 practices, selected on variation in size, location, and “innovation,” from an observational study of prevention in 18 practices. Fieldnotes were of participant observation of practice operations, clinical encounters, and in-depth interviews. Data were coded independently using a template of KM related concepts. Face-to-face discussions resolved coding differences among the team of information scientists and physicians. Practices’ preventive service delivery rates obtained by chart audit were also reviewed. **Setting:** Community family practices. **Participants:** Physicians, staff, patients, and other health system/community members. **Outcome Measure:** Description of KM in practices. **Results:** While both practices exhibited some aspects of finding, sharing, and developing new knowledge, KM overall was limited despite implementation of expensive technologies like EMR. Simple techniques such as having common areas for interaction seemed just as effective as complex technology in facilitating practice KM, and appeared to impact productivity and disease prevention through effects on decision making and learning. Many missed opportunities to enhance KM, such as leadership behaviors supportive of an enabling environment, were observed. Some instances were seen where the practices customized KM techniques to enhance specific clinical care outcomes by leveraging existing organizational capacities. **Conclusions:** KM occurs in primary care practices and has important implications for practice performance. Understanding interactions between the patterns of relationships and KM may provide an explanation of why costly technical and/or externally imposed “one size fits all” organizational interventions have demonstrated mixed results and limited sustainability.

B3-Power Laws in Covariability of Anxiety and Depression Among Newly-diagnosed Patients With Major Depressive Episode, Panic Disorder, and Controls

Katerndahl, David, University of Texas HSC San Antonio
Context: Co-variability of anxiety and depression implies nonlinear dynamics. This nonlinear anxiety-depression

interaction suggests that power laws may be observed. Power laws suggest a scale-free relationship, in which 1) differences seen in transition from symptom level to change level may reflect that complex events at the level of mood assessment affect change in mood, 2) co-variation may reflect external factors acting on the patient or multiple internal interrelated factors, and 3) different factors and populations can yield different slopes. **Objective:** To determine whether the relationships between anxiety and depression levels, changes, and rates of change follow power law distributions among patients with newly-diagnosed major depressive episode (MDE), panic disorder (PD), and neither disorder (controls). **Design:** Time series of hourly mood variation. **Setting:** Acute and continuity primary care clinics. **Patients or Other Participants:** Five adult patients presenting each with MDE, PD, and controls. Four patients in each group completed 30-day assessments. **Outcome Measures:** Hourly self-assessments (while awake) of levels of anxiety and depression using visual analog scales. Co-variation in level of symptoms, in change of symptoms, and in rate of change was assessed. Anxiety-depression matrices were prepared for pooled subjects. Power laws were sought using log-log plots of frequency versus order of that frequency. **Results:** Linearity appears to increase from levels to rates of changes. MDE and PD plots appear more linear than those of controls. Adjusted R² terms are larger for MDE and PD subjects compared with controls while the inverse slope is about 2.5 for controls and 1.7-1.9 for those with MDE or PD. **Conclusions:** Although log-log plots for all variables and diagnostic groups could be linear, only those for mood changes met criteria for linearity. MDE and PD subjects differed minimally from each other but differed from controls in their slope and R² terms.

B4-Improving Depression Care: Main Outcomes of the AAFP and ACP Joint Network Study

Nease, Donald, University of Michigan; Gallagher, Kaia; Bonham, Aaron; Gannon, Meghan; Nutting, Paul; Dickinson, Perry; Main, Debbi; Szajkowski, Kate; Graham, Deborah
Context: Despite numerous studies, proven methods to sustainably improve the recognition and care of depression in routine primary care remain elusive. **Objective:** To determine whether by using a collaborative, learning session model, primary care practices could achieve improvements in their depression care through learning and application of practice change techniques such as “reflective-adaptive process” (RAP) cycles and self run improvement teams. **Design:** Single cohort study using a 12 month study period. **Setting:** The American Academy of Family Physicians National Research Network (NRN) and the American College of Physicians Research Network. **Participants:** 9 practices from each of the two practice-based research networks. **Intervention:** 3 Learning Sessions over a 6 month period at which practice champions were instructed in depression care and practice change principles including development of practice improvement teams, use of RAP cycles, and the PHQ-9 as a tool for depression recognition and treatment monitoring.

Outcome Measures: Here we report Assessment of Clinician Depression Management (ACDM) scores from clinicians in participating practices, measured at study beginning and end. ACDM subscales measure use of the following: consultants for shared care, self-management strategies as adjuncts to treatment, a standardized questionnaire (PHQ-9) for identification and monitoring, information systems to identify & track patients and a team approach for depression care. Results: The ACDM showed significant improvement as a total score across practice's clinicians, (means: 49.5 – 63.2, $p < 0.000$), and significant improvement in each subscale except for use of consultants, (7.5 – 8.5, $P = 0.118$). Conclusions: Participating network practices demonstrated the ability to implement improvements in depression care using a non-prescriptive, practice change model, taught through a collaborative, learning session based approach. Further analysis of this project's quantitative and qualitative data will be used to develop a larger study with a longer timeline in order to confirm these findings and evaluate sustainability.

HEALTH CARE DISPARITIES I (C1-C4)

AGAVE II & III

C1-The Impact of Acculturation and Social Network Characteristics on Latino Adolescents' Mental Health

Allen, Michele, UCLA; Elliott, Marc; Kataoka, Sheryl; Hambarsoomian, Katrin; Schuster, Mark

Context: Latino adolescents in the US have higher risk for poor mental health than either whites or blacks. Mental health worsens with acculturation for Latino adults, but neither the reasons for this trend, nor whether it holds true for adolescents have been examined. A better understanding of this disparity in Latino adolescent mental health could help direct primary care and public health interventions. Objective: To document the association between acculturation and mental health for Latino adolescents and assess whether social network characteristics explain the relationship. Design: Cross-sectional survey and social network analysis. Setting/Participants: 258 Latino eighth-graders completed a computerized, self-administered survey and reported 30 social network members' characteristics (age, language use, relationship to respondent, substance use). Outcome Measures: Mental health measured with five-item RAND Mental Health Inventory (MHI-5) scaled from 0 (worst) to 100 (best). Results: Among 258 respondents, 57% were girls, and most were 13-14-years-old. The mean score of the MHI-5 was 66. Twenty-six percent of network members were extended family, and 29% were known by the teen to use substances. Youth spoke mostly Spanish with 18% of network members. In bivariate analysis, having a network with a higher percentage of mostly-Spanish speakers was associated with better mental health ($P = .004$), less network substance use ($P = .01$), more extended-family in the network ($P < .001$), and higher parental monitoring

($P < .001$). In multivariate analysis predicting mental health, language was no longer significant, but parental monitoring ($P = .004$) and more extended-family members ($P = .03$) were protective. Conclusions: These results suggest that mental health worsens with acculturation for Latino adolescents, but that features of their social networks (influence of extended-family members), and parental monitoring explain the association. Efforts to enhance these social factors may protect against mental health worsening with acculturation.

C2-Addressing Health Disparities in Medical Practice: Tensions for Professional Medical Associations

Furler, John, University of Melbourne; Harris, Elizabeth; Harris, Mark; Naccarella, Lucio; Snowden, Teri; Young, Doris

Context: General practitioners (family medical practitioners) are constantly witness to the important effects that adverse social and economic circumstances have on health. It has been suggested that evidence and feasibility should be used to define the appropriate role for GPs in responding to the challenge of social inequality. Professional medical associations may play a lead role in defining the scope of professional responsibilities in such circumstances. Objective: To determine how the Royal Australian College of General Practitioners (RACGP) could best facilitate the engagement of its member practitioners in addressing health disparities. Design/Setting: Review of RACGP training and clinical standard program documents, 80 interviews, and focus groups with GPs. Participants: Key informants within the RACGP, academic general practitioners, influential primary care and consumer advocate leaders, GP trainers and practicing GPs. Results: There is broad acknowledgement that the College has a leading role in enhancing the way the profession addressed health disparities through its work. There is significant variation in views held by internal college respondents, external stakeholders and practicing GPs. Exposure to work in disadvantaged areas during GP training was seen as a key strategy. Mandating this exposure was less agreed on. Setting practice standards for addressing unmet need or ensuring reach of quality care to disadvantaged subgroups was more contentious. An active public advocacy role for the college was most contentious, supported mainly by external stakeholders. Conclusions: Different views seemed driven by different moral orientations. Practicing GPs were oriented around care and compassion for vulnerable patients and communities, while external stakeholders were more oriented around social justice and human rights. The RACGP must balance accountability to the wider community and their members. Defining a role for the profession in responding to health disparities requires an open debate of values and bringing internal and external stakeholders together.

C3-Geographic Information Systems Used to Analyze Race and Socioeconomic Status in Prostate Cancer Incidence in the Southeastern United States

Oliver, M. Norman, University of Virginia; Matthews, Kevin; Smolkin, Mark

Context: Racial disparities exist in prostate cancer incidence, and the underlying causes of these disparities are not completely understood. **Objectives:** 1. Utilize a geographic information system (GIS) to map prostate cancer incidence, using cancer registries from 9 southeastern states, looking for clusters of high and low incidence; and 2. Investigate the independent effect of race on prostate cancer incidence while adjusting for socioeconomic status, using census-derived data. **Design:** A secondary data analysis of all prostate cancer cases in Maryland, Virginia, Tennessee, Kentucky, North Carolina, South Carolina, Georgia, Alabama, and Florida between 1996 and 2002. Cluster analysis used to identify clusters of high and low incidence. A multilevel statistical model developed with prostate cancer incidence as a function of race, age, poverty level, educational level, income, and rural status. **Setting:** Secondary data analysis of state cancer registry and US Census data. **Patients:** All cases of prostate cancer in 9 southeastern states, 1996-2002. **Outcome Measures:** Prostate cancer incidence **Results:** Smoothed maps show a pattern of higher prostate cancer incidence in urban areas of the region. Cluster analysis indicates several clusters of high incidence of prostate cancer. A multilevel statistical model showed a significant positive association for prostate cancer among African-Americans and whites for age and income. Rural status was negatively associated with prostate cancer incidence for both African-Americans and whites. These statistical associations were seen consistently at the county-level but not at the census-tract level analyses. **Conclusion:** Prostate cancer incidence in the region shows clustering. Incidence is decreased in rural areas. Clusters identified in this study could become sites for prevention and outcomes research, as well as for targeted interventions for dissemination of prostate cancer health information.

C4-Strategies to Increase the Effectiveness of Chronic Disease Self-management Programs for Minority and Disadvantaged Populations

Harris, Elizabeth, Center for Primary Health Care and Equity; McDonald, Julie; Furler, John; Kurti, Linda

Context: Chronic diseases account for 70% of the burden of disease, borne particularly by socially disadvantaged people and communities. Chronic Disease Self Management (CDSM) may improve health and quality of life in chronic illness while reducing acute health care demand, but its effectiveness in reducing health disparities remains unclear. **Objective:** To identify evidence based CDSM programs and approaches to improve the health of minority and disadvantaged populations and reduce health disparities. **Design/Setting:** Review of CDSM literature in relation their effectiveness with people from indigenous, migrant, rural

and low socio-economic backgrounds (focus on diabetes, arthritis and asthma). Interviews with Australian experts and four CDSM programs. **Results:** A range of factors were identified that contribute to the success of CDSM programs in these groups: Patient perspective: Increasing levels of health literacy, tailoring information and materials, addressing language barriers, working with the families and communities of patients (a population approach), addressing underlying issues of poverty, lack of quality food supplies. Health system perspective: Ensure program affordability, employ people from the “target population” including Indigenous and bilingual health workers, improve access to high quality primary care services with infrastructure to manage chronic disease. Four common issues were identified affecting the capacity of practitioners and individual to deliver and benefit from CDSM programs: beliefs about the cause and remedy of chronic disease, resources available to support them, level of knowledge and skill working collaboratively and balancing competing demands. **Conclusions:** While no single evidence based approach was identified that would work across all groups a number of approaches to increase effectiveness were identified. We suggest an expansion of the Wagner chronic disease model to better reflect the importance of carers, family and community systems in supporting minority and disadvantaged populations and the influence of health systems and broader social and cultural context on practitioners.

GERIATRICS (D1-D2)

JOSHUA TREE I

D1-Neighborhood Walkability Associated With Depression in Older People

Berke, Ethan, University of Washington; Gottlieb, Laura; Vernez Moudon, Anne; Larson, Eric

Context: Depression in late life is associated with significant morbidity and mortality though few effective neighborhood level interventions have been identified for its prevention. **Objective:** To examine community walkability as a neighborhood-level structural characteristic and evaluate its association with depression in older people. **Design:** Cross-sectional analysis using data from Adult Changes in Thought (ACT), a prospective, longitudinal, cohort study tracking older subjects. **Setting:** Urban and suburban areas of King County, WA. **Participants:** 740 randomly selected men and women aged 65 years or older, cognitively intact, living in the same home for at least 2 years. **Instrument:** Depression is measured with the Center for Epidemiologic Studies Depression Scale. The Walkable and Bikable Communities Project uses objective data to derive a walkability score to predict the probability of walking at least 150 minutes per week. ACT data are linked at the subject level via a geographic information system to this walkability score using varying buffer radii around the subject's home. **Outcome Measures:** Multiple regression analysis is used to test for associations between the neighborhood walkability score and depression.

Results: There was a significant association between neighborhood walkability and depression in older males when adjusted for individual-level risk factors of income, physical activity, education, smoking status, living alone, age, and chronic disease burden. The odds ratio for the interquartile range of walkability score (25th-75th percentile) spanned from 0.32 to 0.34 for buffer radii of 100, 500, and 1000 meters (p-value 0.01 to 0.02) indicating a protective association of neighborhood walkability. **Conclusions:** This study demonstrates a significant association between neighborhood walkability and depression in men over 65 years old. Further research into the effects of neighborhood walkability may inform community-level mental health treatment, and assist providers with treatment plans for depression.

D2-Spiritual Care for Long-term Care Residents at the End of Life

Daaleman, Timothy, University of North Carolina at Chapel Hill; Hamilton, V. Lee; Williams, Christianna; Zimmerman, Sheryl

Context: There is growing attention given to the spiritual care of dying patients. Long-term care (LTC) facilities are common settings in which patients live their final weeks and experience death. **Objective:** To describe spiritual care and examine the relationship between spiritual care and perception of overall care. **Method:** After-death interviews. **Setting:** Stratified sample of 71 assisted living/residential care facilities and 29 nursing homes in four states. **Participants:** Family members of 284 residents who died in LTC settings. **Instruments:** Facility-level data included presence of on-site religious services, counseling by clergy, hospice services, and hospice unit. Family member items included sources of spiritual support, participation in group religious services, and individual devotional activities. **Outcome Measures:** Family member proxy report of spiritual care and impression of overall care (4=very good, 3=good, 2=fair, 1=poor) for decedent residents. **Results:** Overall, residents who received spiritual care were perceived to have better overall care (3.59 vs. 3.25, $P=0.002$). Family ratings of overall care did not differ based on sources of spiritual support, such as family and friends (mean care rating 3.60 for those with support vs. 3.58 for those without, $P=0.92$) and clergy (3.61 vs. 3.47, $P=0.24$). However care was rated more highly among those who received support from facility staff than those who did not (3.76 vs. 3.49, $p < 0.001$). Also, although overall care also was not associated with the availability of counseling by clergy (3.59 vs. 3.53, $P=0.56$); participation in group religious services (3.67 vs. 3.58, $P=0.24$); the availability of hospice services (3.57 vs. 3.56, $P=0.89$); and participation with on-site religious services (3.56 vs. 4.00, $P=0.06$); individual devotional activities provided by staff were related to higher ratings of care (3.87 vs. 3.53, $P=0.001$). **Conclusion:** Interventions to improve the spiritual care for

dying LTC residents may wish to target interactions between residents and facility staff.

D3-Elder Mistreatment in the Nursing Home: A Systematic Review

Lindbloom, Erik, University of Missouri-Columbia; Brandt, Julie; Hough, Landon

Context: As many as 3 million Americans 65 years of age or older have suffered some form of physical or psychological mistreatment. However, much still remains unknown about this phenomenon, particularly in the nursing home. **Objective:** A synthesis of original research concerning elder abuse or neglect in the nursing home environment. **Design:** Systematic review. **Setting/Participants/Outcome Measures:** A literature search was conducted covering the years 1980 through mid-2005, for all English language articles published regarding any form of elder mistreatment in the nursing home. Literature databases included Medline, Medline In-Process, Cinahl, Current Contents, Sociological Abstracts, Social Services Abstracts, Social Work Database and Ageline. 324 citations were retrieved, and these citations (and their references) were assessed for original research material. Review articles and opinion pieces were excluded. **Results:** 91 of the 324 retrieved articles met inclusion criteria as original research. Studies of nursing home staff reveal relatively high rates of witnessed mistreatment, including a report that 36% had witnessed, and 10% had committed, physical abuse in the last year. Rates were higher for psychological abuse. Job satisfaction, resident interaction, stress or violence at home, fatigue, and substance abuse all are staff-related risk factors for abuse or neglect. Prevention programs have lowered abuse reports and improved job satisfaction in several studies, and the presence of an ombudsman has given patients and families a potentially helpful advocate in mistreatment reporting. **Conclusions:** Nursing home mistreatment is complex, but it often involves a stressed care provider. Assuming that major staffing and finance changes in the long-term care system are not immediately forthcoming, efforts to identify and prevent nursing home mistreatment must focus on innovative programs within the current system.

D4-The Elder Abuse Suspicion Index: A Method to Improve Identification of Elder Abuse by Doctors

Yaffe, Mark, McGill University; Wolfson, Christina; Lithwick, Maxine; Weiss, Deborah

Context: Elder abuse (EA) represents an important cause of seniors' morbidity and mortality. Family physicians are well-placed to detect / report EA, yet they rank 10th among professionals doing so. Rapid instruments for doctors to identify EA do not exist. **Objective:** Develop and validate a brief, doctor-friendly tool for use in office settings to elicit suspicion of EA in cognitively intact seniors. **Design:** Questionnaire development and validation. **Setting:** Two university-affiliated family medicine centers and one government-run community health clinic in Montreal, Canada. **Participants:** During 8 months all patients speaking English or

French, aged ? 65, seeing their family doctors for any reason, were approached for a study exploring aspects of daily lives of seniors. Those ? 23 on a MMSE were excluded. 906 individuals entered the study, including their respective 104 doctors. Intervention/Instrument: Use of critical literature review, Hudson's five level taxonomy for EA, and focus groups created a 6 question Elder Abuse Suspicion Index (EASI) which family doctors asked of participants. The latter later underwent a structured 90 minute interview with social workers trained to use a Social Work Evaluation (SWE) – a community "gold standard". Scores on the EASI and SWE were compared. Outcome Measures: Sensitivity and specificity of the EASI and doctors' acceptability of the EASI. Results: 663 seniors completed all study phases. EASI sensitivity and specificity were 0.44 and 0.77 respectively. 95.8% of doctors found the EASI somewhat to very easy to use, in ? 2 minutes in 67.6% of cases. 97.2% felt it would have some to big practice impact and 66.0% a better awareness of EA. Conclusions: A "suspicion index" may carry a lower sensitivity than a "detection tool", but ease of use may promote doctors' ultimate improved rates of referral of possible EA for more in-depth assessment.

HEALTH CARE DELIVERY/HEALTH SERVICES RESEARCH I (E1-E4)

JOSHUA TREE II

E1-Improving Collaboration and Integration Between Providers of Care for Adult Asthma Patients

Berta, Whitney, University of Toronto; Barnsley, Jan; Bloom, Jeff; Cockerill, Rhonda; Davis, Dave; Jaakkimainen, Liisa; Mior, Anne Marie; Talbot, Yves; Vayda, Eugene

Context: Chronic illnesses such as asthma, diabetes, cardiovascular disease and mental health problems are becoming the focus of primary care rather than acute episodes. One of the greatest challenges inherent in the management of chronic care is sustaining patient informational continuity among care providers. Informational continuity entails the assimilation, timely transfer and sharing of information that is essential to coordinating patient care. Objective: We examined four points of patient information transfer between providers of care for adult asthma patients in Ontario including: 1) primary care practitioners and medical specialists, 2) primary care practitioners and providers of care in hospitals, and 3) primary care practitioners and emergency department physicians, and 4) primary care providers and certified asthma educators. We examined four characteristics in relation to these points of transfer that are known to impact information quality and continuity including: information content, information format, transfer context, and mode of transfer. Design: A systematic literature review of articles published between 1990 and 2005 was followed by a two-round modified Delphi consensus process that led to the

identification of 54 indicators of high informational continuity for patient information transfer across the four points of transfer. Setting: Ontario, Canada. Participants: We engaged an eight-member expert panel comprised of primary care providers, specialists, and those with backgrounds in primary care reform, e-health technology, operational management, and guideline development. Results: Of the 70 indicator items forwarded in the first round of the Delphi, our experts rated 54 as essential to informational continuity, 4 achieved moderate consensus, and 12 were deemed low consensus items. Conclusions: The majority of the high consensus indicator items related to aspects of information content and format as essential to informational continuity. Importantly, among content that was deemed essential to informational continuity was information on the roles and timing relating to follow up plans recommended for patients by medical specialists.

E2-Effect of Title VII Funding on FQHC Staffing and NHSC Participation

Rittenhouse, Diane, University of California- San Francisco; Fryer, George; Grumbach, Kevin; Phillips, Robert; Miyoshi, Thomas; Nielsen, Christine

Context: Federally Qualified Health Centers (FQHCs) are a critical component of the health care safety net. President Bush's Community Health Center Initiative will add or expand 1,200 center sites over 5 years. FQHCs are experiencing difficulty recruiting primary care physicians; in 2004 they were recruiting for 643 vacancies. National Health Service Corps (NHSC) physicians are a substantial proportion of physicians staffing FQHCs, yet demand for these physicians far exceeds supply. Objective: To determine whether there is a link between physicians' exposure to HRSA Title VII Section 747 Primary Care Training Grants during medical school and residency and subsequent service in the NHSC or work in a FQHC. Design: The 2004 AMA Masterfile was linked, at the level of the individual physician, to HRSA Title VII program grants files, Medicare claims data, and data from the NHSC, allowing for the identification of physicians exposed to Title VII funds during training, physicians staffing FQHCs, and NHSC participants, respectively. The proportions of physicians in the NHSC and in FQHCs were compared among Title VII exposed and not-exposed physicians. Results: 6.2% (1,819) family physicians exposed to Title VII funds during medical school worked in FQHCs in 2001-2003, compared to only 4.3% of non-exposed FPs/GPs ($P<0.001$). This is a relative increase of 44%. If the exposed physicians had not been exposed to Title VII funds, we would expect 512 fewer family physicians to have worked in FQHCs during this period. The effect of exposure to Title VII grants during residency was similar. We also found an effect of medical school and residency exposure on NHSC participation. Conclusions: Exposure to Title VII grants during medical training is associated with subsequent work in the NHSC and FQHCs. The absence of Title VII funding would substantially increase FQHC and NHSC vacancy rates.

E3-A Comparison of US and UK Family Medicine Practices Using Two Pay-for-Performance Standards

Crosson, Jesse, UMDNJ New Jersey Medical School; Balasubramanian, Bijal; Roland, Martin; Phillips, Robert L.; Bazemore, Andrew; Dodoo, Martey; Fullwood, Catherine; Doran, Tim; Tallia, Alfred; Scott, John
Context: Financial incentives influence physician behavior. Both the Centers for Medicare and Medicaid Services (CMS) and the Institute of Medicine have suggested payment-for-performance (P4P) programs to reward clinicians for higher-quality care. In the UK, the National Health Service P4P program offers primary care practices incentives for meeting certain standards. UK practices made substantial quality improvements prior to implementation. Little is known about how US family medicine practices would fare in P4P systems. Objective: To compare US and UK performance on UK and CMS quality of chronic illness measures. Design: Secondary analysis of data collected in all UK family medicine practices and US family medicine practices participating in the Using Learning Teams for Reflective Adaptation study. Setting: 55 practices in New Jersey and Pennsylvania. 8545 UK practices. Instrument: For US practices, chart auditors assessed 20 randomly selected patient charts for each of four chronic illnesses (asthma, diabetes, hypertension, coronary artery disease). UK data was extracted from clinical computing systems. Outcome Measures: Mean percentage of patients meeting standards. Results: We obtained comparable data on 17 UK and 1 CMS chronic illness measure. After adjusting for patient exclusion, UK performance exceeded that of the US on 15 UK and the CMS indicator. For diabetes, UK exceeded US performance on use of registries (99.6% v. 17.5%), percentages of patients with a record of smoking status (94.3% v. 44.9%), and four other measures while US performance was better on HgbA1c measured in the previous 15 months (94.3% v. 90.8%). Similar patterns were found across the other illnesses. Conclusions: A US program similar to that in the UK could encourage US family medicine practices to make improvements in processes of chronic illness care. Given the gap between US and UK practices documented here, such improvements could have a significant impact on chronic illness care.

E4-The Comparison of Models of Primary Care in Ontario Study

Hogg, William; Dahrouge, Simone; Geneau, Robert; Muldoon, Laura; Manuel, Doug; Russell, Grant, University of Ottawa
Context: Canada is one of many nations investigating effective and efficient methods of delivering health care. This paper presents the methodology and findings of a \$2.2 million study describing and comparing four predominant models of primary care in which providers are remunerated by salary, capitation, fee for service (FFS), or a blended capitation/FFS formula. The study examines the performance of these models across dimensions of quality

of health care service delivery (QHCS) and technical quality of clinical care (TQCC). Design: A Cross-sectional mixed-method study with concurrent nested strategy incorporating quantitative and qualitative methodologies. Setting: Primary care practices in Ontario, Canada. Participants: 160 family practices (40/model): 5-8000 patients; and approximately 500 providers. Instruments: Patient, provider and practice surveys based on the Primary Care Assessment Tool and supplemented from other sources are used to describe the settings and assess QHCS. Chart audits relying on standard indicators are performed to evaluate TQCC. Semi-structured interviews with patients, providers, and managers. Outcome Measures: QHCS is measured through dimensions of accessibility, continuity, service integration, comprehensiveness, patient-provider relationship and provider satisfaction while TQCC considers acute and chronic disease management, disease prevention and health promotion. Multi-level regressions will be performed to analyze the results. Results: 70% sites have been recruited. Data collection will be completed by May 2006. Preliminary analyses suggest that models differ in several dimensions. Emergent qualitative and quantitative findings are clarifying organisational factors underlying these differences. Results of the completed study will be presented. Conclusions: This study provides a window into understanding some of the complexity of the delivery of primary care and will inform decision makers on the strengths of different models in responding to their population needs. Organizational factors associated with highly performing models will help guide future investments in primary care.

EDUCATION/TRAINING I (F1-F4)

CANYON SUITE I

F1-What is the Impact of Regional Training Centers on Practice Location and Specialty Choice of Medical Students?

Zollinger, Terrell, IUPUI Bowen Research Center; Brokaw, James; Mandzuk, Christina; Wade, Michael; Deal, Dennis
Context: To improve the distribution of primary care providers, innovative approaches are required to recruiting medical school graduates to practice in areas of need. Objective: To determine whether students who attend regional training centers are more likely to return to those same regions and to practice primary care medicine. Design: Cohort. Setting/Participants: 1,730 IUSM medical graduates from 1991 to 1997 who are practicing in Indiana. Intervention: Indiana University School of Medicine (IUSM) has a unique training program, where during the first two years, half the students study at the main medical campus in Indianapolis, and the other half are distributed among eight regional training centers throughout the state. All students return to Indianapolis for the years 3 and 4. Outcome Measures: Practice location and specialty. Results: Multivariate logistic regression was used to determine the effect of training at a regional center on graduates' specialty choice and practice location while

controlling for the effects of several covariates thought to influence these career choices (age, sex, race, socioeconomic status, academic achievement, hometown). Students who attended two of the regional training centers were significantly ($P < .05$) more likely to practice primary care medicine (O.R. = 1.6 and 1.8 respectively). For five of the eight regional centers, students who trained in a specific center were significantly ($P < .05$) more likely to return to that same region to set up practice (O.R. = 2.2, 2.5, 2.9, 3.9, 13.3) when controlling for the covariates, including hometown location. **Conclusions:** These findings may provide guidance for medical schools as they attempt to design training programs to address the growing shortage of primary care providers in rural and other underserved regions.

F2-Medical Students' Attitudes to Psychiatric Illness in Primary Care

Dixon, Robert; Jones, Lisa; Humphreys, Martin; Roberts, Lesley, University of Birmingham

Context: General Practitioners (GPs) hold negative attitudes towards patients with schizophrenia, which are not simply due to the psychiatric nature or chronicity of illness.

Whether these attitudes are already established by the time medical students graduate is not clearly understood.

Objective: To determine whether medical students already hold negative attitudes towards mental illness in a primary care setting, and to examine whether these are affected by personal or educational factors. **Design:** Cross-sectional vignette study. **Setting:** Birmingham University Medical School, UK. **Participants:** 1239 medical students from all years of the undergraduate program. **Instrument:** Students were randomly presented with one of four case vignettes identical except for mention of previous diagnosis of schizophrenia, depression, diabetes or well-being. Twelve attitudinal statements relating to vignettes were rated on a 6-point likert scale. **Outcome Measures:** Primary: Between group (determined by vignette received) differences in attitudinal response. Secondary: Association between personal or educational factors and attitude. **Results:** 88% (1081) students responded. Students held more negative attitudes about patients with schizophrenia and depression. They would be less happy to have them on their list, believed they would consume a lot of time and would be less compliant. Students would be less likely to advise a patient with schizophrenia to eat healthily and exercise (all significant at $P < 0.05$ level). Neither general clinical, nor psychiatric training altered attitudes, although personal experience of mental illness was associated with greater sympathy ($F = 3.161$, $P = 0.043$). **Conclusions:** Patients with mental illness provoke negative attitudes in medical students, which are not altered by furthering education and are similar to those previously reported among GP's. Fewer than 35% of GP's undertake continuing training in community mental health and more effective undergraduate education is therefore needed to reduce stigmatising

attitudes, which are barriers to effective primary care. The association between personal experience and sympathy may suggest useful educational activities.

F3-Predictors of Clinical Skills Experience for Student at Five Medical Schools

Merchant, Mary, University of Iowa; Levy, Barcey; Daugherty, Janice; Steele, David; Maughan, Karen; Lyons, Paul; Kreiter, Clare; Stine, Curtis

Context: Educators evaluating students' clinical experiences on required Family medicine (FM) rotations have little to guide them, since experiences may vary depending on student and rotation characteristics. **Objectives:** 1) To identify factors that predict higher levels of experience with clinical skills and 2) to develop bench marks for educators regarding the skills students experience. **Design/Setting/Participants:**

Collaborative, observational study using student self-reported data from M3 students at 5 medical schools relating students' clinical experience during their FM rotations to student and rotation characteristics for academic year 2005-06. The study was approved by the Human Subjects Committee at each participating school. **Instrument:** Checklist with 168 skills completed by students via a web-based format. **Outcome Measures:** Summed total skills and subscale scores; each skill rated using a 5-point scale; 1=not seen to 5=managed or done > 4 times. **Results:** Overall response rate 56%; 18% to 100% by school. Univariate analyses showed that total skills experience did not differ by student or preceptor gender, but did differ by school. Student experience with several skills subscales were significantly different by student gender, preceptor gender, and rotation characteristics. Students rotating with female preceptors received significantly more experience with patient education and female-specific skills, while students with male preceptors received significantly more experience with procedural skills. Rural sites provided the most experience with procedural skills; urban sites provided the most experience overall and with several subscales including patient education, reproductive, and musculoskeletal. Only school and rotation site remained significant in a regression model for total skills ($r^2 = 0.11$). Students attending schools with longer FM rotations and completing rotations in urban locations were more likely to receive higher skills experience. **Conclusions:** Several factors are associated with students' skills experience. This collaborative study provides useful evaluation information, as well as information for developing benchmarks to guide FM rotation experiences. **Acknowledgement:** This study was supported by the University of Iowa Office of Consultation in Medical Education and Research. **Note:** By the time of NAPCRG 2006, we will have data for a full academic year from each school.

F4-Family Physicians and Their Experiences of Medical Error

Heidt, Lisa, *University of British Columbia; Kirkham, Colleen*

Context: There has been a recent dramatic increase in the medical literature on medical error, much of it directed toward error prevention and detection. However, little discussion to date has addressed the impact of medical error on the physician. As well, even less is known about the situation in primary care, where the majority of patient contacts with health care providers will occur. **Objectives:** The purpose of this study is to gain a better understanding of family physicians' experiences with medical error. Specific objectives include (1) increasing understanding of the emotional impact of medical error on the family physician, (2) identification of effective error response strategies to reduce emotional harm for both physician and patient, and (3) identification of potential barriers to healing. **Design:** Descriptive qualitative study. **Instrument:** Four family physicians participated in a one-on-one semi-structured interview with the author. Transcripts were subsequently analyzed to identify major themes. **Results:** The family physicians interviewed had had emotionally impacting experiences of medical error. Such errors had resulted in feelings of guilt, incompetence, and, in some cases, fear of legal repercussion. All participants felt that seeking and receiving support from professional colleagues was the single most important coping mechanism in dealing with medical error. Intellectual analysis of the error and subsequent change of practice was also noted to be helpful. Patient disclosure occurred in the majority of errors discussed, and was facilitated in cases where a long-standing doctor-patient relationship preceded the error. Both honest disclosure and a continuation of the doctor-patient relationship were felt to provide a means of healing for both parties. **Conclusion:** In general, the family physicians in this study displayed effective error response strategies. This may be a reflection of a biased sample, or may be reflective of the advantage family physicians have in terms of a long-standing doctor-patient relationship in allowing open and honest communication.

EPIDEMIOLOGY I (G1-G4)

CANYON SUITE II

G1-Patterns of Preventive Health Care Delivery by Primary Care Providers

Upshur, Ross; Maaten, Sarah; Leong, Alan; Wang, Li, Jaakkimainen, Liisa

Context: Preventive health care is a cornerstone of modern primary care. The majority (70%) of diseases commonly seen in primary care practice are preventable. Previous studies show that rates of preventive services are lower than recommended. **Objective:** To provide descriptive

information about patterns of: 1) preventive healthcare utilization of Ontarians, and 2) preventive health behavior of Ontarians. **Design:** Secondary analysis of data from the 2000/01 Canadian Community Health Survey (CCHS). **Setting:** Primary care in Ontario. **Participants:** 37,681 Ontarians aged 12 and older. **Outcome Measures:** Utilization rates of preventive healthcare services; and behavioral patterns regarding preventive care. **Results:** A large proportion of the Ontario population reported having preventive primary care. Almost all Ontarians (94%) have had their blood pressure taken. Less than half of Ontarians aged 12 or older reported ever having received a flu vaccination. Compared with females, males had a significantly lower rate of having received a flu shot within the past 2 years. People that had regular physicians were more likely to report receiving preventive primary care. With respect to preventive health behavior, half of Ontarians reported being inactive. Females were found to be more inactive than males. Approximately one quarter of Ontarians aged 12 or older were found to be current smokers. With respect to obesity, 34% of Ontarians were classified as overweight, and 16% were found to be obese. For all age groups, the proportion of overweight and obese males exceeded those of females. **Conclusions:** Utilization of preventive services was associated with age, gender, region, and having a regular physician. The pattern of results suggests that the preventive care guidelines of the Canadian Task Force on Preventive Health Care are incompletely followed. However, those Ontarians who have a regular physician are significantly more likely to receive recommended preventive services.

G2-Self-rated Risk for Experiencing a Major Cardiovascular Event and Subsequent Cardiovascular Death: A Self-fulfilling Prophecy?

Gramling, Robert, *Memorial Hospital of Rhode Island; Roberts, Mary; Zierler, Sally; Lu, Bing; Eaton, Charles*

Context: Self-rated risk is a dimension of one's health status that is important to consider as biomedicine moves toward management of risk as opposed to treatment of illness. Prior work observes higher self-ratings of cardiovascular disease (CVD) risk to predict CVD events, however this work was limited by potential confounding. **Objective:** To evaluate whether higher self-ratings of CVD risk are associated with fatal CVD events after controlling for potential confounding by traditional and non-traditional CVD risk factors. **Design:** Longitudinal cohort. **Setting:** Population-based sampling between 1990 and 1993 as part of the Pawtucket Heart Health Program. **Participants:** 1027 men and 1443 women age 40-75 years; Assessment: Household interview, physical exam and lipid measurement; participants were asked the following: "Compared with persons of your own age and sex, how would you rate your risk of having a heart attack or stroke within the next 5 years...High, Average, Low, or Don't know?". **Outcome Measures:** National Death Index records 1990-2004; 117 cases defined as main cause of death attributed to CVD. **Results:** Higher self-rated risk demonstrated a dose-dependent

association with the case-rate among men (“Low”: 4.7%, “Average/DK”: 6.9%, “High”: 11.8%; chi-square $P=0.01$) but not among women (2.6%, 3.7%, 3.3%; chi-square $P=0.48$). Multivariate Cox proportional hazards modeling demonstrated important association between “high” self-rated risk and CVD death after adjusting for age, blood pressure, smoking status, total to HDL-C ratio, prior MI, family history and diabetes (Men: $HR=2.39$, $P=0.003$; Women, $HR=0.80$; $P=0.59$). More extensive control of confounding by propensity score method observed similar relation after additional adjustment for city of residence, sampling year, income, educational attainment, marital status, foreign birth, BMI, physical activity, and lipid/ blood pressure/ depression/ estrogen medications (Men: $HR=2.04$, $P=0.01$; Women, $HR=0.83$; $P=0.68$). Results robust to CHD-specific mortality. **Conclusions:** Higher self-rating of CVD risk is independently associated with CVD death among men.

G3-Winter Terrain Park Accidents and Injuries

Schussman, Lee, McKay-Dee Hospital; Schussman, Brenda; Gochmour, Gregory; Taylor, Matthew

Context: The epidemiology of skiing and snowboarding accidents is well established. However, there is very little known about the epidemiology of skiing and snowboarding accidents in the increasingly popular winter terrain parks. **Objective:** The activities in winter terrain parks present obvious inherent risks. The aim of this study was to quantify terrain park accidents and to study the risk factors for those accidents. **Design:** This is a descriptive epidemiology study of the accidents and injuries in two typical winter terrain parks. **Setting and Instrument:** Using sample counts of the users of two terrain parks located at a major winter resort in Utah, the total numbers of runs taken through each of the terrain parks were calculated. Data on every accident that occurred in each of the terrain parks was then abstracted and analyzed to study the distributions and determinants of the accidents and injuries. **Results:** The accident incidence for the small-feature terrain park was 1.5 accidents per 10,000 runs taken. The accident incidence for the large-feature terrain park was 9.1 accidents per 10,000 runs taken. Jumping and aerial maneuvers done on the first run of the day accounted for a large majority of accidents. Wrist injuries predominated. **Conclusions:** Terrain park users could reduce their risks for accidents by using more caution on the first run of the day, by performing all jumping or aerial maneuvers within their skill levels, and by using helmets and wrist guards.

G4-Comparison of Primary Health Care Evaluation Instruments That Evaluate Accessibility From the Consumer Perspective

Haggerty, Jeannie, Université de Sherbrooke; Levesque, Jean-Frédéric; Santor, Darcy; Burge, Fred; Beaulieu, Christine; Bouharaoui, Fatima; Beaulieu, Marie-Dominique; Pineault, Raynald; Gass, Davis

Context: Various instruments have been validated to measure the achievements of attributes of primary healthcare, including accessibility, from the user perspective. **Objective:** To compare the psychometric performance of validated sub-scales of accessibility with each other and with a consensus definition of accessibility. **Design:** Back-to-back comparison of instruments in cross-sectional validation study with balanced design: equal subject distribution by French and English; high and low educational achievement; rural and urban setting; and poor, average and excellent overall experience of healthcare. **Participants:** 649 adults with at least one healthcare contact in last 12 months; all filled in all questionnaires. **Instrument:** Accessibility sub-scales from Primary Care Assessment Survey (PCAS), Primary Care Assessment Tool (PCAT, two sub-scales), Europep. **Outcome Measures:** Scores transformed to 0 to 10 scale for descriptive statistics. Exploratory (principal components) factor analysis to detect number of latent constructs in scale items; confirmatory (structural equation) analysis to test factor structure. **Results:** The PCAT First Contact Utilization sub-scale did not fit the accessibility construct; it correlates more strongly with other continuity-related constructs and its items do not load with items from other accessibility sub-scales. Items from the remaining three sub-scales load reasonably onto a single latent construct, presumably accessibility. The best-fitting model of the items was with two factors corresponding to “timeliness of obtaining needed care” and “how resources are organized to accommodate clients”. The PCAT First Contact Access taps into timeliness, the PCAS principally on accommodation, and the Europep both. However, items on the Europep load on both factors, suggesting a non-specific tool. **Conclusion:** Three of the examined sub-scales appear to measure accessibility. The choice of instrument will depend on the accessibility dimension of most interest. Measures of cultural and economic accessibility were absent from the instruments examined.

PRACTICE-BASED RESEARCH I (H1-H4)

CANYON SUITE III

H1-Family Physicians' and Patients' Experiences With Different Delivery Models: Qualitative Findings From the Comparison of Models of Primary Care Project

Geneau, Robert; Tosh, Casey; Bronsard, Annie; Russell, Grant; Hogg, William

Context: Primary care reform has led to the articulation and promotion of new organizational models for delivering primary care services. However there remains little evidence on whether new models have made significant improvements to the process or outcome of care. This study formed part of a mixed methods investigation of four models of primary care in Ontario, Canada. **Objective:** To understand the influence of organizational models on practitioners' work and patients' experience. **Design:** Qualitative design using multiple case studies. Semi-structured interviews were conducted with provincial policy makers, primary care practitioners and patients. Interviews were transcribed and analyzed using the search facilities of the N6 software. We followed a constant comparative approach to refine our initial logic model. **Setting and Participants:** Fee-for-service family practices (FFS), Health Service Organizations (HSO), Family Health Networks (FHN) and Community Health Centers (CHC). Practice organizations representing the models were chosen using a typical case sampling strategy. 78 interviews were conducted with 8 policy makers, 40 family physicians (FPs), 32 patients and 6 CHC based nurse practitioners. **Findings:** The physicians valued clinical and managerial autonomy, team cohesiveness and clinical variety. Those receiving blended or salaried remuneration (CHC, HSO, FHN) felt more in control of their clinical time and more able to interact with peers. However, they experienced less managerial autonomy than their FFS colleagues. While CHCs were uniquely positioned to serve marginalized populations, the resulting homogenous casemix compromised work satisfaction. Patients valued relational continuity and spoke of a desire not to feel "rushed" during a consultation. Those attending FFS settings experienced both dimensions in equal measure. **Conclusion:** Each of the models offers a distinct set of benefits and drawbacks that attract FPs and patients with specific profiles. Our findings suggest that a number of organizational models are required to account for variations in socio-demographic context and patient and provider needs.

H2-Does Delivery Model Influence Clinical Quality?: Interim Findings From the Comparison of Models of Primary Care in Ontario Study

Russell, Grant, University of Ottawa, Dahrouge, Simone; Kristjansson, Betsy; Hogg, William

Context: Western countries have begun to experiment with different approaches to organizing primary care delivery. This paper presents interim findings from a study comparing

four predominant primary care payment models (Fee-for-service family practices (FFS), Health Service Organizations (HSO), Family Health Networks (FHN) and Community Health Centers (CHC)) in Ontario Canada. **Objective:** Does primary care organisational delivery model influence the quality of a) preventive care or b) chronic disease management (CDM)? **Design:** Cross-sectional mixed-method study.

Practices randomly selected from pre-existing databases, then approached by mail and telephone – consenting practices completed practice and provider surveys, a patient waiting room survey and a random audit of adult patient's charts.

Setting: Primary care practices in Ontario between 2005 and 2006. **Participants:** 77 practices (16 FFS, 16 HSO, 24 FHN, 21 CHC); 2102 patients and 2306 chart audits. **Instruments:**

Preventive and CDM outcome variables assessed from previously validated chart audit instruments. Confounding variables assessed from patient, practice and provider surveys (each based on Primary Care Assessment Tool). **Outcome Measures:**

Adjusted preventive scores calculated from proportions of eligible patients in each model receiving 6 recommended preventive manoeuvres (influenza vaccination; cervical, breast and colorectal cancer screening; and hearing and eye examinations in those aged over 65). Similar calculations performed for 3 separate chronic conditions (coronary artery disease, diabetes and congestive heart failure). Performance at a model level was compared using ANOVA. **Results:**

The interim analysis revealed that no model demonstrated consistently worse or better performance than any other on individual preventive or CDM dimensions. The relative differences between the best and worst performing model was 28% for prevention and 23% for CDM ($P < 0.001$).

Conclusions: These interim findings suggest that the path to primary care quality may require more than simple redesign of delivery model. Future analysis will examine organisational and contextual influences on the outcomes.

H3-A Theory-based Evaluation Framework for Primary Care: Setting the Stage to Evaluate the Comparison of Models of Primary Care Project

Rowan, Margo, University of Ottawa; Hogg, William; Labrecque, Lise; Kristjansson, Betsy; Dahrouge, Simone

Context: Primary care reform has triggered a flood of demonstration projects across Canada. Governments are focused on "testing" new models of delivery, which has led to a critical need to appropriately apply evaluation techniques to health care settings. Yet how can clinical investigators be convinced to think beyond traditional research designs toward using evaluation approaches? The authors discuss the benefits of using theory based evaluation frameworks to guide evaluations in the Comparison of Models of Primary Care Project (COMP-PC). **Objective:** To describe the application and benefits of a theory based evaluation framework in planning a large-scale evaluation of four distinct primary health care (PHC) delivery models in Ontario. **Design:** A theoretical approach developed to assist a large-scale primary care evaluation. **Setting:** Primary care community based

practices in Ontario, Canada. Participants: Up to 40 randomly selected practices in 4 PHC settings in Ontario (Family Health Networks, Community Health Centers, Health Service Organizations, Fee-for-Service). Surveys with up to 8000 patients. In-depth interviews with physicians, nurse practitioners, nurses, patients, and key informants. Intervention/Instruments: Three interdependent processes of theory development: a conceptual framework, logic models, and measurement mapping. Outcome Measures: None. Results: The theory based approach helped focus the COMP-PC project towards both process and outcome factors that affect primary care delivery. Each level of theory development complemented the next and set the stage for questionnaire development, indicator mapping, and fieldwork of data collection, analysis and reporting. Conclusions: The development of a theory based evaluation framework to guide evaluations of primary health care has several benefits: it is a starting point in a large scale evaluation effort; it is a means of reducing bias by providing a comprehensive basis for indicator development; and it acts as a vehicle to examine important outcome and process-oriented factors affecting primary health care delivery.

H4-Opportunities for Improved Diabetes Care Among Safety Net Patients

Reichsman, Ann; Werner, James; Stange, Kurt; Werner, James, Case Western Reserve University
Context: Low-income patients with type 2 diabetes are often obtain care from safety net providers who seek ways to more effectively support patients in disease self-management. Objective: To identify the barriers and opportunities for quality diabetes care in the patients served by safety net practices. Design: Cross-sectional survey design. Setting: Three federally-qualified health centers and 1 free clinic. Participants: Nineteen primary care clinicians completed surveys about consecutive visits by 181 adult patients with type 2 diabetes. Instrument: Survey items included patient and visit characteristics, quality of care, and open-ended questions about patient and clinician perceptions of barriers to diabetes care and patient report of enabling factors. A multidisciplinary team coded the open-ended responses to identify themes. Logistic regression analyses assessed the association of the identified barriers/enablers with two measures of quality care: glycosylated hemoglobin and prophylactic aspirin use. Results: Patients reported their own adherence as the major barrier to diabetes care (40%); financial/insurance (23%) and psychosocial (13%) factors were also cited. Clinicians highly ranked financial/insurance (32%), cultural/psychosocial (29%) factors, and adherence (29%) as determinants of quality diabetes care. Patients reported dietary and medical adherence (37%) and family or health care worker support (17%) to be helpful. Glycosylated hemoglobin levels were associated with patient report of financial/insurance factors both as a barrier when visits and medications were unaffordable, and as an opportunity when

free or low cost medications were provided and costs of care reduced. Patients' adherence with aspirin prophylaxis was strongly associated with distribution of aspirin at the practice site (89% vs. 11%, $p < .001$) and with previous aspirin prescription (74% vs. 26%, $P < .001$). Conclusions: Patients were less likely than clinicians to identify systemic and contextual factors contributing to poor diabetes care. Enabling patient self-management and systemic support are likely targets for improving diabetes care in safety net practices.

VULNERABLE POPULATIONS I (I1-I4) CANYON SUITE IV

I1-The Influence of Patients' Socioeconomic Status on the Care Provided by Primary Care Physicians

Bernheim, Susannah, Yale University; Ross, Joseph; Bradley, Elizabeth

Context: Patients from low socioeconomic status (SES) backgrounds receive lower quality primary care. Improving disparities in care requires an understanding of the strategies used by primary care physicians when confronting barriers to quality care that result from patients' SES. Objective: To describe the experiences of physicians caring for low SES patients, their approaches to the challenge of providing quality care to low SES patients, and their responses to these situations. Design: Qualitative study, using open-ended interviews beginning with the question: "How do you think patients' socioeconomic status influences patient care?" Probes were used to elicit ways that clinical decisions were affected by patients' SES. Setting: Primary care practices in the state of Connecticut. Participants: 18 randomly selected primary care physicians caring for Medicaid patients, from a range of ethnic backgrounds, geographies and practice-settings. Outcome Measures: Themes generated by the constant comparative method from transcribed interviews. Results: Physicians described numerous challenges faced by patients of low SES that limit their ability to obtain appropriate health care. These barriers are largely economic limitations but also include barriers due to occupation, education and lifestyle. Physicians described a number of ways that they change their care in response to patients' SES. Often they change treatment options to make care more affordable, such as by providing generic medications. Other responses included changing care in response to patient life circumstances, such as changing treatment plans based on work schedules or changing communication with patients, such as by limiting the information provided within a visit. Some physicians felt that the changes they made resulted in equivalent care for patients, but others expressed concern that patient outcomes could be compromised by their changes in care based on SES. Physicians universally experienced a tension between maintaining a standard of care and tailoring care to respond to individual patient situations. This tension was manifest in numerous ways and leads to a variety of reactions by physicians. Conclusions: Primary care physicians

caring for low SES patients often adapt their care to respond to patients' SES but in doing so experience tension between individualizing care and maintaining a standard of care.

I2-Community-driven Research on Environmental Exposure and Autoimmune Disease

Terrell, Julien; Murekeyisoni, Christine; Watkins, Robert; Tumiel-Berhalter, Laurene, SUNY at Buffalo

Context: The community-based participatory research process is a mechanism to improve environmental quality in environmental justice communities. **Objective:** To describe the role of community members in identifying health problems and health hazards in a community, to describe the process of overcoming cultural barriers to community participatory research, and to identify non-traditional benefits to the community through engaging in the research process. **Design:** A descriptive process of developing a community-based participatory research program. **Setting:** Two predominately low-income, African-American zip codes in Buffalo New York considered an environmental justice community. **Participants:** A collaborative partnership between the University of Buffalo and the Toxic Waste Lupus Coalition. **Intervention/Instrument:** Participatory process to develop a research program. **Outcome Measures:** 1) the techniques used to develop a city-wide registry for Lupus and other autoimmune diseases, 2) community involvement in designing and administering a comprehensible questionnaire that would help uncover common factors that may clarify the complex causes of lupus, 3) course of action taken to clean up superfund sites that threaten the health of people living in affected communities, focusing on partnerships that were established with local environmental justice organizations. **Results:** Multi-media approach led to the development of an autoimmune disease registry that currently enrolls over 300 affected individuals. The partnership led to the development of an in-depth survey that 66 individuals participated in. The partnership reached out to the DEC to be active participants in the development of the plan to clean up a superfund site. **Conclusions:** The community-based participatory research process facilitated traditional and non-traditional outcomes related to on autoimmune disease and toxic exposure. These methods can be used to better engage the community in research and to activate the community in improving their environment.

I3-Action Research Using Participatory Methods With Women in Prison to Improve Health

Martin, Ruth Elwood, University of British Columbia; Spittal, Patricia; Fayant, Mary; Granger-Brown, Alison; Slater, Amanda; Tole, Brenda; Turnbull, Susan; Buxton, Jane; Ramsden, Vivian; Fels, Lynn; Grams, Garry

Objective: The purpose of this study was to invite women in prison to be involved in the development of a funding application; the funding would enable a five-year action research project using participatory methods to improve the

health of female inmates. **Design:** qualitative, exploratory, using thematic analysis **Setting:** Alouette Correctional Center for women in British Columbia. **Instrument:** Women in ACCW were invited to participate in interviews, an information forum and focus groups. Open-ended questions such as, 'What are your most important health concerns?' and 'How do you see action research working in ACCW?' were asked. All interviews and focus groups were audio-taped, transcribed and analyzed using a thematic framework analysis. **Results:** 17 women were interviewed, 100 women (of whom 33 were Aboriginal) attended the information forum and 40 women were involved in focus group discussions. Health concerns identified by women clustered into five themes: addictions; HIV, hepatitis and infections; health care in prison; life skills; family and relationships. The women articulated how action research could be implemented in prison. They also volunteered to support the research endeavour in other ways (such as, assisting with transcribing and writing letters of support), which may have secondarily enhanced their job skills. **Conclusions:** Women in prison enthusiastically participated in exploratory work to develop a funding proposal; they reported feeling valued and respected because of their participation. Their health concerns were consistent with the main determinants of health for vulnerable populations.

I4-Cancer Risk Assessment: Examining the Family Physician's Role

Tyler, Carl, Fairview Hospital; Snyder, Carl

Context: Primary care clinicians have uncertainty about who might benefit from referral to cancer genetics specialists for risk assessment. Recently, explicit criteria for identification of persons at moderate or high genetic risk for cancer have been developed. Those at high genetic risk should be referred to cancer genetic specialists. **Objective:** To ascertain whether individuals at increased genetic risk are recognized as such, and whether they are offered referral to cancer genetic specialists. **Design:** Retrospective chart audit. **Setting:** Single family medicine residency program. **Patients:** Charts of 721 patients enrolled in residency clinic, all ages, randomly selected **Outcomes:** Detail of cancer information categorized as comprehensive, adequate, or inadequate; cancer risk assessment categorized as average, moderate, high, or unknown due to insufficient information; percentage of persons at high risk referred for cancer genetics consultation. **Results:** The presence or absence of a family history of cancer was documented in 97.8% of records. The detail of family cancer information was comprehensive in 22 (8.1%) charts, adequate in 78 (28.1%), and inadequate in 171 (63.1%). Using explicit cancer risk assessment criteria applied to the 279 charts with a personal and/or family history of cancer, 75 (26.9%) were considered average risk, 3 (1.1%) were moderate risk, and 7 (2.5%) were high risk. There was insufficient information to assess risk in 194 (69.5%) of charts. Of the 10 patients at moderate or high risk for cancer, only 3 had been identified in their medical record "at

increased risk due to family cancer history.” None had been referred for cancer genetics consultation. Conclusions: Compared to previous studies, we documented greatly improved identification of patients with a positive family history of cancer through simple practice procedures. However, the majority of patient charts still lacked sufficient clinical detail to permit risk assignment. Even when adequate information had been collected, individuals at high genetic risk for cancer were not identified as such and none were offered cancer genetics referral. In addition to collecting adequate family cancer information, family physicians need to adopt explicit cancer risk assessment criteria and uniformly apply them.

Monday, October 16

Concurrent Paper Sessions

2:30 – 4 pm

EXTENDED PAPER PRESENTATIONS (J1-J3)

CORONADO I

J1-Racial and Ethnic Differences in Tumor Stage and Survival From Colorectal Cancer

Doubeni, Chyke, University of Massachusetts; Field, Terry; Buist, Diana; Korner, Eli; Bigelow, Carol; Lamerato, Lois; Herrington, Lisa; Quinn, Virginia; Gurwitz, Jerry; Hornbrook, Mark; Wagner, Edward

Context: Racial/ethnic disparities from colorectal cancer (CRC) especially between non-Hispanic blacks (“Blacks”) and non-Hispanic whites (“Whites”) have continued to widen since the early 1980s. Objectives: Examine racial/ethnic differences in CRC stage and survival in insured populations. Design: Retrospective cohort study. Setting: Integrated health systems affiliated with the Cancer Research Network. Patients: Patients diagnosed with CRC 1993-1998 identified from tumor registries and linked to information in administrative databases. The sample was restricted to Whites (n=10,585), Blacks (n=1,479), Hispanics (n=985) and Asians/Pacific Islanders (n=909). Outcomes: Tumor stage and survival from CRC. Differences in tumor stage and survival rates were analyzed using polytomous and Cox regression models, respectively. Results: Of the 13,958 patients studied over a third were diagnosed at local stage. In multivariable analyses, compared to Whites, Blacks were more likely to have distant or unstaged tumors at diagnosis, while Hispanics were more likely to have regional tumors. In Cox models that adjusted for age, gender, diagnosis year and study site, Blacks had a higher risk of death from CRC (hazard ratio (HR); 95% confidence interval (CI): 1.17; 1.06-1.30). Hispanics had a risk of death similar to Whites (HR; 95% CI: 1.05; 0.92-1.18), while Asians/Pacific Islanders had a lower risk of death from CRC (HR; 95% CI: 0.89; 0.78-1.02). After further adjusting for tumor stage and receipt of

surgical therapy, the HR decreased to 1.06 for Blacks but was essentially unchanged among Hispanics and Asians/Pacific Islanders. In analyses stratified on gender, Hispanic men had significantly lower survival from CRC compared to white men. Conclusions: The relationship between race/ethnicity and survival from CRC in insured populations is complex, and appears to be related to differences in the tumor stage and treatment. Targeted interventions to improve the use of effective screening and treatment among vulnerable populations may be needed to eliminate disparities in CRC.

J2-Hyperinsulinemia and Cognitive Decline in the Atherosclerosis Risk in Communities (ARIC) Cohort

Young, Sara, Medical University of South Carolina; Mainous, Arch; Carnemolla, Mark

Context: Determining modifiable risks factors for cognitive decline and dementia are a public health priority as we seek to prevent dementias. Type 2 diabetes mellitus (DM) and related disorders such as hyperinsulinemia increase with aging and are increasing in the US population. Few studies have evaluated the longitudinal association between hyperinsulinemia and dementia. Objective: To determine whether hyperinsulinemia is associated with cognitive decline among middle-aged adults without DM, dementia, or stroke in the Atherosclerosis Risk in Communities (ARIC) cohort. Design and Setting: An analysis of the ARIC cohort. Middle-aged adults (45-64 at baseline) had fasting insulin and fasting glucose assessed in 1987-89. Subjects with dementia, based on delayed word recall (DWR) cognitive test score less than 3 when assessed in 1990-92, were censored from analysis, as were persons with DM and stroke at baseline. Follow-up DWR scores were available 6 years later. Outcome Measures: Cross-sectional comparisons and multiple linear regression models were computed for dependent variables DWR at baseline and longitudinal change in DWR to determine if cognitive function was associated with two measures of insulin resistance, fasting insulin and HOMA. Linear regression models controlled for age, gender, race, marital status, education level, smoking status, alcohol use, depression score, history of hypertension, and history of hyperlipidemia. Results: In unadjusted analyses, both fasting insulin and HOMA at baseline were associated with significantly lower baseline DWR scores and DWR change scores. Multiple variable linear regression models adjusted for potential confounders showed lower baseline DWR scores for those with hyperinsulinemia (P=0.04) and greater decline in DWR over 6 years for those with hyperinsulinemia (P=0.02). Conclusions: Insulin resistance is a potentially modifiable mid-life risk factor for cognitive decline and dementia.

J3-Prevalence of Insulin Resistance in an Adolescent Population

Rodden, Ann, Medical University of South Carolina; Diaz, Vanessa; Koopman, Richelle; Mainous, Arch; Geesey, Mark
Context: Insulin resistance, a risk factor for multiple medical conditions, is becoming more prevalent in the adolescent

population. Overweight and risk for overweight adolescents have been identified as having an increased risk of insulin resistance. Identifying other risk factors for insulin resistance in adolescents will improve risk assessment in primary care practices. **Objective:** This study will identify other factors associated with risk of having insulin resistance. **Design:** Cross-sectional analysis of the National Health and Nutrition Examination Survey 1999-2002. **Setting:** United States population. **Participants:** Nationally representative sample of 1,837 non-diabetic, non-pregnant 12-19 year old. **Main Outcome Measurement:** Insulin resistance calculated as Homeostasis Model Assessment (HOMA) > 3.16. **Results:** Being Hispanic and having a BMI ? 75% are associated with increased insulin resistance. As the BMI percentile increases, the odds of insulin resistance increases (BMI 75-84.9% OR 4.661, 95% CI 2.355-9.225; BMI 85-94.9% OR 6.969, 95% CI 2.914-12.224; BMI ? 95% OR 21.712, 95% CI 14.092-33.452). Self-reported physical activity levels less than an hour a week of heavy activity also appeared to be associated with insulin resistance. **Conclusion:** Normal weight adolescent with a BMI 75-84.9%, which represents approximately 1.3 million US adolescents, have not previously been identified as having increased risk of insulin resistance. Being Hispanic and having low physical activity are other risk factors associated with insulin resistance. Earlier identification and intervention for those at risk of insulin resistance may improve health promotion. Further studies are needed to develop effective interventions for these at risk groups.

BEHAVIORAL/PSYCHOSOCIAL I (K1-K6) *CORONADO II*

K1-Prevalence and Age of Onset of Alcohol Dependence

Kruse, Robin, University of Missouri-Columbia; Vinson, Daniel

Context: Data from the 1992 National Longitudinal Alcohol Epidemiology Study (NLAES) demonstrated a lifetime prevalence of DSM-IV alcohol dependence of 13.3% in the population. Lifetime alcohol use was 66.0%. A graph of lifetime prevalence of alcohol dependence by age showed markedly steeper curves among younger cohorts, indicating much earlier onset for younger participants. **Objective:** To replicate and update these findings using another nationally representative dataset. **Design:** Cross-sectional analyses of data from the 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). **Participants:** 43,093 non-institutionalized Americans 18 years and older. **Instrument:** Structured, validated interview to determine alcohol use disorders and the age at which the respondent first met diagnostic criteria. **Outcome Measures:** Prevalence of lifetime alcohol use, prevalence of lifetime diagnosis of alcohol dependence, and age of onset of alcohol dependence by age cohort. **Results:** Comparing 2001-02 data with 1992 data, lifetime alcohol use increased to 82.7% (95% CI 81.5 – 83.9) while lifetime prevalence of alcohol dependence was

unchanged (13.3%, 95% CI 12.6 – 14.0). As in 1992, lifetime prevalence of alcohol dependence increased as the age of the cohort decreased, and age of onset of alcohol dependence was lower for younger age cohorts. To address recall bias, the sample was restricted to participants who met alcohol dependence criteria that may be more memorable (withdrawal syndrome, persistent desire to control drinking, continued drinking despite alcohol-related problems). Results were essentially unchanged. **Conclusions:** Analysis of NESARC data confirms the finding from the NLAES that younger people are more likely to meet criteria for lifetime alcohol dependence than older people, and that they meet diagnostic criteria at earlier ages. Although recall bias could still account for this striking finding, the increasingly rapid rise in the prevalence of lifetime alcohol dependence across successively younger age cohorts highlights the need for prevention programs among adolescents.

K2-Simplifying Alcohol Assessment: Two Questions to Identify Alcohol Use Disorders

Vinson, Daniel, University of Missouri-Columbia; Kruse, Robin

Context: Previous work has validated a single question to screen for hazardous or harmful drinking, but identifying those patients who have an alcohol use disorder (abuse or dependence) is still time consuming. **Objective:** To develop and validate a simplified assessment instrument using DSM-4 criteria. **Design:** Three cross-sectional survey samples. **Setting and Participants:** The first (developmental) sample included patients (N= 2,496) presenting to emergency departments with an acute injury. The second sample, from the same study, was a population-based group (N= 1,851) recruited by random-digit dialing. The third sample was the 2001-02 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC, N= 43,093). **Instruments:** The first two samples used the Diagnostic Interview Schedule and focused only on past-year alcohol use disorder diagnoses. The NESARC used the Alcohol Use Disorders and Associated Disabilities Interview Schedule and examined lifetime alcohol use disorders. The interview instruments have been validated, use similar wording, and map to DSM-4 criteria. **Outcome Measures:** Sensitivity and specificity in identifying alcohol use disorders among alcohol users. **Results:** Two constructs with promising psychometric properties were identified in the developmental sample: drinking in situations in which it may be physically hazardous (eg, driving), and drinking more than intended. In the developmental sample, if either criterion was positive, sensitivity for an alcohol use disorder was 93% and specificity was 86%. In the second sample, sensitivity was 91% and specificity was 83%. Sensitivity and specificity in the NESARC sample were 94% and 90%, respectively. **Conclusions:** The consistent sensitivity and specificity of these two constructs across 3 samples suggest that they could be formulated into two brief, easily remembered questions, potentially providing primary care clinicians with an efficient and effective tool to identify alcohol use disorders among

those patients who screen positive with the single screening question.

K3-The Effects of Mindfulness Based Stress Reduction on Sleep: A Systematic Review

Winbush, Nicole, University of Minnesota; Gross, Cynthia; Kreitzer, Mary Jo

Context: Sleep disturbance is common and associated with compromised health status. Cognitive processes characterized by stress and worry can be a root cause or contributor in patients' sleep complaints. Prescription sleep medications are widely used, but often expensive, provide only temporary relief and do not address the psychological contributors to sleep disturbance. **Objective:** To systematically evaluate the evidence that Mindfulness Based Stress Reduction (MBSR) -- a formalized psychoeducational intervention that helps individuals self-manage and reframe worrisome and intrusive thoughts -- can improve sleep. **Data Sources:** Medline (from 1966), AMED (from 1985), CINAHL (from 1982), PSYCINFO (from 1985), Digital dissertations and Cochrane Central Register of Controlled Trials Study Selection: English Language clinical trials of MBSR that reported pre- and post-intervention measures of sleep quality or duration were included. Studies employing multiple treatment interventions simultaneously were excluded. Data extraction: Twenty-eight studies were identified for review, and reviewed independently by the first and second author. Five studies met the inclusion criteria. Data Synthesis: Lack of standardized outcome measures precluded pooling of results for quantitative data analysis. All studies were conducted in populations with significant medical comorbidities. Sleep report measures varied, with some studies using standardized scales and others relying on diaries. Four studies (all uncontrolled) found MBSR significantly improved measures of sleep quality or duration. One controlled study found no significant difference between treatment and controls although increased home-practice of MBSR in the treatment group was associated with awakening 'feeling refreshed'. **Conclusions:** results of uncontrolled studies suggest MBSR may have positive effects on sleep quality and duration in patients with chronic medical problems. A single controlled study yielded conflicting results. Given its potential benefit and lack of risk, care providers should consider suggesting MBSR as one treatment for chronically ill patients with sleep disturbance. Further research is needed to fully characterize its effects.

K4-Exploring and Validating Patient Concerns: Relation to Appropriateness of Prescribing in Depression

Epstein, Ronald, University of Rochester Medical Center; Shields, Cleveland; Franks, Peter; Meldrum, Sean; Feldman, Mitchell; Kravitz, Richard

Context: Patient requests for medications alter physicians' prescribing patterns; poorly understood communication factors may play a role. Prescribing for depression is suboptimal in primary care. **Objective:** To examine moderating effects of physician communication behaviors on relationships between patient requests for antidepressants and subsequent prescribing. **Design:** Secondary analysis of factorial-design randomized trial. **Setting:** Primary care physician offices in 3 cities. **Participants:** 152 family physicians and general internists practicing at least half-time recruited in random order from 4 physician collectives in Sacramento, San Francisco and Rochester (NY). Intervention/Instrument: Two unannounced standardized patient (SPs) portraying major depression and adjustment disorder visited each physician; SPs randomized to make brand-name, general or no requests. Covert visit audio-recordings coded for physician exploration/validation of patient concerns (EVC) using a scale adapted from Brown et al's Measure of Patient Centered Communication. **Outcome Measures:** Effects of communication on prescribing (main outcome) were evaluated using logistic regression accounting for clustering; site, physician, and visit characteristics; and stratified by request type and SP role. **Results:** In the absence of requests, high-EVC visits had higher rates of prescribing of antidepressants for major depression. In low-EVC visits, prescribing was driven by patient requests (adjusted odds ratio (AOR) = 43.54; 95% confidence interval (CI) = 1.69- 1120.87; $p < .005$), not clinical indications (AOR=1.82; 95% CI = 0.33-9.89; $P=NS$). In contrast, in high-EVC visits, prescribing was driven equally by clinical indications (AOR = 4.7; 95% CI=2.18-10.16; $P=.005$) and requests (AOR=4.02; 95% CI=1.67-9.68; $P=.005$). Depression history-taking did not mediate these results. **Conclusions:** Quality of care for depression is improved when patients participate more actively in encounters and when physicians explore and validate patient concerns. Communication interventions to improve quality of care should target both physician and patient communication behaviors. Cognitive mechanisms that link patient requests and EVC to quality of care warrant further study.

K5-Factors Associated With Adolescent Mothers' Condom Use Over Time

Johnston, Belinda, University of Maryland; Barnet, Beth; Liu, Jiexen

Context: Adolescent mothers experience high risk of repeat pregnancy and sexually transmitted infections (STI). Understanding factors associated with consistent condom use over time may reduce these risks. **Objectives:** 1. To categorize participants' use of condoms over time using Stage of Change. 2. To identify factors associated with forward movement in condom use. **Design:** Secondary analysis of data from RCT

evaluating use of computer assisted motivational interviewing (CAMI). Teens input responses to computer-based questions regarding sexual behaviors and condom use, followed by motivational interviewing. CAMI sessions conducted at 3 month intervals, beginning after delivery. Data come from two sources: 1) structured interviews during pregnancy; 2) CAMI responses at Time 1 (shortly after delivery) and Time 2 (9 months later).

Participants/Setting: Intervention adolescent mothers, aged 12-18 years, recruited from urban prenatal sites, completing > 2 CAMI sessions. **Outcome Measures:** Proportion of participants using condoms consistently (Users vs. Non-Users) at Time 1, Time 2, & those with movement from Time 1 to Time 2 (New Users). **Results:** Complete data available for 61 mothers. Mean age 16.9 years, 97% African-American, 84% Medicaid, 44% school dropouts, 33% prior STI. At Time 1, 79% were in a relationship with baby's father, 3% reported a new boyfriend (not baby's father), and 21% were Condom Users. At Time 2, 56% remained with baby's father, 31% reported a new boyfriend, 26 (43%) were Condom Users, with 15 (25%) New Users. Compared to condom Non-Users, New Users were younger, more likely to have a new boyfriend, more likely to report that condom use was "extremely important", and more likely to be "extremely sure" about using condoms with her partner. **Conclusions:** Condom use over time improved, but overall use remained low in this high risk group. Interventions to increase condom use should emphasize the importance of use and promote self-efficacy within the context of partner relationships.

K6-The Role of Leadership in Primary Health Care Teams

Brown, Judith Belle; Freeman, Thomas; Stewart, Moira; Ellis, Kathy; Bickford, Julia; Kasperski, Jan; Lewis, Laura, University of Western Ontario

Context: As Primary Health Care Teams (PHCTs) evolve towards interprofessional practice the role of leadership on the team comes under question. **Objectives:** This paper examines the perspectives of various team members regarding the role and impact of leadership on PHCTs. **Design:** A phenomenological qualitative study using individual indepth interviews and an iterative analysis process to examine verbatim transcripts. **Setting:** PHCT in Ontario, Canada. **Participants:** A maximum variation sample of 121 participants from 16 PHCTs (10 urban and 6 rural sites). **Participants** included over a dozen professions (ie family physicians, nurses, social workers, pharmacists). **Outcome Measures:** Participants' experiences and perceptions about the role of leadership in PHCTs. **Results:** Participants strongly endorsed the importance of leadership in supporting and guiding the organization and function of PHCTs. Two main themes emerged from the analysis of the data. First was the role of leadership in relation to business practices and processes ie regularly scheduled meetings, annual performance reviews, well delineated business

strategies. The second theme was the influence of leadership styles on team members. The analysis revealed a continuum of leadership styles. At one end of the continuum were teams without a defined leader. These teams felt abandoned. At the other end of the continuum were leaders who were experienced by teams as approachable and accessible. These teams felt listened to and valued. In between these end points were autocratic leaders whose teams experienced firm but inflexible direction; abusive leaders whose teams felt injured and devalued and finally unavailable leaders whose teams experienced them as inaccessible. Hence leadership style influenced the enactment of business practices and processes as well as the well-being of team members. **Conclusions:** Leadership remains a controversial issue as PHCTs evolve. The findings provide direction regarding the role of leadership on PHCTs and the impact of leadership styles on team functioning.

DIABETES I (L1-L6)

AGAVE II & III

L1-Quality of Care for Hispanic Adults With Diabetes

Koopman, Richelle, Medical University of South Carolina; Mainous, Arch; Diaz, Vanessa; Everett, Charles

Context: Hispanics in the United States are disproportionately affected by diabetes. Disparities in quality of diabetes care may exist for patients of Hispanic ethnicity. **Objective:** We examined the quality of care for Hispanic and Non-Hispanic White adults with diabetes to investigate potential disparities in health care. **Design:** Cross-sectional examination. **Setting:** United States national random-digit dialing survey, the Behavioral Risk Factor Surveillance System, including data from 42 states, Puerto Rico, the Virgin Islands and Guam. **Participants:** 18,510 Non-Hispanic Whites and 2,078 Hispanic adults who reported having been previously diagnosed with diabetes. **Outcome Measures:** Established measures of quality care for diabetes, including measurement of HbA1c, foot check by health professional, receipt of dilated eye exam, receipt of flu and pneumococcal immunization, receipt of diabetes education class, and self-monitoring of feet and blood glucose. Hispanic and Non-Hispanic White adults with diabetes were compared by χ^2 test. Analysis was then adjusted for health care access and socio-demographic factors. Finally, models predicting lack of receipt of HbA1c testing and self-monitoring of blood glucose were analyzed among Hispanics with diabetes. **Results:** Hispanics were less likely than Non-Hispanic Whites to receive appropriate diabetes quality of care and to self-monitor their disease. Ethnic disparities for receipt of HbA1c tests and foot exams persisted even after controlling for access to care and demographics. In Hispanic only analyses, predictors of not receiving a HbA1c test and lack of self-monitoring of glucose included lack of a usual provider, and Spanish language during the interview. **Conclusions:** Disparities in quality of care for diabetes exist between Hispanics and Non-Hispanic whites. Multifaceted strategies

that incorporate culturally appropriate care and continuity of patient care may help to eliminate these disparities.

L2-Globalization and World Burden of Diabetes, 2000-2030

Chetty, V.K., Boston Medical Center; Narayan, Kabayam Venkat

Context: Globalization of production and consumption has coincided with growing incomes, diabetogenic lifestyles, and decreasing overall mortality rates across most countries. Based on expected changes in population size and urbanization, 366 million people worldwide are projected to have diabetes in 2030. Objective: To project the global burden of diabetes in 2030, accounting also for changes in Gross Domestic Product (GDP) and associated effects on physical activity, diet and differential mortality rates.

Design: Regression models to estimate the relation between diabetes prevalence and GDP, value added in service industries, television sets per 1000 (TV), cars per 1000, per capita sugar consumption, and share of fat, meat, fruits and vegetables in food, and mortality rates using data for 191 countries for the year 2000. Project numbers of people with diabetes for 2030 under different scenarios. Results: GDP, sugar consumption, TV, share of fat, fruits, and vegetables and share of services were each positively associated with prevalence, while mortality rate and share of meat were negatively associated. The model explained 61% of the variation, and Mallow's Cp statistics of 0.008 indicated a close to perfect fit. Based on expected changes in world population size alone, we project 263 million people with diabetes in 2030. GDP growth, associated life style changes and differential mortality rates increase the projection to 599 million. Relative contributions of income and lifestyle changes vary significantly between countries. Ten countries with the highest numbers of people with diabetes in 2030 are China, India, US, Brazil, Japan, Russian Federation, Pakistan, Italy, Philippines and Germany. Conclusions: Current projections, without accounting for GDP growth and associated changes, may dramatically underestimate the future global burden of diabetes. Our model based on readily available data will be useful to identify high risk groups for screening. Public policies are urgently needed to prevent diabetes growth.

L3-Coordination of Care, Quality of Diabetes Care, and Decision Support in Primary Care Clinics: A STARNet Study

Parchman, Michael, University of Texas HSC; Pugh, Jacqueline; Romero, Raquel; Calmbach, Walter

Context: Surprisingly little is known about the value of coordination of care for patients with diabetes. Starfield defined coordination as "the availability of information about prior problems and services and the recognition of that information as it bears on needs for current care."

Objective: To assess the relationships between coordination of care, quality of diabetes care, and the availability of

clinical information at the point of care. Design: Observational Setting: 20 primary care clinics in the South Texas Ambulatory Research Network (STARNet). Patients: 618 consecutive patients presenting with a diagnosis of type 2 diabetes. Outcome Measures: Delivery of 6 diabetes-specific services in the past year from chart abstraction were summed to produce a quality of care score (0 to 6). Coordination of care was measured by the Components of Primary Care Instrument (CPCI) survey. Decision support, or the availability of information at the point of care, was measured with the Assessing Chronic Illness Care (ACIC) survey completed by clinicians. Hierarchical (mixed) models were used to account for the clustering of patients within clinics. Results: After adjusting for patient characteristics and the number of clinic visits over the past 12 months, coordination of care was positively associated with the quality of care: as coordination increased so did quality of care. ($P=0.02$) After controlling for patient characteristics and number of visits in the past 12 months, ratings by the clinicians of their level of decision support was positively associated with the patient's rating of their coordination of care by their primary care physician. ($P=0.035$) Conclusions: As the clinician's assessment of their access to information necessary to care for patients increased, so did patient assessment of the coordination of their care by their primary care provider. Patients who reported higher levels of care coordination also had higher quality of diabetes care.

L4-Is the Structure of Primary Care Clinics Associated With Hemoglobin A1c?: A STARNet Study

Parchman, Michael, University of Texas HSC; Romero, Raquel; Calmbach, Walter; Pugh, Jacqueline

Context: Reducing hemoglobin A1c (A1c) to the currently recommended levels (≤ 7) in primary care settings can be challenging. The Chronic Care Model (CCM) suggests that the presence of 6 structural elements in the primary care clinic should result in better patient outcomes such as A1c control: organizational support, community linkages, self-management support, delivery system design, decision support and clinical information systems. Objective: To examine the relationship between presence of elements of the Chronic Care Model (CCM) and A1c control in primary care clinics. Design: Observational. Setting: 20 primary care clinics in the South Texas Ambulatory Research Network (STARNet) Patients: 618 consecutive patients presenting with a diagnosis of type 2 diabetes. Outcome Measures: Most recent values of A1c over the past 2 years from chart abstraction. Presence of elements of the CCM as measured by the Assessing Chronic Illness Care (ACIC) survey completed by clinicians in each clinic. Patient characteristics by survey. Results: Only 43.1% of patients' most recent A1c was 7.0 or less. 34 clinicians in 20 practices completed the ACIC survey. (mean (S.D.) 5.96 (1.81) range: 0 to 11) Because repeated measures of HbA1c are nested within patient, and patients are clustered within practice, a 3-level hierarchical model was constructed with the predictor, the mean ACIC score for the practice, entered at

level-3 of the model. Patient characteristics: age, sex, and race/ethnicity were entered at level-2 of the model. For every 1 point increase in the ACIC score, the slope of the repeated measure of HbA1c declined by 0.10. The association reached statistical significance ($P=0.03$). **Conclusions:** Structural characteristics of the primary care clinic measured as constructs from the CCM are associated with A1c control. Randomized trials with the primary care clinic as the unit of intervention are needed to see if implementation of the CCM result in improved intermediate clinical outcomes.

L5-Estimating Renal Dysfunction in Diabetes by Serum Creatinine Alone: Implications for Metformin Use

Cummings, Doyle, East Carolina University; Johnson, Cynda

Context: Metformin is contraindicated in patients with renal dysfunction as it poses an increased risk for lactic acidosis. While package literature and routine practice recommend serum creatinine to measure renal function, this measure has its limitations, particularly in the elderly. The extent to which using serum creatinine alone identifies those in whom metformin should be contraindicated is not well described. **Objective:** The objective was to compare the use of serum creatinine alone with calculated estimates of creatinine clearance (CrCl) and glomerular filtration rate (GFR) in identifying diabetic patients in whom metformin is contraindicated. **Design:** Case-series. **Setting:** Primary care practices at the medical school. Patients: $n=2066$ adult patients with a diagnosis of diabetes mellitus and with available laboratory data seen in the primary care practices (family medicine, internal medicine) at the medical school during a one year period in 2004. Methods: Renal function was estimated by the Cockcroft-Gault (CG) method and by the four-component Modification of Diet in Renal Disease (MDRD) method and compared to serum creatinine alone. **Outcome Measures:** Estimated CrCl and GFR; percentage of patients in whom metformin would be contraindicated using serum creatinine alone and the proportion actually receiving metformin. **Results:** CG and MDRD methods were highly correlated (Pearson = 0.88, $p < 0.001$). The MDRD method identified 453 patients (22%) with estimated GFR < 60 ml/min. in whom metformin is contraindicated. One-third of these ($n=152$) would not have been identified using serum creatinine alone. 166 of these 453 patients (37%) had received metformin during the period of study. **Conclusion:** Use of serum creatinine alone to estimate renal function in diabetic patients in whom metformin is being considered appears inadequate and may result in drug use in patients in whom it is contraindicated.

L6-Effectiveness of Interventions Used in Type-2 Diabetes

Firestone, Brian; Mold, James, University of Oklahoma

Context: Many evidence-based interventions are recommended for patients with type 2 diabetes. Effectiveness is usually expressed as relative risk reduction estimates, making clinical application difficult. **Objective:** Estimate absolute risks of adverse outcomes and reductions in risk associated with selected interventions in a set of simulated diabetic patients. **Design:** Risk and risk reduction estimates were obtained from a well-validated risk engine, Diabetes PHD. **Setting:** N/A. Patients/Participants: Base-case: overweight 65 year-old Caucasian man, infrequent exerciser, non-smoker, with a 5-year history of type 2 diabetes, a systolic blood pressure of 140, an LDL of 120, and an A1c of 10%. Features of the base-case (gender, race, age, smoking status, and amount of exercise) were varied to create a set of related cases. **Intervention/Instrument:** As above. **Outcome Measures:** 10-year risk estimates for MI, CVA, ESRD, blindness, amputation, and foot ulceration, and reductions in risk with reduction of BMI, A1c, blood pressure, and LDL cholesterol, use of low-dose aspirin, ACE inhibitor, beta blocker, smoking cessation, and increased exercise. **Results:** Risks of MI (AR 27%) and CVA (AR 14%) far exceeded risks of blindness (AR 0.7%), ESRD (0%), or amputation (AR 0.15%). Reduction of A1c to 7% reduced MI and CVA risk but not as much as other interventions. Reduction of LDL to 100 was not very effective; reduction to 70 reduced MI but not CVA risk. BP reduction from 140 to 120 reduced risk of MI (ARR 5 - 10%) and CVA (ARR 2 - 5%). Aspirin reduced both MI and CVA risk (ARR 5 - 11%). Smoking cessation also reduced risk of MI (ARR 14%) and CVA (ARR 6.8%). Exercise reduced MI risk by 8% and CVA risk by 3%. **Conclusions:** The most effective ways to reduce morbidity in late middle-aged type-2 diabetics are smoking cessation, exercise, aspirin, and BP reduction.

PRACTICE-BASED RESEARCH II (M1-M6)

JOSHUA TREE I

M1-A Double Blind Randomized Placebo Controlled Trial of Amoxicillin and Topical Budesonide in the Treatment of Acute Sinusitis

Williamson, Ian, University of Southampton; Bengt, Sarah; Rumsby, Kate; Moore, Mike; Smith, Peter; Cross, Martine; Little, Paul

Context: Acute sinusitis is a common clinical problem which usually results in a prescription for antibiotics. Current limited evidence suggests benefit may be marginal in primary care. Anti-inflammatory drugs such as steroids may be beneficial, and are also under researched. **Objectives:** To determine the effectiveness of amoxicillin, and budesonide, in acute maxillary sinusitis. **Design:** A double blind randomized placebo controlled factorial trial. Patients were randomized using randomization tables to one of four treatment groups: (1. Factor A active+ Factor B active/ 2. Factor A active +Factor B placebo/ 3. Factor A placebo+ Factor B active/ 4.

Factor A placebo+ Factor B placebo.) **Setting:** Between the years 2001-5, 124 General practices and 229 GPs from Southern England participated. Patients: 241 adults (16 years or over) with acute non-recurrent sinusitis were recruited using Berg and Carenfelt's clinical diagnostic criteria (2 or more giving an overall reliability 86%). **Intervention:** Factor A, Amoxicillin 500mg three times a day for 7 days. Factor B, Budesonide 200microgram each nostril once a day for 10 days. **Outcomes:** The main outcome was the proportion clinically cured at day 10 using patient symptom diaries with 7 point Likert scales for individual patient symptoms. An intention to treat analysis for a factorial trial was performed. The secondary outcomes included survival curves, factor analysis (PCA), and Total Symptom Severity Scores up to day 14. **Results:** Proportions cured at day 10, the adjusted OR for amoxicillin was 0.993 (0.57 to 1.73), and for Budesonide OR 0.933 (0.54 to 1.62). Tests for interaction between intervention groups were not significant. Secondary outcomes: a test for interaction between baseline severity and outcome was found for nasal steroids ($P=0.003$). **Conclusions:** Amoxicillin and Budesonide do not appear to be effective as treatments for acute non-recurrent sinusitis in primary care. Nasal steroids may however be effective in milder cases of sinusitis.

M2-Prompting Patient Communication in Primary Care Visits: A Report From the AAFP National Research Network

Pace, Wilson; Bonham, Aaron; Brown, Judith; Dickinson, Miriam; Galliher, James. American Academy of Family Physicians; Hickner, John; Manning, Brian; Post, Douglas; Weiss, Barry; Ryan, Bridget

Context: Patient-centered care and enhanced communication between patients and primary care clinicians are associated with positive patient outcomes. Relatively simple interventions to improve patient question asking have been proposed. Pilot work has indicated that the Ask-Me-3 program, may positively impact communication and intermediate clinical outcomes. **Objectives:** To assess the effect of 1) a health communication intervention on patient question asking, prescription filling, and attempts at physician-recommended behavior changes; and 2) patient question asking, in general, on these same outcomes.

Design: RCT with study physicians assigned to two groups: 1) Ask-Me-3 program and 2) standard care. **Setting:** Twenty primary care practices from the AAFP National Research Network in 2004-2005. **Participants:** Forty-one physicians and 829 of their randomly selected patients. **Instruments:** Physician and patient post-visit questionnaires, audio recordings of patient visits, and follow-up telephone interviews with eligible patients. **Outcome Measures:** Patients' 1) question asking of Ask Me 3 questions, 2) patient question asking in general, 3) prescription filling, and 4) attempts at physician-recommended behavior changes. **Results:** Of 1108 patients invited to participate, 75% consented; 87% of eligible patients completing follow-

up telephone interviews. Contrary to study hypotheses and the theoretical rationale underlying the Ask-Me-3 program, intervention patients: 1) did not ask more prompted questions or more questions overall ($P>.05$), 2) were not more likely to fill ordered prescriptions ($P>.60$), and they were less likely to report attempting physician recommended lifestyle changes ($P=.011$). Moreover, patient question asking (Ask-Me-3 questions or otherwise) did not have an effect on either prescription filling or attempts at lifestyle changes.

Conclusions: This study does not provide support for the Ask-Me-3 program intervention focusing on patient advocacy and the prompting of question asking. Moreover, question asking itself did not affect patients' prescription ordering or their attempts at physician recommended lifestyle changes.

M3-Spirometry Modifies Family Physicians' Management of Asthma and COPD

Pace, Wilson. AAFP NRN / UCHSC at Fitzsimons; Yawn, Barbara; Enright, Paul; Lemanske, Jr., Robert; Israel, Elliot; Wollan, Peter; Boushey, Homer

Objective: To assess the technical adequacy, accuracy of interpretation and impact of office spirometry testing in the care of patients with asthma or COPD. **Setting:** Twelve family medicine practices without prior experience with in-office spirometry testing. 30 to 40 consecutive patients per office with asthma or COPD. **Design/Participants:** Each practice was provided with a spirometer (Easy One, ndd, Zurich, Switzerland), and one physician and one nurse attended a 2-day training session on testing techniques and interpretation of results. Spirometry was offered to patients with asthma or COPD during an office visit. **Outcomes:** The spirometry test results were interpreted by the family physician and used in clinical care. The results and interpretation were reviewed by a pulmonologist or allergist for technical adequacy and their concordance with interpretation. The impact of the spirometry on patient care was assessed using questionnaires completed by the family physician before and after review of the spirometry results. **Results:** 380 tests were completed over 6 months. 261 spirometry tests (71%) were rated as having technically good quality, with an additional 16 (4%) considered normal despite technical problems (73% clinically useable). Experts concurred with the family physician's interpretation in 281 cases (74%). Changes in care were prompted by spirometry in 182 patients (48%). These included medication changes in 107 patients (59% of changes). Other changes included increased follow-up frequency, referrals for further evaluation, repeat pulmonary function testing, or medical support of smoking cessation. Over 90% of the medication changes were consistent with published guidelines for management of asthma or COPD. Management changes were reported in 3% of patients with technically poor quality tests or incorrect interpretation. These changes primarily resulted in over-treatment of mild disease. **Conclusions:** When used in primary care office practice, spirometry modified the management of almost half (48%) of patients with asthma and COPD.

M4-Investigating the Representativeness of Practice-based Research Networks: The Case of the AAFP National Research Network

Bonham, Aaron; Dickinson, Miriam; Galliher, James, American Academy of Family Physicians; Pace, Wilson
Context: Practice-based research networks (PBRNs) are considered the most appropriate model for conducting research at the point of care in primary care settings. Nonetheless, little is known about the generalizability of PBRN study Results to the larger population of primary care clinicians. Objectives: To assess the extent to which the AAFP National Research Network (NRN) physicians concur with AAFP non-network physicians in their self-reported practice patterns and beliefs in specific clinical areas. Design: Three cross-sectional national surveys during 2003 and 2004. Setting/Participants: Random samples of AAFP active members (N=1000 to 1200) and all AAFP NRN physician members (242 to 263). Instruments: Three survey instruments addressing questions related to self-reported practice patterns and clinical beliefs concerning: 1) hepatitis C virus, 2) hyperlipidemia, and 3) childhood pharyngitis. Items were selected from these surveys for analysis based on their perceived clinical importance. Outcome Measures: Outcomes include: 1) concordance between AAFP sampled physicians and NRN member physicians in their self-reported practice patterns and clinical beliefs, and 2) differences in groups' demographic factors. Results: Fifteen (26%) comparisons resulted in statistical differences ($P<.10$) between the AAFP NRN respondents and AAFP respondents. Most differences were observed for the pharyngitis survey (10, 67%). There was no obvious pattern of differences. AAFP vs. AAFP NRN comparisons on demographic items showed no consistent statistical differences ($P<.10$) with the exception of practice type and time spent in patient care. NRN physicians were more likely to be academics, and AAFP members spent considerably more time in patient care. Conclusions: There is evidence of much similarity in the two groups' self-reported practice patterns and clinical beliefs in specific clinical areas with less similarity in others. Moreover, with the exception of practice type and time spent in patient care, there are no consistent statistical differences observed across physicians' demographic characteristics. The results provide qualified support for the representativeness of AAFP NRN members compared to the AAFP population.

M5-Specialists are Twice as Likely to Prescribe Generic Medications for Hypertension Treatment Than Family Physicians in Quebec

Bartlett, Gillian, McGill University; Tamblyn, Robyn; Dawes, Martin
Context: Hypertension is the number one reason for physician visits in Canada. Ideally, the least expensive drug is selected among drugs that have equivalent clinical benefits for the treatment of hypertension as higher out-of-pocket expenditures for patients can negatively impact

medication compliance. It is not clear whether general practitioners (GPs) are more aware of this issue and prescribe less costly medications. Objectives: To determine if GPs are more likely than specialists to prescribe generic anti-hypertensive medications for the initial treatment of hypertension. Design: Historical cohort comparison study with data collected from provincial health administrative databases as part of the Two Province Study of Primary Care Physicians. Setting: Patients in Quebec, Canada, with at least one GP visit from 1998 to 2003. Participants: All individuals >18 years were screened for eligibility. Inclusion criteria included having public drug insurance, a diagnosis of hypertension, and a new prescription for anti-hypertensive medication in 2001 was a first-line treatment as determined by clinical guideline recommendations (n=20 588). Outcome Measures: The type of anti-hypertensive medication dispensed for the first prescription in 2001 and the specialty of the prescribing physician were assessed from the prescription claims files. Results: Using multivariate logistic regression, cardiologists (OR 2.09; 95% CI 1.83-2.40), internal medicine (OR 1.47; 95% CI 1.24-1.76) and other specialists (OR 1.17; 95% CI 1.01-1.36) were significantly more likely than GPs to prescribe generic medication. Female (OR 1.5; 95% CI 1.44-1.62) and elderly patients (OR 1.45; 95% CI 1.32-1.60) were more likely to receive generic medications. Patients with complicated hypertension were significantly less likely to receive a generic medication (OR 0.60; 95% CI 0.56-0.65). Conclusions: Different rates of generic prescribing exist between physician specialties, patient groups, and complexity of hypertension. We now need to explore the reasons for these differences and their clinical implications.

M6-Accelerating the Translation of Research into Practice (A-TRIP) Demonstration Project to Increase Practice Adherence to Clinical Practice Guidelines: Preliminary Results

Nietert, Paul, Medical University of South Carolina; Ornstein, Steven; Jenkins, Ruth; Wessell, Andrea; Nemeth, Lynne; Feifer, Chris; Roylance, Loraine; Liszka, Heather
Context: Practice-Partner Research Network (PPRNet), a primary care practice-based research network across the United States whose members use a common electronic medical record, is conducting a multi-method demonstration project. Objective: Increase practice adherence to clinical practice guidelines for 7 clinical domains (diabetes, heart disease, cancer, immunizations, respiratory/infectious disease, mental health/substance abuse, and inappropriate prescribing for elderly patients). Design: Multi-year demonstration project. Setting/Participants: 89 primary care practices in 37 states, representing almost 490,000 patients. Analyses included practices that were active at the beginning (7/03) and/or the end (1/06) of the study period. Intervention: Quarterly practice-level and patient-level quality reports, accompanied by optional site visits with academic detailing and optional network meetings. Outcome Measures: The Summary Quality Index (SQUID®), a composite measure of

36 processes and outcomes across 7 clinical domains. Composite measures for each clinical domain were also examined. These indices are expressed as percentages ranging from 0% to 100%. Mixed linear regression models, which accounted for the clustering of patients within practices, were used to determine whether the changes over time were statistically significant. **Results:** From 7/03 through 1/06, the mean SQUID increased from 30.2% to 38.9% ($p < 0.001$). Significant ($p < 0.0001$) improvement also occurred in the clinical domain indices: diabetes (from 44.5% to 54.1%), heart disease (from 57.4% to 66.8%), cancer (from 28.2% to 34.4%), immunization (from 11.6% to 24.4%), respiratory/infectious disease (from 27.2% to 32.6%), and mental health/substance abuse (from 7.5% to 13.2%). Among elderly patients, use of medications that are always inappropriate declined from 2.4% to 2.3% ($p < 0.01$), while use of medications that are rarely appropriate declined from 8.8% to 8.2% ($p < 0.0001$). **Conclusions:** During this project, substantial improvements were made in the quality of care provided within participating practices. Improvements occurred over a broad range of clinical indicators.

MEDICAL INFORMATICS I (N1-N6) JOSHUA TREE II

N1-Do Physicians Change How They Use the Computer in Those Consultations With a Significant Psychological Component?

McGlade, Kieran, Queen's University, Belfast; Chan, Wai Sun; Stevenson, Michael

Context: Computers are becoming an indispensable “third party” to the doctor- patient consultation. Almost all Family Physicians in the UK have them, and approximately 15% are running ‘paperless’ consultations. Computers have been shown to assist doctors’ clinical performance. Other studies, however, have demonstrated that computers can reduce direct doctor - patient interaction. It is important therefore to determine whether physicians are able to avoid the potential adverse effect of using the computer too much in consultations requiring more doctor- patient interaction.

Objectives: To determine whether the pattern of computer use alters in consultations which have significant psychological content. **Design:** Observational, non-randomized cluster trial with data being collected from videotaped consultations. **Setting:** Three inner-city Family Practices in Northern Ireland. **Participants:** Ten Family Physicians, who declared using computers during their consultations and consecutive consenting adult patients attending these physicians. **Method:** Consultations recorded using fixed, unobtrusive, remotely operated video equipment. Proportion of time spent in various consultation activities counted with the aid of a computerized time and event recorder (CATER). Consultations independently assessed as “psychological” or “non-psychological”. SPSS

v13 used to analyze the data. A General Linear Model (GLM) employed allowing adjustment to be made for differences between physicians. **Results:** One hundred consultations were videotaped (59% patient participation rate). Average consultation time was 9 minutes 48 seconds. Those consultations with psychological content (37%) were on average longer - 11 minutes compared with 8 minutes. The average percentage time doctors spent on the computer was 11.9% (95% Confidence interval [CI] = 8.7 to 15.1) in the “psychological” consultations compared with 22.2% (95% CI = 19.8 to 24.7) in the “non-psychological” consultations ($p < 0.001$). **Conclusion:** Physicians significantly reduce the proportion of time at the computer in consultations with psychological content suggesting an ability to appropriately tailor their use of the computer during consultations.

N2-Identification of Clinically Important Elements Within Medical Journal Abstracts (Patient-population-problem, Exposure-intervention, Comparison, Outcome, Duration, and Results: PECODR)

Dawes, Martin, McGill University; Pluye, Pierre; Shea, Laura; Grad, Roland; Greenberg, Arlene; Nie, Jian-Yun

Context: Information retrieval is becoming more difficult as the volume of medical information held in electronic databases expands. The lexical structure of this information may permit automatic indexing and improved retrieval.

Objective: To identify and analyze the PECODR elements (Patient-population-problem, Exposure-intervention, Comparison, Outcome, Duration, & Results) from the abstracts of medical journals. **Design:** We used a convenience sample of 20 synopses from the journal Evidence-Based Medicine (EBM) and their matching original journal article abstracts obtained from PubMed. Three independent health professionals identified PECODR related extracts of text. Rules were developed to define each PECODR element and the selection process of characters, words, phrases and sentences. Differences in identification, and allocation to PECODR elements, of the extracts, were resolved by discussion. For each PECODR element, element-related extracts were read by two researchers who proposed potential lexical patterns. Using NVivo software, descriptive statistics on the assignment process were produced, and the occurrence of patterns was compared. **Results:** A total of 1,639 PECODR related extracts containing 84,225 individual text characters were made from 20 PubMed abstracts and their corresponding EBM journal synopses. The authors reached initial agreement on 80.5% of the extracts from the 20 PubMed abstracts and 84.3% on the EBM synopses. After consensus this rose to 97.5% & 98.5% respectively. PECODR elements were found in nearly all abstracts and synopses with the exception of duration. We found potential text patterns in the Comparison, Outcome & Results elements of both PubMed abstracts and EBM synopses. Some terms and words are used frequently and are specific for these elements in both abstracts and synopses. **Conclusions:** Results suggest a PECODR related

structure exists in the literature. More sophisticated computer-assisted lexical-semantic analysis may refine these results, and pave the way to automate a PECODR indexing, and improve information retrieval at the point-of-care.

N3-Assessing the Situational Relevance of Information From Electronic Knowledge Resources: A Mixed Methods Study in a Residency Context

Pluye, Pierre, McGill University; Grad, Roland; Mysore, Naveen; Knaapen, Loes; Johnson-Lafleur, Janique; Dawes, Martin

Context: Electronic Knowledge Resources (EKR) are increasingly used. However, no studies systematically examine physicians' acquisition of EKR-related information hits in everyday life. We previously proposed seven reasons why doctors use EKRs: four refer to cognitive objectives (C1-C2-C3-C4) and three to organizational objectives (O1-O2-O3): (C1) answer-solve-support clinical question-problem-decision; (C2) fulfill educational-research objective; (C3) search in general - for curiosity; (C4) overcome limits of physician memory; (O1) share information with patients; (O2) exchange information with other health professionals; (O3) plan-manage-monitor tasks with other health professionals. Information hits are relevant when users achieve at least one of these objectives.

Objective: To systematically assess the situational relevance of information hits. **Design, Setting, Participants,**

Intervention: Longitudinal multi-method multiple case study, Department of Family medicine, McGill University, Canada. Cases were 156 critical searches for information done by 17 residents using InfoRetriever during a 2-month block of family practice. Usage data on 1,981 information hits was linked to a computerized questionnaire on the impact of each hit (Ecological Momentary Assessment). Interviews with residents were guided by log files on use and impact. Qualitative analysis identified 156 critical searches for information (Critical Incident Technique). For each case, qualitative data were assigned to one of the proposed objectives. **Results:** Residents achieved their search objective in 86% of cases (situational relevance), and searched other sources of information in 50% of cases. Findings support the seven proposed reasons, and their ordering at three levels of stimulation of learning and knowledge: none (objective not achieved), moderate (cognitive objective achieved), and high (organizational objective achieved). **Conclusions:** Systematic assessment of the situational relevance of EKR-related information hits is possible. Our combination of search-level and hit-level evaluation adds to simple hit-related feed-back on user satisfaction. Information providers may combine current expert-value judgment on topical relevance with user-based assessment of situational relevance for maintaining database quality.

N4-Health Professional and Patient Perspectives of Home Telecare

Mair, Frances, University of Glasgow; Goldstein, Pauline; Hiscock, Julia; Beaton, Susan; May, Carl; Sheils, Chris; Angus, Robert; O'Connor, Jane; Roberts, Chris; Haycox, Alan; Capewell, Simon

Context: The use of telehealthcare, medicine at a distance, is increasingly being advocated by policymakers to promote community care of patients with chronic illness. There is however, little published research that directly compares patient and health care professional views of telehealthcare.

Objective: To describe and compare provider and patient perspectives of home telecare for the management of acute exacerbations of Chronic Obstructive Pulmonary Disease (COPD). **Design:** Quantitative and qualitative methods used during a RCT of home telecare. Quantitative methods included use of questionnaires with scale ranging from 1 (totally disagree) to 5 (totally agree) to assess attitudes of home telecare users (nurses and patients). Qualitative methods included semi-structured interviews with nurses and patients.

Setting: United Kingdom Community Outreach Service.

Participants: 30 Patients with COPD and 18 nurses providing community care. **Intervention:** Home telecare, consisting of real time videophone link and monitoring of physiological measures for patients with acute exacerbations of COPD who would otherwise merit hospital admission. **Outcome**

Measures: Differences in perception, if any, between patients and their health care providers with regard to telecare encounters. **Results:** 30 patients, 18 nurses completing 190 and 238 logbooks respectively. Patients: mean age 68.7 years (SD 8.1); 63.3% (19) were female. Aggregated mean item scores across all questions showed significant differences between professionals and patients. Professionals expressed negative views in contrast to positive views of patients. For example: while patients felt the nurses could understand their general concerns, mean score of 4.5 (CI 4.3-4.9), nurses disagreed, mean score of 2.9 (CI 2.7 – 3.1); (P<0.001). Qualitative interviews provided explanations for differences, often relating to different requirements of the system. Professionals believed patients did not fully appreciate system deficiencies. **Conclusions:** Patients and professional perceptions of telecare differed significantly. Further investigation is required with larger sample sizes across a range of telehealthcare contexts.

N5-Pan-Canadian Primary Health Care (PHC) Indicator Development Project

Webster, Greg; Pulcins, Indra; Yurcan, Marta; Wray, Ron; MacPhail, Judith, Canadian Institute for Health Information; Gupta, Shamali; Lobach, Natalia; Mitmaker, Lisa; McKenzie, Diane; Walker, Vicky

Context: Currently, we know little about Primary Health Care (PHC) structure, the way services are delivered and results of these services in Canada. A need was identified for comparable PHC indicators across Canada to understand and improve PHC and PHC renewal efforts. **Objectives:** Agreed-upon pan-Canadian PHC indicators that map to PHC

Transition Fund's National Evaluation Strategy, and advice concerning enhancement to data collection infrastructure (DCI) that could be used to report these indicators. Design: Scans, Working Groups, modified Delphi technique. Setting: pan-Canadian. Participants: 100+ individuals from provinces/territories, regions, providers, professional health associations and researchers offered some level of input into indicators and DCI options. Intervention/Instrument: Multiple methods were used to identify indicators based on best available evidence and broad stakeholder agreement, including environmental scans, literature reviews; consultation with experts; two consensus conferences; five working groups; and web-based modified Delphi Process - 3 rounds. Agreement was primarily determined by 70% of participants rating indicator for importance in top tertile using 9 point scale (1=low importance and 9 = high importance). Outcome Measures: Selection and development of indicators. Range of DCI enhancement options. Results: List of 105 PHC indicators covering domains of access, human health resources and integration, quality of services and comprehensiveness. 100 of 105 indicators achieved high consensus in Delphi, Round 3 (81% response rate). Currently, 18 indicators can be calculated using existing data sources. Options for enhancing pan-Canadian PHC DCI could improve availability of reliable and comparable PHC information at following levels: client/patient/population, provider, organization, clinical administrative and other administrative data sources. Conclusions: 105 agreed-upon indicators covering a range of elements of PHC and were identified as important to broad range of stakeholders across Canada. The 105 indicators can be used to create subsets or abridged lists of indicators to focus on different perspectives. Improving PHC data collection over time has the potential to improve the capacity of multiple stakeholders to measure and manage PHC. The indicators, DCI options and future directions will be presented.

N6-Treatment of Depression in Ambulatory Care: A Study From a National Electronic Health Record (EHR) Network

Gill, James, Thomas Jefferson University; Chen, Ying Xia
Context: Primary care physicians are often criticized for underdiagnosis and undertreatment of depression. However, the evidence for this contention is scant, partly due to the difficulty in conducting large-scale nationally representative studies in outpatient settings. Objective: To describe the pharmacologic treatment of new episodes of depression in a large national outpatient network of electronic health records (EHRs) in the United States. Design: Descriptive study using EHR data. Setting: The "Medical Quality Improvement Consortium" (MQIC), a national US network of over 5000 physicians (63 percent primary care) and other clinicians in 40 states with over 5 million patients. Patients: 29,768 adult patients (ages 18 and over) with a new diagnosis of depression over a one-year period (7/1/03-

6/30/04) were included. Inclusion criteria required no previous diagnosis of depression within six month prior, and at least one prior office visit prior to the diagnosis of depression and in the year after diagnosis. Outcome Measures: Prescription of initial antidepressant medications, as well as discontinuation, switching and augmentation. Results: Ten percent of episodes were major depression, 14 percent dysthymia, seven percent adjustment disorder, and 68 percent depression not otherwise specified. 12,123 patients (40.1 percent) were prescribed antidepressant medications within one year of diagnosis. The most common categories were SSRI's (70.1 percent) followed by bupropion (11.6 percent) and SNRI's (9.2 percent). 84 percent of medications were discontinued within one year, with similar discontinuation rates across categories. Within that same year, switching medications occurred in 2183 patient episodes (18.0 percent) and augmentation in 1752 episodes (14.5 percent). Conclusions: This study shows that most patients treated for depression in outpatient settings do not continue medication long-term, and that both switching and augmentation are not uncommon. The study also demonstrates the utility of an EHR network for conducting large-scale national studies in outpatient quality of care.

Monday, October 16 Workshops 2:30 – 4 pm

WK1-A 90 Minute Workshop on How to Create an Alternatively Structured Academic Primary Care Research Fellowship to Enhance Research Infrastructure CANYON SUITE I

Henley, Eric, University of Illinois at Rockford; Lutfiyya, M. Nawal; McGrath, Cynthia; Cha, Isaac; Bales, Robert
Objectives: Smaller (or research-poor) academic primary care departments may have difficulty increasing the research capacity of clinically-oriented faculty. This session will focus on the creation of a non-traditional academic research fellowship within a department of family medicine. UIC-Rockford's academic primary care research fellowship competitively accepts interested departmental faculty, at any career stage, and protects and supports 20 percent of their time as an academic fellow. All fellows continue to meet their clinical and teaching responsibilities. This fellowship is completed over a 24-month timeframe and entails structured lectures, seminars and bio-statistics and data analysis workshops. The fellowship culminates in at least one completed primary care research project. In this workshop, multiple perspectives and necessary contributions will be described : 1) what the Department Chair must be committed to providing; 2) the role and responsibilities of the Fellowship Director; 3) who the Fellows should be; and 4) what commitments the Fellows must be prepared to make. Content:

This workshop will provide, discuss and illustrate: 1) the fellowship curricula; 2) specific seminars, exercises and bio-statistics workshops used to structure the fellowship; 3) knowledge and skills accrued from participating in the fellowship; and 4) products produced as a result of participating in the fellowship. Method: The workshop will be interactive involving mini-lectures, demonstrations of and participation in guided exercises of curriculum development and data analysis methods. The fellows, director and chair will present their perspective on what it takes to make this effort successful. Prerequisite Knowledge: Participants should be members of primary care departments. They should be knowledgeable about academic research fellowships in primary care and interested in creating such in order to build or enhance the research infrastructure in their primary care departments.

WK2-Physicians' Unanswered Questions About Patient Care

CANYON SUITE II

Byng, Richard, Peninsula Medical School; Dowrick, Christopher

Objective: To consider the patients' contribution to discourse about emotional problems in primary care, and how this discourse and its impact can be examined. Content: This workshop will begin by examining the different ways in which patients can contribute positively to consultations. The first part will consider theoretical models for how patient involvement might improve wellbeing. 1. Emotional processing is a critical process to improved mental health in psychotherapy. Recent primary care research suggests that patients' expression of emotion predicts improved outcomes for depression. This might lead to the critical subsequent cognitive processing. 2. Solution focused approaches to psychological work require reflection on past successes and contemplation of the detail of future better ways of being. Some practitioners are experimenting with this way of working. 3. Empowerment of patients through sharing in the decision making process about diagnosis and treatment has been an emerging theme over the last 10 – 15 years in primary care. Sharing in decisions about diagnosis and treatment may improve outcomes. Participants will discuss these and other models. Small group work will then be used to consider the transcripts of consultations, which illustrate some or all of these theoretical processes. Conversation analysis as a methodological technique for understanding the institutional form of primary care consultations for mental health will be introduced, along with tape assisted recall as a method of gaining further insight into the patients' and clinicians' thoughts and behaviours during and following the consultation. The whole group will discuss research questions of importance to this area of work. Methods: Scene setting plenary session. Small group work. Plenary discussions. Prerequisite Knowledge: anyone with an interest in the therapeutic potential of the primary care

consultation is welcome. Experience of research into consultation interactions and processes will add richness to the workshop, but this is not essential.

WK3-A Critical Time for NAPCRG: Continued Growth and Development of Leaders

CANYON SUITE III

DeVoe, Jennifer, Oregon Health & Science University; Chen, Frederick; Saultz, John

In his book, *Lives of Moral Leadership*, Robert Coles explores how leaders are needed at critical moments in life to "hand one another along" (quote from Walker Percy's *The Moviegoer*). He discusses how leadership is about knowing where you want to go, why you want to go there, and then finding people to help take you there. NAPCRG has become an organization that identifies and shapes leaders for these critical moments in primary care research. The NAPCRG board wants to continue finding new ways to maximize NAPCRG's contribution to the growth and development of leaders within our organization. In addition, NAPCRG has increasingly been called upon to be an organizational leader in international primary care research efforts towards expansion and excellence. This interactive session offers NAPCRG members an opportunity to contribute to an ongoing discussion about how best to nurture leaders within NAPCRG and to develop NAPCRG's leadership. Objectives: 1. Discuss (briefly!) some established frameworks and different perspectives for thinking about leadership. 2. Review recommendations from the NAPCRG Advocacy and Leadership Task Forces. 3. Create a forum for feedback and new ideas about future leadership directions for NAPCRG. 4. Develop specific recommendations for the NAPCRG board to explore in the continued growth and development of NAPCRG leaders. Content: After a brief overview, the content of the session will depend largely on input from the group. Using both small and large group formats, members will be asked to participate in discussions about the future development of NAPCRG's leadership potential. Possible discussion topics will focus on what types of leaders are needed in our organization, how NAPCRG can best identify leaders, what leadership development opportunities NAPCRG should provide, and/or what directions NAPCRG leadership efforts should go. Prerequisite Knowledge: Interest, enthusiasm, insight from a favorite leadership book or experience (optional!).

WK4-Developing Integrated Approaches to Reporting Mixed Methods Research

CANYON SUITE IV

Stange, Kurt, Case Western Reserve University; Crabtree, Benjamin; Miller, William

Objective: Advances in conducting mixed methods research have not been matched by progress in reporting and publishing Results from these designs. Therefore, this workshop will

elaborate options for reporting mixed methods research in of the methods. Content: New approaches will emerge from the session; however, current strategies for integrating the publication of mixed methods research to be discussed include: 1) reporting quantitative and qualitative papers in separate journals; 2) preparation of concurrent or sequential quantitative and a qualitative papers for publication in the same journal; 3) writing an integrated single article that describes both quantitative and qualitative methods and findings, and draws overarching lessons, with or without appendices that present study details; 4) preparation of separate qualitative and quantitative papers accompanied by a 3rd paper that draws overarching lessons. The practical implications for each of these strategies for both authors and journals will be explored. Method: Editors of the Annals of Family medicine will: 1) describe the problem that has emerged as advances in conducting mixed methods research have not kept pace with parallel advances in ways of reporting the results from these designs; 2) share examples of the published literature, including from the July/August, 2006 theme issue of the Annals which will be devoted to mixed methods research; 3) interactively explore with participants creative options for maximizing the generation and portrayal of crosscutting knowledge from integrating qualitative and quantitative methods. Prerequisite Knowledge: Having read the introductory editorial and reviewed the relevant manuscripts from the July/August 2006 issue of the Annals of Family medicine (www.annfammed.org). Experience with mixed methods research is desirable, but not required. We encourage participants to bring examples from their own mixed methods studies.

Monday, October 16

Concurrent Paper Sessions

4:15 – 5:45 pm

OBESEITY/EXERCISE/NUTRITION (O1-O6)

CORONADO I

O1- Identifying Fitness Professionals Qualified to Work With Physician-referred Clients: A Descriptive Study of Certification Programs

Hwang, Kevin, University of Texas at Houston; Thomas, Eric

Context: Primary care physicians can refer sedentary patients to fitness professionals for exercise motivation and guidance, but it is unknown how prepared fitness professionals are to work with physician-referred clients. Objective: To evaluate certification programs available to fitness professionals in the US Design: Descriptive study of certification programs with data collected from websites; data confirmed by survey of program staff members. Setting: Nationwide. Participants: 52 programs which

ways that maximize learning from the complementary nature certify fitness professionals in the US, identified by a Google web search and consultation with experts (descriptive study); staff of the 25 organizations which offer the 52 programs (survey). Outcome Measures: Certification requirements, accreditation by the National Commission for Certifying Agencies (NCCA), and items on the exam content outlines relevant to working with physician-referred clients. Results: Of the 52 certification programs, 6% require a relevant post-secondary educational degree, 48% require cardiopulmonary resuscitation training, 44% require a written exam administered at a specific testing site, 13% require a directly observed practical exam, and 79% require continuing education credits or a recertification exam to maintain certification. Thirteen percent of programs have been granted NCCA accreditation. One fifth of exam content outlines mention skill in adapting the exercise prescription for clients with chronic disease. Sixty-two percent of outlines mention client motivation, with 24% mentioning specific motivational techniques. Conclusions: Although there is much diversity among the certification programs, it appears that some programs prepare fitness professionals to work with clients with chronic diseases. Our findings can guide physicians who wish to seek alliances with fitness professionals.

O2-Primary Care Physician Knowledge, Attitudes, and Practices Regarding Obesity Management

Doubeni, Anna, University of Massachusetts Medical School; Savageau, Judith; Ratelle, Sylvie

Context: Obesity is a major public health problem in the United States. Although guidelines have been developed to assist primary care physicians in the assessment and management of overweight and obesity, little research exists on the impact of guidelines on physician knowledge, attitudes and practice. Objective: Explore current knowledge, attitudes, and adherence to national guidelines for the assessment and management of overweight and obesity in adult patients of practicing family physicians. Design: Cross-sectional study using a self-administered mailed survey. Setting: Physicians in community and academic settings in central Massachusetts. Participants: Eligible physicians were affiliated with the University of Massachusetts Department of Family medicine and Community Health and had a clinical practice with patients 18+ years (N=101 of the 107 surveys mailed; response rate: 49.5%). Instrument: The survey included 33 Likert scale and multiple-choice questions. Outcome Measures: Composite scores for knowledge, practice, and self-perceived competency were developed, and associations with key independent variables were examined. Results: Forty nine percent of respondents were aware of the NHLBI guidelines; those aware had a higher mean knowledge score (12.9 vs. 11.2; P=0.01). The observed increase in practice scores was marginally significant (8.1 vs. 6.6; P=0.06). Few respondents (12%) felt very/totally competent to manage overweight and obesity. Over 50% of respondents identified time as a barrier to adequate management of obesity “often” or “always”.

Greater than 75% of respondents reported beliefs about obesity hindering overall patient care and management. Only 41% noted a negative impact on preventive care. A third of physicians reported perception of their own weight or patients' perceptions of their weights' affected their ability to treat obesity. **Conclusions:** Although most physicians are generally knowledgeable about existing guidelines, adherence appears low. Results suggest that multiple barriers including physicians' perceptions about their own weight hamper the management of overweight and obesity in primary care settings.

O3-Effect of Insulin Resistance on Weight Loss in Overweight Children

Henes, Sarah; Kolasa, Kathryn; Cummings, Doyle; Collier, David; Olsson, John; Kolasa, Kathryn, East Carolina University

Context: The prevalence of overweight and hyperinsulinemia in children continues to rise. Data in adults suggest that dietary modification, especially carbohydrate (CHO) reduction, results in greater weight loss in adults with elevated insulin resistance patterns. The extent to which this applies in overweight children given a less prescribed CHO restriction is not well known. **Objective:** To assess the relationship between the magnitude of weight loss with dietary modification that includes carbohydrate reduction, and insulin resistance. **Design:** Case series. **Setting:** Pediatric and family medicine ambulatory practices. Patients: n= 45 children (age 2 – 18yr) above the 95th%tile BMI for age and gender, 64% female, 51% African-American. **Intervention:** All children and parents received medical nutrition therapy by a registered dietitian that included reduction of calories resulting in modification of carbohydrate intake (ie sweetened beverages). All patients were reassessed at two subsequent visits for a mean follow-up of 12 weeks. **Outcome Measures:** HOMA-IR (insulin resistance) was calculated from baseline fasting insulin and glucose; change in BMI-score (current BMI/BMI at 95th%tile age/gender x 100) from baseline to visit 3. Statistics: T-test, Pearson correlation coefficient, linear regression. **Results:** Change in BMI-score at follow up was correlated (Pearson= 0.43, $p < 0.01$) with baseline insulin resistance. Those with HOMA > 2 had a significantly greater reduction in BMI-score (- 2.1 vs. + 0.8, $p < 0.05$) than those with HOMA < 2 . Linear regression confirmed that HOMA was a significant predictor of change in BMI-score while controlling for age, race, sex, and baseline BMI. **Conclusion:** Overweight children with elevated insulin resistance appear to have greater weight loss in response to dietary modification that includes carbohydrate reduction (ie sugar sweetened beverages) than overweight children without elevated insulin resistance. Estimating insulin resistance at baseline may help prioritize dietary recommendations for overweight children.

O4-Are Portfolios Accepted for Faculty Development by Primary Care Academic Leaders?

Zobairi, Sumaiya, University of Texas at Houston; Nieman, Linda; Cheng, Lee

Context: The Curriculum Vitae may not be sufficient to document excellence in some areas of academic work such as teaching, administration, and professional development. The portfolio has gained prominence as an instrument for documenting scholarship especially in primary care fields which typically hire non traditional faculty, whose focus is teaching and clinical care rather than research. It is unclear in the academic literature to what extent primary care leaders are familiar with portfolios and have adapted them as a means of evaluating potential faculty candidates and promoting existing faculty. **Objective:** To assess primary care leaders' familiarity with and use of portfolios as a tool in the faculty evaluation and promotion process. **Design:** Cross-sectional survey. **Setting:** Academic primary care departments in the United States. **Participants:** Academic chairs of Family medicine (130) and academic division heads of General Internal Medicine (112) and General Pediatrics (193). **Outcome Measures:** The percentage of academic primary care leaders familiar with portfolios, stratified in terms of institutional and individual characteristics and their acceptance of and satisfaction with portfolios. **Results:** There was a 53% response rate. Sixty-eight percent of responders were familiar with portfolios and of these, 62% stated that they currently use portfolios. Institutional and individual characteristics of fellowship training favored portfolio familiarity and use. Portfolios are used in the promotion, evaluations and hiring process. Satisfaction with the source of information on a faculty candidate was greater with a portfolio (83.5%) than in the absence of a portfolio (71.6%) ($P=0.04$). **Conclusion:** This study is an important first step in surveying academic leaders in all three primary care specialties about portfolio usage. In order to assist the growing number of clinician educators and their departments with faculty development, the portfolio needs to be taken into consideration as a valuable resource for documenting scholarship and promoting professional competencies and achievement.

O5-Does the Public Expect Lifestyle Interventions From its Physicians? Results From Two Questionnaire Surveys

Donovan, Denise, University of Sherbrooke; Xhignesse, Marianne

Context: In developing learning objectives regarding lifestyle interventions, we are researching expectations and attitudes of various stakeholders including physicians, medical students and the community. A large body of literature examines factors that facilitate or obstruct preventive counseling, little of it relates specifically to the expectations of the general public. Although family physicians are effective motivators for lifestyle changes, they are inconsistent in their use of opportunities for preventive health counseling. Informally, they say that patients find counseling inappropriate in many

clinical situations. This reduces the priority level that some faculty members accord to this training. **Objective:** to assess to what extent the population expects its physicians to counsel patients on nutrition and exercise. **Design:** Quantitative: Two questionnaire surveys of the general public. **Setting:** Shopping centers, grocery stores, sports arenas and a retirement home in Sherbrooke, Québec. **Participants:** adults willing to reply to the questionnaire. **Intervention:** Questionnaire survey. **Results:** Nutrition: Of the 564 respondents, 69% wanted physicians to counsel on nutrition and 90% saw nutrition counseling as a major role for physicians. However, physicians came second to dietitians in the perceived reliability of nutritional information. Exercise survey response rate 64%. Of the 151 respondents, 96% were happy to receive advice on exercise from their physician, 58% would want a planned exercise program and 51% would want telephone follow-up. 89% felt that counseling was appropriate during a planned appointment, 52% agreed that doctors should provide counseling during walk-in visits and 46% agreed with counseling during visits to the emergency department. **Conclusion:** Patients expect physicians to provide lifestyle interventions in a variety of settings. This knowledge will help to gain buy-in to training or practice projects which aim to increase the offer of lifestyle interventions.

O6-Sweetened Beverage Consumption and its Relationship to BMI and Race

Owen, Lynda, East Carolina University; Whetstone, Lauren; Morrissey, Susan; ECU/Duke Childhood Overweight Research Group

Context: Several publications have linked the rise in non-diet soda and sweetened beverage (SB) consumption with the concurrent rise in the prevalence of childhood overweight. African-American children are known to have a higher prevalence of overweight than whites. Therefore it is worth exploring whether SB consumption patterns of children and their relationship to Body Mass Index (BMI) vary by race. **Objective:** To determine if average daily SB consumption (reported by parent-proxy) differs by race (white, African-American) and BMI status (ideal weight, at risk for overweight and overweight) **Design:** Cross-sectional survey. Standardized child height and weight measurement. **Participants:** 1346 parents and their children ages 5-11. Children were 48% female, 52% male. 63% white, 37% African-American. **Instrument:** Health behavior survey completed by consenting parent. **Outcome Measures:** Ounces consumed per day of non-diet soda and sweetened beverages. **Results:** Overall, this group reported drinking 20.09 mean ounces per day of SB. Univariate ANOVA revealed a main effect of BMI category (mean ounces per day for ideal weight =17.00, at risk for overweight = 20.18, overweight = 24.90) and a main effect of race; African-American children consumed more SB on average (mean ounces per day =24.81) than white children (mean ounces

per day =17.29). There was no significant interaction between race and BMI category; the pattern of consumption by BMI category was the same by race. **Conclusions:** The young children in this study drank a considerable amount of SB on a daily basis. Average SB consumption increased with each BMI category. In addition, race was found to be associated with SB consumption with African-Americans consuming more SB ounces per day than white children. SB consumption by race and its relation to BMI deserves further study. Careful monitoring of and education about beverage intake is warranted in children being counseled for overweight in the clinic.

OFFICE/PRACTICE MANAGEMENT (P1-P6) CORONADO II

P1-Challenges and Solutions in Creating, Building, and Sustaining Interprofessional Primary Health Care Teams

Brown, Judith Belle; Freeman, Thomas; Lewis, Laura; Stewart, Moira; Bickford, Julia; Kasperski, Jan; Ellis, Kathy, The University of Western Ontario

Context: As primary health care teams (PHCTs) move from a multidisciplinary model to an interprofessional practice perspective there are numerous challenges to be addressed. **Objectives:** This paper examines the challenges faced by PHCTs as they adopt an interprofessional practice perspective. **Design:** A phenomenological qualitative study using individual indepth interviews was used. An iterative analysis process was used to examine the verbatim transcripts. **Setting:** PHCTs in Ontario, Canada. **Participants:** A maximum variation sample of 121 participants from 16 PHCTs (10 urban and 6 rural sites). Participants included over a dozen professions (ie family physicians, nurses, social workers, pharmacists). **Outcome Measures:** Participants' experiences and perceptions about the challenges and solutions to becoming an interprofessional PHCT. **Results:** The analysis revealed both internal and external challenges. The 5 major internal challenges to interprofessional practice included: (1) team composition and roles, (2) scope of practice, (3) leadership and accountability, (4) power dynamics, and (5) conflict resolution. Four major external challenges included: (1) health human resources, (2) patient expectations, (3) resources and commodities, and (4) access and wait lists. Key solutions offered by the participants were in two domains. The first was active and targeted public education to increase patient awareness of PHCTs and patient accountability. The second overarching solution was secure funding mechanisms (1) to support professional development activities, (2) to promote communication about patient care, administrative issues and team building through funded team meetings, and (3) to create optimal physical environments for teams in order to provide patient care, interact, socialize, teach and team build. **Conclusions:** The internal and external challenges facing PHCTs can be met by developing creative and innovative solutions. The primary health care climate is ready for change and PHCTs need not be daunted by the challenges

before them but rather inspired with various ways to create, build and sustain teams.

P2-Inter-rater Reliability of the ALPHA (Antenatal Psychosocial Health Assessment) Form

Kahan, Meldon, St Joseph's Health Center; Midmer, Deana; Ordean, Alice

Context: Studies on population-based samples have demonstrated that the ALPHA form is a valid and reliable instrument for identifying psychosocial risk factors in pregnancy. The goal was to measure the inter-rater reliability of the ALPHA form, when completed by different providers observing standardized role-plays. Research questions were: 1) How do ALPHA responses differ among providers observing the same role play; 2) Are variations in responses consistent between the three role plays; 3) How do providers vary in their recommendations for referral and interventions. **Design:** Convenient samples of providers attending national and regional family medicine and public health nurse meetings. Interventions: A standardized patient was trained to portray three pregnant women with diverse psychosocial issues: depression, woman abuse and alcohol use. At each session, a volunteer for each different role-play asked the ALPHA questions. The same facilitator conducted all sessions. **Outcome Measures:** Responses of the providers on the ALPHA forms following the role-plays. **Results:** The majority of the 105 participants were family physicians (54%) and public health nurses (30%). Most worked in an urban/suburban (57%) or inner city (14%) setting, with 14% working in small towns and 8% in rural or remote settings. Cronbach's alpha indicated an overall high level of survey robustness for each of the individual role-plays, suggesting that the form is a reliable assessment tool. However, there was high reliability for the case on depression, moderate reliability regarding woman abuse and the lowest reliability relating to alcohol use. The interventions and referrals chosen by the providers were also similar. **Conclusions:** After observing role-plays depicting psychosocial issues in pregnancy, participants displayed high inter-rater reliability on a majority of the questions on the ALPHA form. Substance use in pregnancy was evaluated the least reliably.

P3-Integrating Nurses Into a New Primary Care Setting in Quebec: An Implementation Study

Goudreau, Johanne, Université de Montréal/CSSSLaval; Beaulieu, Marie-Dominique; D'Amour, Danielle; Hudon, Évelyne; Denis, Jean-Louis; Haggerty, Jeannie; Jobin, Guy; Lamothe, Lise; Gilbert, Frédéric; Guay, Hélène

Context: In 2002, a new form of primary-care organization—the family medicine group (FMG)—was introduced in the province of Quebec. In FMGs, groups of family physicians work with nurses to offer primary-care services to registered individuals. Since the dyad of nurse and family physician is new to primary care in Quebec, integrating the nurses (registered nurses (RNs) with a

bachelor's degree) into FMGs is crucial to the implementation of such groups. **Objective:** To evaluate the FMG-implementation process in terms of organization of work and professional collaboration. **Design:** A case-study approach with embedded units of analysis was used. Two series of individual interviews with nurses (RNs with a bachelor's degree) and physicians affiliated with five FMGs were conducted, one series at the beginning and the second at the end of a two-year period (T0, N=31 and T2, N=35). The semi-structured interviews with open-ended questions explored the clinical and collaborative practices of physicians and nurses in the groups. A template based on the analytical framework put forward by D'Amour et al. (1997) was used to analyze the development of collaboration. **Results:** Analysis showed nurses made a significant contribution to the continuing care of chronically ill patients through patient education and counselling; liaison with community resources and secondary- and tertiary-care services; and monitoring biological parameters (such as vital signs, lab results). The results also demonstrate that nurse-physician collaboration takes time to develop and is facilitated by formalizing protocols and providing for greater nurse autonomy. **Conclusion:** The study clearly demonstrates the value added of nursing in primary care. Issues regarding nurses' professional autonomy and nursing education were raised. The identification of facilitators of professional collaboration was also important.

P4-Appreciative Inquiry in Primary Care: Tapping Motivation, Realizing Potential

Ruhe, Mary, Case Western Reserve University; Carter, Caroline; Weyer, Sharon; Litaker, David; Sylvia, Sarah; Stange, Kurt

Context: Appreciative Inquiry (AI) is an organizational change process developed for business settings to cultivate positive change and meaningful growth. AI fosters learning through discovery and recognition of organizational strengths, and inquiry into topics valuable to organization members. **Objective:** To describe the topic choices, change agendas, forms of engagement and inquiry strategies that surfaced during implementation of an AI practice improvement project in primary care practice. **Design:** A case study approach was used to analyze AI implementation at the first 11 intervention sites in the Enhancing Practice Outcomes through Communities and Healthcare systems (EPOCHS) project; a group randomized clinical trial designed to improve preventive service delivery and practice capacity to change. **Participants:** Personnel at 30 primary care practices, stratified by health care system affiliation, randomized to initial or delayed intervention groups. Intervention: Based on a multimethod practice assessment, an "appreciative topic" was chosen as the focus for the four stage AI process: discovery (appreciate what is), dream (imagine what might be), design (determine what should be) and destiny (create what will be). **Results:** Topic choices and implementation strategies reflected the interests and values present at each practice. The inquiry

process revealed fresh practice perceptions. Practices used AI to plan organizational change, small group development and personal/relational transformation initiatives. Practices used approaches ranging from practice wide meetings to small action teams. Networks for positive change were developed by sharing stories with patients, other sites or system representatives. Practice change potential frequently increased when new voices were heard and groups engaged actively in refining a collective “ideal.” **Conclusions:** With flexibility and tailoring, AI can be applied in diverse primary care settings. By focusing on what gives meaning to individuals and the organizations to which they belong, AI has the potential to tap into underutilized or unrealized potential for positive organizational change.

P5-Revising the Medicare Payment System to Assure Access to Primary Care Services

Dodoo, Martey, Robert Graham Center; Philips, Robert
Context: Many have attributed continued growth in health spending (faster than GDP) to flaws in current Medicare provider payment system. One such flaw is the built-in “collective incentive for physicians to reduce inappropriate care.” However, since primary care (Evaluation and Management (E&M)) procedures are less subject to physician volume manipulations, they are unfairly treated under current system. We provide a remedy separating E&M and Procedural care into different funding pools ensuring access to primary care while reining in total healthcare costs. **Objective:** Test recommended modifications in the Medicare Part B payment formula, and separation of the funding formula into E&M and Procedural care funding pools. **Design:** Specified a model that simulates derivation of the Medicare fee schedule for 1998-2005. Used the model to perform sensitivity analysis developing three options: without the Sustained Growth Rate (SGR), with 5% changes in the Medical Economic Index (MEI), and creating separate fee schedules for E&M and for non-E&M procedures. Calculated total health spending implications of the separate E&M-based fee schedules, and any resulting government savings. **Outcome Measures:** Projected changes in the Medicare fee conversion factor. **Results:** Our model produced results that matched those published by Medicare program. In 2004 total Medicare spending on physician services was \$87.2 billions. With a split fee schedule E&M conversion factor will be \$47.19 with \$48.6 Billion expenditures. The Procedural care conversion factor will be \$25.57 with \$37.6 billions expenditures, and net \$1 Billion savings. **Conclusions:** Many of the modifications advocated by professional associations do not effectively change the current Medicare fee schedule (would not have the desired outcomes they seek in the way of positive payment updates). One option that promotes access to primary care while still achieving cost-control desirable to the Federal Government is to replace the current process and create separate funding pools.

P6-Error Definitions and the Perception of Error by Family Physicians

Elder, Nancy, University of Cincinnati; Pallerla, Harini; Regan, Sandra

Context: Physicians are being asked to find, report and reduce medical errors in their practices, yet there is no universally understood definition of exactly what is meant by medical error. **Objective:** To describe the range of error definitions in use today, and to explore the interpretation of error by physicians. **Design:** Systematic literature review and pilot survey with 1 reminder mailing. **Participants:** Random sample of active members of the American Academy of Family Physicians (AAFP) and a selected sample of family physician patient safety “experts” (researchers, writers and policy advocates). **Methods:** The National Library of Medicine (via Pubmed), the internet and dictionaries were searched for error and medical error definitions. A survey consisting of 5 clinical scenarios (wrong test performed, abnormal result not followed-up, abnormal result overlooked, blood tube broken and missing scan results) was sent by mail to AAFP members and by e-mail to the experts. Physicians were asked to judge if an error occurred. **Results:** We found 25 different definitions for error in the medical literature, and collated 15 commonly used synonyms. Surveys were returned by 28.5% of 1000 AAFP members and 92% of 25 experts. Of the 5 scenarios, 100% felt overlooking an abnormal result was an error. For other scenarios there was less agreement (experts and AAFP members, respectively agreeing an error occurred): 100 and 87% the wrong test performed, 96 and 87% abnormal test not followed up, 74 and 62% scan results not available, and 57 and 47% a broken blood tube **Conclusion:** There is a lack of consensus about what constitutes an error both in the medical literature and in decision making by family physicians. Areas of confusion include the role of process vs. outcome, rare vs. common occurrences and system vs. human responsibility.

INFECTIOUS DISEASES (Q1-Q6)

AGAVE II & III

Q1-Routine Immunizations in Family Medicine - 2004 and 2005

Temte, Jonathan, University of Wisconsin; Young, Herbert; Schoof, Bellinda

Context: The American Academy of Family Physicians (AAFP) represents over 93,000 members. Because our spectrum of care spans from the prenatal period into old age, family physicians (FPs) provide immunizations of every type to recipients in every category of eligibility. Given this responsibility, policy makers need to understand the immunization behaviors of FPs. **Objective:** Through a CDC cooperative agreement, the AAFP conducted two annual surveys to better define current vaccine issues. **Design:** Cross-

sectional mailed surveys. Non-responders received up to two additional mailings. Summary statistics were evaluated. Approaches were compared between years and among demographic groups using chi square and ANOVA as appropriate. **Setting:** United States. **Participants:** Randomly selected clinically-active AAFP members in 2004 (n=2192) and 2005 (n=4720). **Instrument:** 22 and 27 item mailed surveys in 2004 and 2005, respectively. **Outcome Measures:** Spectrum of care, current provision of vaccines, clinical approaches to immunizations. **Results:** Modest rates of return were achieved (2004: n=1019, 46.5%; 2005: n=2278, 48.3%). FPs provided care to all age groups, routinely providing childhood and adolescent vaccines in rates spanning from 38.8% for MSPV4 to 93.1% for Td. Routine adult immunizations had rates from 19.4% for rubella to 95.2% for influenza. Most FPs were immunized against influenza (87.8% for 2003/04; 86.3% in 2004/05) as were their medical staffs (95.8%, 95.3%). A majority (65.7%) would support a recommendation for universal influenza immunization if vaccine supply could be assured and adequate. The AAFP (79.7%) and CDC (78.8%) were the primary sources of vaccine information for FPs, with the journal *American Family Physician* being the single most used resource (81.4%). **Conclusions:** FPs are actively engaged in the distribution of vaccines to patients and are sources of education. There appears to be a high level of compliance with ACIP recommendations in the provision of immunizations.

Q2-Hepatitis C Among Homeless Adults in Los Angeles
Gelberg, Lillian, David Geffen SOM at UCLA; Robertson, Marjorie; Arangua, Lisa; Andersen, Ronald; Leake, Barbara; Morgenstern, Hal; Nyamathi, Adeline; Moe, Ardis

Context: NIH's national HCV agenda includes early detection, treatment, and prevention for high-risk and infected persons. Injection drug use (IDU) is considered the primary means of transmission of HCV. Homeless adults in urban areas are at particularly high risk for HCV infection due to their high rates of IDU, however, there are no population-based studies of HCV in this population. **Objective:** To document the prevalence and correlates of HCV infection among homeless adults. **Design:** Community-based probability survey of 534 homeless adults in all (41) shelters and meal programs in the Skid Row area of Los Angeles, using a 2-hour face-to-face interview and blood testing for HCV, HBV, and HIV. **Results:** Lifetime prevalence was: HCV (28.7%), HBV (ever infected 32.7%, currently infected 2.2%), HIV (3.7%), HCV/HBV/or HIV (47%). Most adults with lifetime HCV infection (59%) also had been infected in their lifetime with HBV. HCV rates were higher among: lifetime IDU (85%, but only 52% of HCV+s reported IDU), lifetime intranasal drug use, sex work for cash (but not for drugs), 3+ tattoos in lifetime, transfusion before 1990, older age, former prison inmate, and men who had sex with men (all $p < .001$).

Among HCV+s, 50% had never been tested for HCV, only 24% knew they had HCV, and only 24% had ever been counseled about HCV. **Conclusions:** HCV rates were high among the Los Angeles homeless population relative to the general population (28.7% vs. 1.8%). Persons infected with HCV were at high risk for being infected with HBV, suggesting the need for HBV vaccination programs for homeless adults. As in other populations, injection drug use was the strongest risk factor for HCV infection. However, since only half of those infected with HCV reported IDU, other risk factors for HCV infection might also be important among homeless adults. Study findings will inform clinicians, health planners, and health policymakers regarding HCV screening, prevention, and treatment for homeless persons.

Q3-HIV/STI Prevention Services by Primary Care Physicians

Phillips, William, University of Washington; Montaño, Daniel; Kasprzyk, Danuta; Greek, April; Cubbins, Lisa

Context: Primary care physicians (PCPs) can help prevent HIV and other STIs across the spectrum of patient risk, but little is known about the services they provide. **Objective:** To describe current PCP practices in providing key HIV/STI prevention services: Risk Assessment, Prevention Counseling, and Offering Tests for HIV and other STIs. **Design:** Questionnaire developed with formal qualitative methods and mailed to PCPs with follow-up and incentives. Response rate was 78%. **Setting:** Routine health maintenance examinations (HMEs). **Participants:** Family physicians (FP, n=112), general internists (IM, n=107) and OB-GYNs (OB, n=92), sampled randomly from AMA Masterfile and practicing primary care in Washington State in 1999. **Main Outcome Measures:** Percent of PCPs who report providing services universally, defined as always or usually, to all adult patients regardless of apparent risk during HMEs. Frequencies compared with Chi-square at $P=.05$. Multivariate models test associations with physician and practice characteristics. **Results:** Less than half of all PCPs report a universal approach to these prevention services: Risk Assessment 49%, Prevention Counseling 36%, Offering STI Tests 23%, and Offering HIV Tests 15%. There was a consistent trend between physician specialty and percent universally offering each service, with OBs highest, FPs intermediate, and IMs lowest. The differences between OBs and IMs were significant for Risk Assessment: (OB 59%, FP 51%, IM 39%, $P=.044$); Offering STI Tests (OB 29%, FP 25%, IM 12%, $P=.023$); and Offering HIV Tests (OB 25%, FP 16%, IM 8%, $P=.022$). Percents providing Prevention Counseling were similar. **Conclusions:** PCPs provide key HIV/STI prevention services, but not universally. They rely upon informal assessment of risk to select the patients they target for services. Patterns are associated with physician specialty, characteristics, and attitudes. Opportunities are lost for reducing patients' risk of HIV and STI.

Q4-Herpes Zoster in the Community

Yawn, Barbara, Olmsted Medical Center; Wollan, Peter; Saint-Sauver, Jennifer; Saddier, Patricia; Sy, Lina

Context: Herpes zoster or shingles is a common primary care condition with significant associate morbidity. HZ is the reactivation of primary Varicella Zoster Virus infection usually acquired in childhood as chickenpox and incidence increases with age, white race and immunocompromising conditions. **Design:** This population based medical record review study is the first US population based study in over 50 years to assess HZ incidence, and complication rates. Unlike information from administrative data base studies, each HZ diagnosis or complication was confirmed by medical record review. **Results:** Of 2175 potential cases identified by administrative data base, 520 (24%) were eliminated because they were either not incident cases, were herpes simplex or were other rashes diagnosed as consider or rule out HZ but had an ICD-9 code for HZ. The use of the PHN code was even more problematic with over 75% of the cases eliminated. PHN was often diagnosed on the day of initial HZ diagnosis when the rash was painful. The incidence did increase with age going from 1.6/1000/year in those 20 to 29 to 12.7/1000/year in those 80 and older. Overall, 65% of case occurred in those 50 years and older with 18% in those 50 to 59, 17% in those 60 to 69, 16% in those 70 to 79 and 14% in those 80 and older. Only 4.3% of all cases were in people with immunocompromising conditions. Three fourths of cases (76%) were diagnosed by primary care physicians in the office with another 14% of cases diagnosed in the ED. Complications rates increased with increasing age. Acute pain requiring prescription medications was present in 57%; pain lasting at least 30 days was present in 18% with pain for at least 60 days in 13% and pain for 90 or more days in 10%. Non-pain complications occurred in 9% of subjects. **Conclusion:** HZ increases with age and is most commonly experienced in those 50 to 59 years of age. Complications are not uncommon and 10% of subjects experience chronic pain for at least 3 months.

Q5-Who Re-consults With Cough? Influence of Antibiotic Prescribing Strategies on Longer Term Re-attendance for Acute Lower Respiratory Tract Infection

Moore, Michael, Southampton University; Little, Paul; Rumsby, Kate; Kelly, Jo; Watson, Louise; Warner, Greg; Fahey, Tom; Williamson, Ian

Context: Acute Lower Respiratory Tract Infection (LRTI) is the most common condition managed in primary care. One of the dangers of antibiotic prescribing is 'medicalizing' illness - fostering the belief in the importance of antibiotics and hence encouraging a cycle of re-attendance and further antibiotic prescribing. Follow-up data from a randomized trial of leaflet and antibiotic prescribing strategies is presented seeking evidence of medicalization. **Objective:** To determine the influence of prescribing and other factors on

re-attendance for acute LRTI. **Design:** Longer term follow-up of consultation rates following a randomized controlled trial of antibiotic prescribing strategies in LRTI. **Setting:** Primary care clinics in the UK. **Participants:** 807 patients with lower respiratory tract infection (cough as the main symptom). **Intervention:** At the index consultation patients were randomized to one of three antibiotic prescribing strategies (antibiotics, delayed antibiotics, no antibiotics) and half of each of these groups was randomized to receive a leaflet. Prior antibiotic use and re-attendance was assessed by notes review. **Outcome Measures:** Rate of attendance (the number of episodes of attendance per year) with cough as the main presenting symptom from 1 month and up to 1 year after the index consultation. **Results:** Patients who had been prescribed antibiotics for cough in the previous two years were much more likely to re-attend (incidence rate ratio (irr) 2.59, 1.61 to 4.17). In such patients compared to those prescribed immediate antibiotics there was a 34% reduction in consultation rate in the no antibiotic group (irr 0.66, 0.34 to 1.30, P=0.230) and a 79% reduction for delayed antibiotics (irr 0.21, 0.08 to 0.53, P=0.001). For patients who had not been prescribed antibiotics for cough in the previous two years there was no such reduction in consultation rate following either prescribing strategy; no antibiotic group (irr 1.28, 0.85 to 1.91, P=0.237); delayed antibiotic group (irr 1.22, 0.81 to 1.84, P=0.341). **Conclusion:** Delayed antibiotic prescribing for lower respiratory tract infection is probably more powerful than not prescribing antibiotics in modifying re-attendance behavior particularly in those with a history of prior antibiotic consumption for LRTI.

Q6-Secondary Results of Azithromycin Treatment for Asthma in a Pilot Randomized Trial

Hahn, David, Dean Medical Center; Plane, Mary Beth; Mahdi, Olaimatu; Byrne, Gerald

Context: Chlamydia pneumoniae (Cpn) produces acute and chronic lung infections and is associated with asthma. Evidence for effectiveness of anti-chlamydial antibiotics in asthma is limited. **Objectives:** The primary objective was to investigate the feasibility of performing an asthma clinical trial in practice settings. The secondary objectives were to investigate (1) whether azithromycin treatment would improve asthma outcomes and (2) whether Cpn serology would be related to outcomes. This report presents the secondary results. **Design:** Double-blind randomized trial. **Setting:** Community-based healthcare settings in four states and one Canadian province. **Participants:** Adults with stable, persistent asthma. **Intervention:** Azithromycin (6 weekly doses) or identical matching placebo, plus usual care. **Outcome Measures:** Asthma quality-of-life (AQL), symptom, and medication changes from baseline (pre-treatment) to 3 months post-treatment (follow up); Cpn IgG and IgA antibodies at baseline and follow up. **Results:** AQL improved by 0.25 (95% CI -0.3, 0.8) units, overall asthma symptoms improved by 0.68 (0.1, 1.3) units, and rescue inhaler use decreased by 0.59 (-0.5, 1.6)

daily administrations in azithromycin- compared to placebo-treated subjects. Nine of 17 (53%, 28%-77%) azithromycin-treated subjects had ?1 unit improvement in AQL and/or ?50% decrease in rescue medication use, compared to 2 of 15 (13%, 2%-40%) placebo-treated subjects ($P<.03$). Baseline IgA antibodies were positively associated with worsening overall asthma symptoms at follow-up ($P<.05$), but IgG was not ($P=.63$). Overall asthma symptom improvement attributable to azithromycin was 28% in high IgA subjects versus 12% in low IgA subjects (P for interaction=0.27). **Conclusions:** Azithromycin did not significantly improve AQL but appeared to improve overall asthma symptoms. Larger community-based trials are warranted to determine (1) whether the positive effects on symptoms found in this pilot study can be reproduced, and (2) whether treatment will have a greater impact on QOL in patients with more severe forms of asthma.

PRACTICE-BASED RESEARCH III (R1-R6) *JOSHUA TREE I*

R1-Integrating Chronic Illness Care Management Into Family Medicine: Experiences in Ontario, Canada

Russell, Grant; Thille, Patricia, University of Ottawa; Hogg, William; Lemelin, Jacques

Context: Recent work has conceptualized new models for the primary care management of patients with chronic illness. The lessons have proved difficult to translate to the world of family practice. Recent interest has surrounded the potential of external nurse facilitators to help family physicians (FPs) introduce practice-based improvements for management of chronic illness. **Objectives:** To understand the experiences of FPs, patients and external facilitators with a family practice based chronic illness care planning intervention. **Design:** Qualitative study theoretically framed by phenomenology, nested within a randomized controlled trial investigating the impact of a facilitation intervention in a sample of Ontario family practices. Depth interviews were conducted with FPs, patients and the three study facilitators. Analysis, assisted by NVivo 2.0, used a constant comparative approach, independent transcript review and member checking. **Setting:** Eleven family practices in Ontario, Canada. **Participants:** A maximum variation sample of FPs (13) and patients (20) participating in the RCT. **Results:** While the facilitation process was acceptable to FPs, few embraced broader concepts of chronic illness management. While some FPs championed an integrated approach, individual care planning was time consuming and conflicted with many practitioners' perceptions of their role in patient care. The intervention's patient-centered principles were at times inconsistent with the FPs' biomedical models of chronic disease management. Most patients barely noticed the intervention, seeing it as little more than a chance to gain a longer appointment with their

usual physician. **Conclusions:** Implementation of a practice based model of chronic illness management requires a deeper understanding of practice, practitioner and patient barriers. The study findings highlight challenges and opportunities for optimizing the management of chronic illness in family practice and raise questions about the role of external facilitation in such a process.

R2-Using Context Evaluation Methods to Understand What Really Happens Within Australian Primary Health Care Integration Interventions

Naccarella, Lucio, The University of Melbourne; Sims, Jane

Context: Within the health services field there is currently a significant shift occurring in evaluation paradigms. Traditional positivist and individualistic explanations of phenomena, using process and impact evaluation methods are being replaced by more relational, contextual and systemic understanding of phenomena, using context evaluation methods. **Objectives:** This paper presents a relational schema, developed as part of a doctoral dissertation to understand general practitioner (GP) work-related relationships, to illustrate a context evaluation approach to the Australian Enhanced Primary Care Case Conferencing Medical Benefits Schedule item. **Design:** A qualitative research design was used to provide insights grounded in primary health care practice and to develop the 'relational schema.' **Setting:** Data was collected from three studies: pilot, main and a validation study. 50 semi-structured interviews were conducted. Nine GPs, four GP clinic staff, seven health care providers, three general practice support organization personnel and three general practice policymakers participated in the research. **Results:** This paper will describe the importance of using context evaluation methods to understand primary health care integration interventions within Australia. A program logic model for case conferencing item usage by GPs, incorporating the relational schema components will be presented. Evaluation questions and respective theories (ie, trust, complexity and network theory) that emerged through this process and that are pertinent to understanding what, how and why case conferencing works will be discussed. Conceptual and methodological challenges to using context evaluation approaches within the general practice and primary health care integration setting will be discussed. **Conclusions:** The implications of using relational and context evaluation methods to evaluate primary health care integration interventions and subsequently inform primary health care integration policy and research formation within Australia and internationally will also be discussed.

R3-Achievable Benchmarks of Care for a Diverse Set of Primary Care Quality Indicators

Ornstein, Steven, Medical University of South Carolina; Nietert, Paul; Jenkins, Ruth; Wessell, Andrea; Nemeth, Lynne; Feifer, Chris

Context: There is increasing attention on health care quality in the United States and elsewhere. While the Agency for Healthcare Research and Quality publishes a useful annual summary of quality across many domains, and while some employer groups and payers have established targets for clinical performance, there is limited empiric information about achievable performance in primary care settings.

Objective: To report achievable benchmarks of care (ABCs™) for a broad spectrum of primary care quality indicators. **Design:** Descriptive study from the 2006 Practice Partner Research Network (PPRNet) database. **Setting:** 103 primary care practices in 37 states participating in PPRNet. **Patients or Other Participants:** Data from the EMR of more than 460,000 patients cared for by 534 physicians and mid-level providers. **Intervention:** None. **Outcome Measures:** ABCs for screening and treatment indicators for cardiovascular disease, diabetes, cancer, respiratory illness, adult immunizations, mental health, nutrition, and safe prescribing in the elderly. ABCs reflect a level of attainable excellence among a group of practices and are not unduly influenced by high performing practices with small numbers of patients. **Results:** ABCs for 56 indicators ranged from 25.4% to 99.2%. Four ABCs were less than 50%, 6 were 50%- 60%, 7 were 60% to 70%, 16 were 70% to 80%, 13 were 80% to 90%, and 10 were greater than 90%. High ABCs (>80%) were achieved for blood pressure screening, lipid screening, avoiding antibiotics in uncomplicated upper respiratory infection, avoiding unsafe medications in the elderly, dyslipidemia management and control in CHD, and anti-thrombotic therapy for atrial fibrillation. Lower ABCs (<60%) were achieved for alcohol and mental health screening and counseling, nutrition counseling, Chlamydia screening, and use of pneumococcal and influenza immunizations in high-risk patients under 65 years of age. Incomplete data may have biased the lower ABCs. **Conclusions:** Primary care practices can achieve high performance across a broad number of primary care quality indicators.

R4-Alcohol Screening and Brief Intervention in a Primary Care Hypertensive Population: A Quality Improvement Intervention

Liszka, Heather, Medical University of South Carolina; Miller, Peter; Nemeth, Lynne; Jenkins, Ruth; Nietert, Paul; Wessell, Andrea; Ornstein, Steve

Context: Excessive alcohol use has been linked to hypertension, the most common primary diagnosis in the US. Alcohol screening in primary care has been poor and its impact low. **Objective:** To determine the effect of an intervention designed to improve alcohol screening and

brief intervention for hypertensive patients in primary care practices. **Design:** Mixed methods study including a randomized, controlled trial and focus group discussion with staff from intervention practices after one-year of intervention. **Setting/Participants:** Twenty primary care practices across the US, all using a common electronic medical record (EMR) which allows data extraction and analysis. Data from the EMR of more than 15,000 hypertensive patients within these practices was accessed. **Intervention/Instrument:** An alcohol-focused intervention to promote alcohol screening and brief intervention was implemented and included site visits, academic detailing, group education, performance feedback, participatory planning and network meetings. **Outcome Measures:** Rates of alcohol screening in hypertensive patients and rates of brief intervention administered in those diagnosed with an alcohol disorder. Focus group discussions were designed to provide helpful strategies for implementation of these processes. **Results:** Intervention practices were more likely to have screened hypertensive patients than control practices (OR = 9.8; 95% CI 1.5 to 62.3; P=0.016). Intervention practices were also more likely to have given brief intervention for those diagnosed with alcohol use disorders (OR=3.5; 95% CI 0.3 to 41.3, P=0.32). Focus group discussion yielded barriers and solutions to the process. **Conclusions:** Primary care practices receiving an alcohol-focused intervention were able to implement screening into their routine. Making alcohol diagnoses and providing brief intervention was more challenging. High performing practices can provide insight into their success in order to facilitate improvement of other practices.

R5-Examining Firearm Storage Habits of Family Medicine Patients: An RRNeT Study

Burge, Sandra, University of Texas HSC at San Antonio; Weigle, David

Context: Firearm-related injuries are the second leading cause of injury-related death in the United States. Access to household firearms is implicated in unintentional deaths among children, and in youth suicide and homicide. **Objectives:** to determine firearm storage habits among patients who own guns and determine key risk factors for unsafe storage. **Design:** A cross-sectional patient survey of firearm ownership and storage. **Setting:** Four clinics in the Residency Research Network of Texas (RRNeT). **Patients:** 106 outpatients who had guns in their households. **Survey:** The Firearm Ownership Survey assessed demographic information, characteristics of household firearms, and methods of storage. **Outcome Measures:** "Triple-safe firearm storage" were guns stored unloaded, locked, and not accessible by children. **Results:** Respondents were 48% Hispanic and 53% male. Their average age was 51 years. Half had no children in the household. The median number of guns per household was two. Hunters had more guns than nonhunters (4.6 vs. 2.0, P=.000). Hunters were more likely to own rifles (76% vs. 34%, P=.000) and shotguns (79% vs.

26%, $P=.000$), and less likely to own handguns (57% vs. 74%, $P=.067$). Those who had guns for protection were more likely to own handguns (75% vs. 52%, $P=.015$). Attitudes toward guns were favorable. Forty-two percent felt more safe with a gun, and most (84-92%) were unworried about accidental or intentional injury from firearms. Most firearms were stored unloaded and out of the reach of children, but only about half were locked up. Thirty-eight percent reported triple-safe storage. Logistic regression analysis using backward stepwise methods showed that four variables predicted triple-safe firearm storage: being Hispanic; being a handgun owner; using firearms for hunting; and more adults in the household. **Conclusions:** Understanding the household composition, types of firearms, and the purpose of gun ownership will help a physician tailor injury prevention advice to patients.

R6-Participation in a National Demonstration Quality Improvement Project Using Multi-Methods

Jenkins, Ruth, Medical University of South Carolina; Ornstein, Steven; Feifer, Chris; Nietert, Paul; Wessell, Andrea; Nemeth, Lynne; Roylance, Loraine; Liszka, Heather

Context: Strategies to improve the quality of health care are being implemented in primary care. Adoption of these strategies is a component of their effectiveness. The Practice Partner Research Network (PPRNet) conducted a four-year multi-method demonstration project to accelerate the translation of research into practice (ATRIP) designed to increase adherence to 84 practice guidelines. **Objective:** To report the use of quality improvement methods among participants. **Design:** Descriptive analysis of project records and participant surveys. **Setting:** Primary care practices participating in PPRNet-ATRIP. **Patients or Other Participants:** 101 practices and staff. **Main Outcomes Measures:** Number of practices that received performance reports, site visits, and attended network meetings. Feedback from participants on report usage, site visit helpfulness, and meeting value. **Results:** The 101 practices participated in ATRIP for at least 15 months. Average length of participation was 2.4 years. Located in 36 US states, 77% were family practice; 18% were internal medicine; 5% were multi-specialty practices. Forty-nine percent of practices contained less than 4 providers; 10% of practices had 10 or more. Practices received 873 quarterly feedback reports (mean per practice=8.6). Report evaluations indicated that 88% shared the report within the practice, 92% used them to guide improvement efforts, and 87% used them to evaluate the impact of the improvement projects. Sixty-five practices (63%) hosted 198 practice site visits (mean per practice=3.05). Attendees were providers (30%), nurses (30%) and support staff (39%). Site visit evaluations rated them as highly motivating (63%); and helpful for explaining practice improvement goals (62%). Fifty-five practices sent 175 attendees to at least one of

three annual network meetings. Meeting attendees gave highest ratings to presentations of diabetes and CVD care management, using reports as tools to improve care, and participant-led discussions of staff involvement. **Conclusions:** A quality improvement approach including practice reports, site visits and annual meetings can be effectively adopted in primary care practice.

RESEARCH CAPACITY BUILDING (S1-S6)

JOSHUA TREE II

S1-How to Build Research Capacity in Academic Primary Care: Lessons From the United Kingdom

Kendrick, Anthony, University of Southampton

Context: In 1997 the UK Department of Health (DH) published a report by a national working group on research and development (R&D) in primary care, led by Professor David Mant. Following this, new funding was awarded by the DH including a dedicated primary care personal fellowships scheme and a joint DH/Medical Research Council strategic call for primary care research projects. **Objectives:** To monitor progress in building research capacity. **Design:** National surveys of university departments conducted in 1986, 1998, 2001, and 2004 and follow-up of DH funded research fellows in 2005. **Participants:** Heads of university departments of primary care. **Results:** University departments of primary care expanded considerably between 1986 (124 full time equivalent (FTE) academic staff in 24 departments) and 2001 (290 FTE in 31). This paralleled a considerable increase in primary care teaching, as the mean number of sessions per medical student rose from 30 to 120. Research developed on the back of teaching and by 2001 the departments had 104 clinical researchers, 225 non-clinical researchers, 371 MSc students, and 206 doctoral students. In 2005, follow up of the first two years of the DH funded fellows showed that 17 out of 22 had succeeded to established university posts within six years of their award, and nine of them had achieved chairs. However, the most recent survey of academic departments in 2004 showed a lack of further expansion since 2001. The increase in senior posts was accompanied by a 30% reduction in intermediate lecturer and research fellow posts, and overall the number of primary care academics was static. Academic salaries fell further behind salaries for health service clinicians, which was identified as a disincentive to pursuing an academic career. **Conclusions:** Considerable progress has been made, but now more intermediate level posts are needed, with greater parity of income with health service clinicians. In 2005 a new national working party recommended establishing joint DH-university posts at pre- and post-doctoral level, to address the acknowledged shortage of clinical academics.

S2-Lessons Learned From Three Research Capacity Building Workshops for Departments of Family Medicine

Campbell, James, University of Missouri-Columbia; Williamson, Harold; Ewigman, Bernard; Hickner, John; Simmons, Tracey

Context: Following groundwork developed from two previous research capacity building (RCB) workshops for departments of family medicine, a third workshop was held in September, 2005. All three of these workshops were held at the University of Missouri and attended by department chairs, their research director and/or senior researcher(s). To assure diversity, a mix of departments in different stages of development classification (No Research; Emerging Research; Entrepreneurial Research, Sustainable Research; Replication of Research), were selected. Each participating department presented a case study at the workshop to create a strategic plan for enhancing their research capacity. This plan was generated from open discussions with a visiting consultant(s), participating MU faculty and other workshop participants. **Objective:** To identify strategies for enhancing research capacity based on the lessons learned from the RCB workshops. **Design:** We collected evaluation data including participant ratings on the different components of the workshop (department case studies, department case sessions, expert consultations, and lecture-discussions), as well as individual comments. Data were analyzed using both quantitative and qualitative methods of observation. **Setting:** University of Missouri-Columbia. **Participants:** A total of 36 workshop participants representing 17 departments of family medicine. **Results:** Ratings for all three workshops combined were positive with the opportunities to learn from colleagues in other departments ranked high. The lessons learned were divided into several observational categories: General, Structure, Process, Outcome, and context. **Conclusions:** All three workshops provided an opportunity to distinguish instructional lessons for increasing research capacity for departments of family medicine. More specifically, these observations may enable departments to evolve to the next stage of research development.

S3-What Makes a Team Work: The Foundation and Pillars of Teamwork

Brown, Judith Belle, University of Western Ontario; Lewis, Laura; Ellis, Kathy; Stewart, Moira; Bickford, Julia; Freeman, Thomas; Kasperski, Jan

Context: What makes primary health care teams (PHCTs) work is important as collaborative interprofessional teams become the norm in primary health care settings. **Objectives:** This paper examines the dynamics and characteristics of what makes PHCTs work. **Design:** A phenomenological qualitative study using individual indepth interviews. An iterative analysis process was used to examine the verbatim transcripts. **Setting:** PHCT in Ontario, Canada. **Participants:** A maximum variation sample of 121

participants from 16 PHCTs (10 urban and 6 rural sites). Participants included over a dozen professions (ie family physicians, nurses, social workers, pharmacists). **Outcome Measures:** Participants' experiences and perceptions about what makes a team work and the characteristics of a well functioning team. **Results:** Participants strongly endorsed a shared philosophy as the foundation of team work. This shared philosophy was two-pronged and included a common vision regarding the provision of patient care (ie continuity, patient-centered care) as well as a fundamental belief in the value of interprofessional, collaborative team practice. Participants described this latter aspect of a shared philosophy as being reinforced by having personalities that "fit together". Built on this foundation of a shared philosophy were the pillars of trust, respect and communication. These were viewed by Participants as the core building blocks of what makes a team work. Embedded within each pillar were specific characteristics. In the pillar of trust were characteristics of relationship building, approachability, caring and recognition of scope of practice. In the pillar of respect were characteristics of reciprocity and working well together. Within the pillar of communication were characteristics of openness, humour, and feeling valued. **Conclusions:** What makes a team work is a complex and dynamic interplay of multiple dimensions and reinforcing characteristics. As PHCT teams move towards interprofessional collaborative practice the foundation and pillars of team work are paramount in facilitating successful team work.

S4-Recruiting and Retaining High-risk Research Participants in a Randomized Controlled Trial on the Impact of Home-delivered Birth Control

Rdesinski, Rebecca, Oregon Health & Science University; Melnick, Alan; Creach, Dawn; Cozzens, Jessica; Carney, Patricia

Context: Recruiting and retaining high-risk participants in interventional research involving randomization is often challenging. While agreeing to take part in a clinical trial is not a top priority for this population, studying how to improve their health outcomes is. **Objective:** As part of a randomized clinical trial designed to provide in-home delivery of contraceptives, recruitment and retention efforts of the study sample were evaluated. Cost estimates and utility cut-points were examined and identified. **Design:** An observational study conducted within a randomized clinical trial. **Setting:** General community of Clackamas County, Oregon. **Participants:** Non-sterile females of child bearing age (15-44) who were at-risk for pregnancy, and interested in delaying pregnancy. Mean age of participants was 24.7 years. More than 75% had incomes under \$25,000, more than 50% had a high-school education or less, and nearly 20% had three or more live births. **Intervention:** In-home delivery of hormonal contraceptives. **Outcome Measures:** Economic and utility cut points associated with recruitment and retention efforts. **Results:** 245 women were identified in recruiting and retaining

103 participants involving 1,232 contact-attempts. The majority of recruitments (69.4%) were associated with a single agency (WIC). Self-referral had the highest ratio of referrals to enrollees (55.6%), and community outreach was lowest (33.3%). Over 84% of enrollees were scheduled within six contact-attempts. Doubling the contact-attempts reached only an additional 13%. Retention activities succeeded in maintaining >90% of the sample. Ninety-two percent of English-speaking participants completed the study versus 79% of Spanish-speaking participants. Time expenditure per enrollee was 10.4 hours for recruitment and 1.2 hours for retention, with an estimated cost per enrollee of \$324.03 for recruitment and \$39.14 for retention. There was no statistical difference in pregnancy between the two study groups. **Conclusions:** Successful recruitment and retention efforts can be achieved in high-risk populations, though the costs are significant. Number of contacts needed differed by study group, which needs to be considered in budget projections.

S5-Canadian Physician Involvement in Research

Scott, Sarah, College of Family Physicians of Canada; Bower, Ja; Grava-Gubins, Inese

Context: The need to strengthen Canada's family medicine research capacity is recognized as key to improving the health of Canadians. **Objective:** To describe current level of research involvement among Canadian physicians, & future research intentions of medical students and residents. **Design:** Self-reported survey data, indicating whether doctors are currently (or intend to be) involved in research, and whether availability of research opportunities was a factor leading to current career choice. **Participants:** 21,296 of all practicing doctors in Canada (2004); 598 PGY2 residents; 2,721 medical students. **Instrument:** 2004 National Physician Survey (NPS). **Results:** 22% of all Canadian physicians are currently involved in research; 11% of family physicians (FPs), 33% of other specialists. Among FPs, males indicate greater involvement (12% males vs. 9% females), with a U-shaped participation curve by age of physician. Participation rates vary by province (8 to 27%). Only 5% of FPs indicated research opportunities were a factor leading to selecting their current career, while among other specialists, 17% indicated this was a factor. Nearly ¼ of medical students (30% of males, 21% of females), 5% of family medicine residents, and 24% of other specialty residents indicated that research opportunities were a factor in their choice of medicine as a career, and their choice of specialty. If choosing their career today, 29% of medical students indicated they would include research. There was greater interest among males than females, and greater interest among students at specific universities. 18% of FM residents and 45% of all other specialty residents indicated an interest in including research as part of their future practice. During summers, about ¼ of medical students participated in paid research. Fewer participated in unpaid

summer research (11% overall). **Conclusions:** Participation rates in family medicine research vary widely by physician demographics, as well as practice and training location.

S6-Research Capacity Building in Family Medicine: The Five-weekend Program in Ontario

Rosser, Walter, Queen's University; Seguin, Rachelle; Godwin, Marshall

Context: The Ontario College of Family physicians first developed a five-weekend research capacity building program in 2000. After the first pilot program with nine participants, a second pilot program ran at Queens University for eight participants in 2002. In 2004 with several refinements and a manual for facilitators and participants a \$950,000 grant was received to run 14 programs in seven regions of the province between 2004 and 2006. **Objective:** To evaluate the success of the 5 weekend program in Ontario. **Results:** Thirteen of these programs have been completed with more than 125 participants almost all of whom are practicing community based family physicians. All participants have completed a paper on how to answer their research question, 27 have completed their project and at least 3 papers have been published from projects in peer reviewed journals. Almost 100% of participants gained a greater understanding of family medicine research, research methods and have gained a greater respect for the difficulties in answering research questions. **Conclusions:** The 21 facilitators of the program who each received 1 day of training found the program very exciting and rewarding and had many suggestions for further refinement. All felt that there was a growing demand and the program should continue. The program has been adapted for residents and is posted on the AFRD Web site (www.afmrd.org) for residency programs research component. This version of the program would be delivered during 10 monthly one day sessions over a year. The program is also being used by the University of the West Indies.

Monday, October 16

Workshops

4:15 – 5:45 pm

WK5-International Perspectives on Building Research Capacity: What Can We Learn From Each Other?

CANYON SUITE I

Hancock, Beverley, University of Birmingham; Wilson, Sue; Hancock, Denys

Objectives: 1. To compare and contrast international approaches to building research capacity in primary care. 2. To identify lessons learned and the extent of transferability to other countries. **Content:** The workshop will commence with an overview of approaches to building research capacity in primary care using examples from three countries: England,

the USA and Canada. Similarities and differences will be highlighted. Small group work will focus on capacity building topics such as national policy, funding sources, fellowship opportunities, and primary care research networks (local and national). Group moderators will facilitate discussion of how different countries approach the topic and if and how differences in approach may be transferable. Moderators will provide a summary of the discussion to the whole group of workshop participants.

Method: The workshop will be a combination of presentation, small group discussion and feedback. It is anticipated that the workshop will be of interest to a wide range of people involved in capacity building and all participants will be encouraged to contribute to the workshop using personal experience and examples of initiatives they have been involved in. The workshop facilitators will ensure international input into the group discussions by liaising with international colleagues in advance of the NAPCRG meeting to ensure their involvement in the workshop. Although the introduction will present work from three countries it is hoped that NAPCRG delegates from additional countries will participate to provide an even wider perspective.

Prerequisite Knowledge: The forum will be of particular interest to people involved in research capacity but prerequisite knowledge is not essential and new researchers should also find the information helpful to the development of their research careers.

WK6-Using Qualitative Methods in Primary Care Research: Practical Application and Innovation

CANYON SUITE II

Dolovich, Lisa; Burns, Sheri; Cosby, Jarold; Nair, Kalpana, Center for Evaluation of Medicines

Context: Qualitative research methods have gained increased acceptance in recent years. This has resulted in a large growth in the number of studies conducted using qualitative methods and this has been particularly evidenced within the field of primary care research. Chronic disease management, medication use, and the incorporation of other health care providers into primary care are areas of research where qualitative research methods have been used. In other studies, the use of qualitative methods for survey development and for evaluation purposes has also contributed towards broadening the scope of qualitative design and methodology. **Objectives:** In this session, researchers will highlight common data collection strategies used in primary care, share practical examples for the design and implementation of qualitative studies, and describe strategies for mentoring those new to qualitative methods. **Content:** Researchers from the Center for Evaluations of Medicines in Hamilton, Ontario, Canada have been involved in a large number of studies where qualitative methods have been used. This has resulted in a body of knowledge related to the conduct and use of qualitative methods in primary

care research. This session will provide a summary of approaches for: 1) participant recruitment: how best to approach clinicians & mechanisms to encourage participation; 2) data collection, organization and analysis (eg use of recording equipment; transcription issues; use of qualitative software; managing the data; analytic approaches) and, 3) maximizing study rigour: triangulation methods; use of multidisciplinary team; member checking. **Audience Participation:** Audience members will be divided into small groups and asked to problem-solve common dilemmas experienced in the conduct of qualitative research. This interactive component of the workshop will also provide an opportunity for audience members to share knowledge regarding lessons learned from the conduct of their own primary care research. **Prerequisite Knowledge:** This workshop is geared towards the beginner and intermediate researcher.

WK7-Medical Education Research: Catch the Rising Tide

CANYON SUITE III

Steiner, Elizabeth, Oregon Health & Science University; Carney, Patty; Chen, Freddy; Quirk, Mark

Objectives: This session will focus on research in medical education by identifying: 1. The need for rigorous research in specific areas of medical education; 2. The methods that might be undertaken to address educational research questions; 3. The challenges in conducting research in educational settings; 4. Differentiating between process and outcome measures; 5. Linking educational interventions with patient-centered outcomes when possible; and 6. Policy implications of medical education research. **Content:** There has been an increasing awareness of the need for high-quality research in medical education to better understand which educational techniques and curricula actually affect patient outcomes. However, this field is fraught with challenges, including battles for curricular time, lack of interest among medical educators in studying these issues rigorously, lack of sample sizes adequate to interpret findings, competing time commitments of medical educators, and learner misgivings & misunderstandings about participating in this type of research. The presenters all have extensive experience in medical education research, and will discuss opportunities, study methods, challenges, and ways to overcome barriers in planning and conducting medical education research, developing clear process and outcome measures (patient-centered when possible), writing proposals, project implementation, data analysis, and policy implications of medical education research outcomes. Methods of increasing educational research such as faculty mentorships, portfolios, and departmental incentives will be discussed. **Audience Participation:** Audience members will be asked to discuss their experience with medical education research at the beginning of the session. They will then engage in a detailed discussion of the issues both throughout the presentation and after its **Conclusion.** They will discuss one or two case scenarios

regarding barriers to medical education research, and ways to overcome these barriers. They will identify areas of mutual educational research interests for possible collaborations. Prerequisite Knowledge: None.

WK8-Challenges and Strategies in Conducting Community-based Qualitative Research With Immigrant Women

CANYON SUITE IV

Lohfeld, Lynne; Redwood-Campbell, Lynda; Fowler, Nancy; Kaczorowski, Janusz; Howard, Michelle; Shaw, Liz; Lytwyn, Alice; Karwalajtys, Tina, McMaster University

Objectives: 1) To share experiences in community-based qualitative research with immigrant women; 2) To reflect on the particular issues and challenges encountered in conducting research with immigrant groups and/or marginalized populations; 3) To discuss with the researchers and clinicians in the audience potential strategies for addressing the challenges raised; and 4) To assemble take home messages to assist researchers to anticipate challenges and build in solutions when designing similar projects.

Content: This session will start with a presentation of our experiences while conducting a qualitative study of barriers and enablers for cervical screening among immigrant women from diverse cultural/language groups in Hamilton, Ontario, including some unique techniques used in the focus groups (eg videotape, anatomy drawing exercise, scenarios for discussion). We will ask participants to discuss the particular challenges community-based research with immigrant women brings, and strategies for overcoming them. Topics to be covered include: forming an effective research team (including recruiting and training fieldworkers), recruiting participants, obtaining informed consent, developing culturally appropriate data collection methods and tools, translation and transcription, and budget and timeline considerations. A list of 'key strategies' will be assembled, to help researchers anticipate challenges and build in solutions when undertaking research in immigrant groups. Method of and extent of audience participation: Following the presentation of our case study, the audience will be invited to share their own experiences, in particular the challenges encountered or expected. Then, working in small groups, participants will identify possible solutions and provide feedback to larger group. Prerequisite Knowledge: Interest in and/or experience with any of the following: delivering health services/programs or conducting community-based health research with immigrants or marginalized groups, women's health issues, qualitative research.

**Tuesday, October 17
SAPC Distinguished Paper**

11:30 – Noon

CORONADO I

SS1- Blood Pressure Reduction With Statins: A Meta Analysis of Randomized Controlled Trials

Kerry, Sally, St. George's Univeristy of London; Strazzullo, P.; Barbato, A.; Versiero, M.; D'Elia, L.; Cappuccio, F.

Context: Statins are commonly prescribed in primary care to patients in order to lower cholesterol levels. Many of these patients are also suffering from hypertension. A few, relatively small studies have suggested that statins may lower blood pressure in these patients. Most large trials of statin therapy have allowed modification of concomitant antihypertensive therapy during the trial making it difficult to assess the anti hypertensive effect. We systematically reviewed the existing literature to identify all the studies reporting BP data during treatment with statins, which explicitly included a statement that antihypertensive drug therapy was kept unchanged during the trial. Design: We included in the meta-analysis only randomised trials published as original articles in international scientific journals in English. We included trials using as a control drug for statin treatment either an identical placebo or a different hypolipidemic drug. We searched online databases (PUBMED, HTA, EMBASE) up to October 2005 as well as Cochrane Library , other research databases and cited literature. Outcome Measures: The difference in the changes in systolic blood pressure (SBP) and diastolic blood pressure (DBP) achieved in patients taking the statin compared to those taking the control treatment We used a random effects model for the meta-analysis of the effect of statin therapy on BP. All trials, whether parallel groups or crossover, were analysed together using the intervention effect and its standard error for each study. Results: A total of 20 studies (887 patients) met the inclusion criteria. 324 patients were randomised to statins, 301 to placebo and 262 were from crossover trials. SBP was significantly lower in patients on a statin than on placebo (mean difference -1.9 mmHg, 95% C.I. = -3.8 to -0.1). DBP was also lower (-0.9 mmHg (-2.0 to 0.2)).Overall, the higher the baseline BP the greater the effect of statins on BP (p = 0.066 for SBP and p = 0.023 for DBP). Conclusions: This is the first meta analysis to show that statin therapy has a small but significant, favourable effect on BP. This has useful implications for patients in primary care.

Tuesday, October 17
Concurrent Paper Sessions
11:30 am – 12:30 pm

BEHAVIORAL/PSYCHOSOCIAL II (T1-T3)
CORONADO II

T1-They Don't Ask So I Don't Tell Them: A Qualitative Study of Patient-Provider Communication About Complementary and Alternative Medicine

Sussman, Andrew, University of New Mexico; Shelley, Brian; Williams, Robert; Segal, Alissa

Context: Rates of patient traditional and complementary and alternative medicine (T/CAM) use have been previously documented. However, there has been much less attention directed to the factors that influence communication with patients about their use of T/CAM. **Objective:** The primary goal of this study was to gain a better understanding of the communication between patients and primary care providers about T/CAM. **Design:** A sequential, qualitative approach was used which included a clinic staff focus group followed by patient and provider semi-structured interviews. **Setting:** The study was carried out in RIOS Net, a New Mexico PBRN. Network clinicians see primarily underserved Native American and Hispanic patients. **Patients or Other Participants:** 88 Native American and Hispanic patients seen in RIOS Net practices and 14 RIOS Net clinicians were interviewed in a total of eight clinic sites for this study using a purposeful sampling approach. **Results:** We found that the degree and nature of communication about T/CAM is based on the extent to which certain conditions are met in the clinical encounter. Patients identified clinician receptivity, recognition of their cultural identity and expectations about the clinician's knowledge of T/CAM as factors influencing discussion about use. The clinician interviews revealed that factors relating to clinicians' scientific training, perceived harm reduction role, lack of knowledge of specific T/CAM modalities, desire to protect the patient-provider relationship and the structure of the clinical encounter were relevant to engaging patients about T/CAM. **Conclusions:** Findings from this qualitative study, carried out in Native American and Hispanic populations, provide insight into the barriers and facilitators influencing communication about T/CAM. We believe that understanding these factors may help primary care providers to communicate more effectively with their patients about these topics and help them to better integrate the different types of care their patients utilize.

T2-Patient Perceptions and Physician Adaptation in a Family Medicine Clinic During Gradual Electronic Medical Record (EMR) Implementation

Shield, Renée; Anthony, David; Wang, Nina; Doyle, Richard; Borkan, Jeffrey; Goldman, Roberta, Brown Medical School

Context: Increasing electronic medical record (EMR) use in clinical settings requires multifaceted appreciation of how patients and doctors are affected during gradual implementation. Observations of medical encounters and insights from the patient perspective in this longitudinal study reveal how expectations for this technology are realized and/or unfulfilled. **Objectives:** To determine how patients respond to the process of integrating EMR use into their care, and to identify themes about their concerns and expectations regarding this technology. **Design:** Longitudinal qualitative design over 18 months whereby patients are observed in clinical encounters with their physicians followed immediately by a semi-structured interview. Physician-patient encounters involving 13 residents and 13 family medicine faculty were observed by an anthropologist twice in the pre-implementation phase, and 2-4 times during transition. **Setting:** The Family Care Center (FCC) of Memorial Hospital of Rhode Island, a model ambulatory clinic affiliated with Brown Medical School, comprises three faculty resident practices serving patients of primarily lower socioeconomic status. **Participants:** Patients who are 18+ with English proficiency and seeing physicians for acute and chronic follow-up visits are eligible. 110 patients of varying ages, ethnicity and computer access and experience. **Results:** Themes from observation and interview data include patients' 1) trust in the physician overriding documentation choice; 2) desire to maintain both paper and electronic records; 3) concern about security breaches; 4) interest in access to personal health record; and 4) current use of medical web resources. Creative physician adaptation and increased comfort with technology was evident over time. **Conclusions:** The physician-patient relationship underlies patient trust in physicians' use of paper or electronic documentation. Accommodation to electronic documentation by physicians and patients is a gradual but steady process. Lessons learned from study of integration of an EMR and use of computers in the out-patient visit rooms may be informative for other medical settings considering implementation of an EMR, and will be discussed.

T3-Adult Asthmatics' Consultations in Primary Care: What Is Said About Asthma and What Effect Does it Have on Outcomes?

Lussier, Marie-Therese, University of Montreal; Richard, Claude; Thivierge, Robert; Rodrigues, Isabel

Context: Although 70% of adult asthmatics receive their care from general practitioners (GP), little is known about when and how asthma is discussed in the context of these visits. **Objectives:** 1) To describe communication between GPs and asthmatic patients; 2) To assess the impact of communication on patient outcomes. **Design:** A prospective analytic study in which a cohort of asthmatics was followed for three months. **Setting:** Primary care (PC) offices. **Participants:** Thirty-six GPs of the Montreal area (Canada) and 251 asthmatic patients. **Instruments:** Patients completed pre and post-visit questionnaires which included validated measures of the main

outcomes. Consultations were audiotaped. Communication was analyzed with the Roter Interaction Analysis System (RIAS) and MEDICODE. Outcome Measures: Control of symptoms, adherence to medications, satisfaction with visit. Results: Median duration of the consultation was 13.9 minutes. Physicians talked slightly more (54,4% vs 45,6%) than patients. Discussion of asthma and its treatment accounted for 39,5% and 15% of visit utterances respectively. Exploration of symptoms, allergies, explanations, and smoking were the most frequently discussed themes. Most medication themes were initiated by physicians and discussed in a monologic fashion. The proportion of physicians' utterances related to asthma increased significantly ($p < 0.05$), but patient perception of medication comprehension did ($p < 0.01$). Conclusions: Communication about asthma during PC consultations varies with asthma clinical features and context of care variables. Clinical and context variables are stronger predictors of outcomes than the interactive measure of communication (RIAS). Further exploration of our content communication measure (MEDICODE) is underway to better delineate the relationship between communication and outcomes.

HEALTH CARE DISPARITIES II (U1-U4)

AGAVE II & III

U1-Impact of Free Medication Samples in Primary Care Practices: A Qualitative Study

Sohler, Nancy, City University of New York; Devia, Carlos; McKee, Diane

Context: The distribution of free sample medications in outpatient clinics is a common marketing practice of the pharmaceutical industry. Little is known about how providers and office staff perceive the benefits and risks of this practice, particularly in safety net clinic settings. Objective: This study explored perceptions of the benefits, risks, and ethical considerations related to distributing samples in outpatient community health centers by examining 1) decisions to use samples, and 2) attitudes about pharmaceutical representatives. Design: In-depth qualitative interviews. Setting: Family medicine and general internal medicine practices serving low- and middle-income patients in New York City. Participants: Physicians, nurses and administrators of target health care centers (N=20). Results: Three contrasting frameworks emerged. First, respondents who were strongly opposed to interactions with pharmaceutical representatives (including accepting free sample medications) based their arguments on concerns about conflicts of interest (eg gifts from marketing representatives create obligations that influence treatment decisions). Second, respondents who identified neither strong benefits nor harms from interactions with representatives and saw a limited value in accepting sample

medications placed greatest emphasis on distributive justice (eg having medications available for those who most need them), but discussed ethical dilemmas. Third, respondents who identified specific benefits from interactions with representatives and sample medications stressed the importance of physician autonomy and the ability of physicians to control influences from pharmaceutical marketing. Across all groups, respondents expressed their opinions in terms of how to best serve their patients, especially those with inadequate health insurance coverage. Conclusions: Most respondents evaluated marketing practices from the perspective of protecting and serving patients. Despite this, diverse opinions emerged based on financial considerations, weighing ethical dilemmas, and desire for physician autonomy. Research is needed that tests hypotheses about benefits and harms to patients from sampling practices and guides policies regarding interactions with pharmaceutical industry representatives.

U2-Quantifying the Relationship of Having a Personal Doctor to Measures of Health-related Quality of Life

Servoss, Timothy, SUNY at Buffalo

Context: Several studies document the benefits that patients experience through having a doctor or health care provider that they regularly visit. Advantages have been seen with regard to care continuity, preventive service utilization, and other outcomes. However, limited research exists quantifying the association between having a personal doctor and measures of health-related quality of life (HRQOL). Objective: To quantify the association between having a personal doctor and HRQOL as indicated by self-reported fair or poor health and unhealthy days. Design: Secondary analysis of the 2003 Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is an annual telephone-based survey that utilizes multi-stage cluster sampling and weighting to best approximate a sample representative of the US population. The sample design and weights were accounted for in the analysis using SUDAAN 9.0.1. Participants: Non-institutionalized adults aged 18 years or older are eligible for participation in BRFSS. In 2003, N=264,864. Outcome Measures: Self-reported health status dichotomized as fair or poor health vs. good to excellent health, and unhealthy days per month computed as a composite of self-reported unhealthy days due to physical or mental health reasons. Results: Adjusting for several demographic, chronic disease, and health behavior variables, logistic regression analyses suggest that those who have a personal doctor are less likely to report fair or poor health, OR=.81, 95%CI=(.73,.90), $P < .001$. Adjusting for the same covariates, linear regression analyses indicated that having a personal doctor is associated with fewer unhealthy days per month, $b = -.78$, 95%CI=(-.98,-.59), $P < .001$. Moderator analyses suggest that having a personal doctor may ameliorate disparities in unhealthy days based on socioeconomic and other factors. Conclusions: Individuals who report having a personal doctor are less likely to report

fair or poor health and report fewer unhealthy days per month than those without a regular doctor. These effects remain significant when accounting for relevant covariates.

U3-Evaluating Quality of Primary Care: Mapping the Coverage of Attributes Among Validated Instruments

Levesque, Jean-Frederic, Institut Nationale de Santé Publique du Québec; Haggerty, Jeannie; Burge, Frederick; Béninguissé, Gervais; Gass, David; Beaulieu, Marie-Dominique; Pineault, Raynald; Santor, Darcy; Beaulieu, Christine

Context: Primary care is undergoing important changes in highly developed countries. Such important reforms require evaluation strategies to assess achievements of expectations of the population. Although various instruments of evaluation of primary healthcare (PHC) from the consumer perspective are available, they measure a variety of constructs. **Objective:** To analyze the coverage of important attributes of PHC in validated instruments measuring quality of care from the consumer perspective. **Design:** Systematic identification of validated instruments from scientific literature and consultation of experts. Delphi consensus-building among Canadian multidisciplinary PHC experts to identify and define important attributes of PHC. Mapping of questionnaire subscales to operational definitions of PHC by one person, with independent validation by research team and resolution of conflict by PHC experts. **Setting:** Canada, 2004 **Participants:** Participation of 20 experts in the Delphi process. **Results:** Among the 24 operational definitions of attributes of PHC identified, 13 were evaluated as being best measured from patients, 10 from providers, 3 from administrative databases and 1 from chart audits (some attributes being best measured by more than one source). The validated questionnaire search gathered 17 measurement tools containing 118 subscales. After elimination of redundancy, 13 unique measurement tools were mapped to attributes of PHC. The concepts of accessibility, relational continuity, interpersonal communication, management continuity, respectfulness and technical quality of clinical care were the attributes widely covered by available instruments. There is poor coverage of advocacy, management of clinical information, comprehensiveness of services, cultural sensitivity, family-centered care, whole-person care and equity. **Conclusions:** The range of validated instruments to evaluate quality of PHC from the consumer perspective leaves many important attributes of PHC uncovered. Adjustment of existing tools and/or development of new evaluation instruments is necessary for a complete assessment of PHC quality.

U4-Use of Herbal Remedies Among Hispanic Patients: Are Physicians Informed?

Howell, Laura; Kochhar, Komal; Zollinger, Terrell; Koehler, Julie; Sutton, Brittany; Sevilla-Martir, Javier; Allen, Deborah; Saywell, Robert, Indiana University

Context: The use of herbal remedies has increased dramatically over the past 2 decades and differs widely across population groups. Ingesting herbs constitutes a potential for significant health risk due to adverse reactions from and interactions with prescribed medications. It is important to identify the prevalence of herb use in specific populations and to determine the extent of physician-patient communication surrounding herb use. **Objective:** This study measured knowledge and use of herbal remedies among Hispanics and assessed their experiences when discussing herb use with their physicians. **Design:** Self-administered English/Spanish language questionnaires. **Setting:** Urban health centers in a mid-western state. **Participants:** Convenience sample of 646 adult Hispanic patients. **Results:** Most (80.2%) reported using herbal remedies. Herb users, compared with non-users were more comfortable speaking Spanish (90.8% vs. 77.5%) and had been in the US less than five years (68.3% vs. 43.8%). More users considered herbs as drugs (59.4% vs. 37.5%). Users were more aware that herbs could harm a fetus (55.9% vs. 37.7%). At least one-half reported having used seven of the 25 herbs listed but less than one-half knew the English term for 22 of the herbs. Few (17.4%) responded that their physicians asked about their herb use. When asked what they tell their doctors about their herb use, one-sixth (15.2%) responded "I would tell my doctor about all the remedies that I use." Only 41.6% thought their physician would understand their herb use, 1.8% believed their physician would encourage continued use and 26.1% thought their doctor would ridicule them for using herbs. There were no significant differences between herb users and non-users in their perception of physician-patient communication. **Conclusion:** Primary care physicians need to be aware that their Hispanic patients may use herbs. It is important to initiate and encourage open, honest discussion of their patient's interest in and use of these therapies.

EDUCATION/TRAINING II (V1-V4)

JOSHUA TREE I

V1-Determining Achievement of Educational Objectives From Patient Encounter Data

Bardella, Inis, Indiana University; Zollinger, Terrell; Przybylski, Michael; Burba, Jennifer

Context: Medical schools use PDAs to collect patient encounter data for LCME accreditation. Clerkship directors desire methods to determine achievement of educational objectives, particularly in decentralized primary care community clerkships. PDA encounter data collection provides an opportunity to assess clerkship objective achievement. **Objective:** Determine the value of PDA

collected patient encounter data for assessing achievement of educational objectives. **Design:** Retrospective comparison of first and fourth week, and beginning and end of year patient encounter data using SAS to generate valid percents, t-tests, p-values. **Setting:** Decentralized, statewide, required, four week family medicine clerkship. **Participants:** 245 MS3 family medicine clerkship students 2004-2005. **Instrument:** PDA questionnaire with patient, student clinical activity, self-assessment items. **Outcome Measures:** Seven clinical activities; Level of participation, Competency self-assessment. **Results:** Comparing the first and fourth weeks, increases in student histories, physicals, seeing the patient before the preceptor, suggesting treatment, and education/counseling are statistically significant (all $p < 0.001$). No changes occur in identifying smokers and providing smoking counseling. Student observation and assistance decrease, while performance increases in clinical activities (all $P < 0.001$). When the first and final third of the year are compared, increases in student histories, physicals, seeing the patient before the preceptor, suggesting treatment, education/counseling, identifying smokers and smoking counseling are statistically significant (all $P < 0.001$). Student observation decreases and assistance increases (all $P < 0.001$). Clinical activity performance does not change. In both comparisons, self-assessed competence as confident increases while uncomfortable and marginal decrease (all $P < 0.001$). **Conclusions:** There are statistically significant changes in student clinical activities, participation and competency during the clerkship and the academic year. This supports achievement of the overall goal “develop and refine clinical skills.” Achievement of specific objectives in diagnoses and management, histories, physicals and patient education are supported. Identification of smokers and provision of counseling are variable. The current questionnaire does not permit determination of skill level.

V2-What Family Medicine Residents Think About Spirituality and Patient Care: A Qualitative Study
Anandarajah, Gowri, Brown Medical School/ Memorial Hospital of Rhode Island; Smith, Marcia; Roseman, Janet

Context: The last decade has seen increasing evidence for a positive association between spirituality and health. Although currently many medical school and residency curricula include education regarding this topic, there are few studies regarding beliefs and attitudes of learners. **Objectives:** To better understand the beliefs, attitudes, concerns and educational needs of family medicine residents regarding spirituality and patient care. **Design:** A qualitative study was conducted using semi-structured individual interviews, 30-45 minutes long, audio-taped and transcribed verbatim. IRB approval was obtained. **Setting:** A university affiliated family medicine residency in the Northeast United States. **Participants:** All 38 residents were invited to participate. 34 interviews were analyzed. 3 were lost due to

equipment failure. **Instrument:** An interview guide was developed. Residents were asked to comment on a broad range of topics including: educational needs; meaning of spirituality; role of the physician; personal beliefs, biases and barriers; reflections on compassion, healing and self-care strategies. **Analysis:** Independent coding and analysis was done by three investigators from different disciplines. A code list was developed based on interview questions and modified after pilot testing with nine interviews. All interviews were coded to facilitate data management. Analysis was done using the emergent crystallization method, both individually and in team meetings. **Results:** Despite tremendous diversity in personal beliefs, several consistent themes emerged. There was openness to the topic but a perceived lack of skills. The majority thought spirituality was important in whole person care. End-of-life experiences were particularly relevant in formation of attitudes and development of skills, as told with poignant patient stories. Time pressure and inadequate self-care were identified as barriers. **Conclusion:** Family medicine residents are receptive to integrating spirituality into whole person care. This study suggests directions for curriculum development including providing concrete skills, a focus on end-of-life and opportunities for self-care and reflection.

V3-Nurse Triage in Primary Care: What is the Role and the Future Potential?

White, Peter, Nightingale Surgery R&D

Context: Nurse triage is rapidly developing in the UK. This development has been largely uncontrolled. The development has been from a ‘sort’ culture to one of ‘sort and see.’ Currently there is no clear vision of the role and the way in which it should develop. **Objective:** To investigate the feelings and perceptions of both staff and patients about the role of nurse triage within primary care and identify potential issues for future development. **Design:** Mixed methodology. Initially focus groups using qualitative data and from the identified themes further quantitative work using a questionnaire. **Setting:** Two busy general practices in the south of England both of which had employed a triage nurse for 5 years. **Participants:** For the focus groups a sample of staff from each surgery and for the patients a mixed group some of whom had had ‘contact’ with and some ‘no contact’ with the triage service. The questionnaire was sent to all staff and 200 patients. **Outcome Measures:** Staff feel patients need to be ‘educated’ about the role, while patients are happy with it and find it enabling. Staff feel empowered by the presence of triage. The conditions which are acceptable to be seen are not completely clear, patients feeling that a doctor has to be involved in diagnosis, yet they are happy for the nurse to prescribe. The training and character of the person involved is key to the role. While triage reduces some face to face contact it appears to result in more complex work being undertaken by the doctors. It is unclear who should have the control of the role and of its development, whether it should be centrally or locally ‘owned.’ The name triage is inappropriate for general practice.

Results: Quantitative work was only powered for descriptive data only. All the trends including percentages etc will be presented. **Conclusion:** Triage is a rapidly growing service in primary care. Currently there is no formal control of that development. This has resulted in confusion about the role and how it should develop. This work has clarified some of the issues and the potential for the future.

V4-Patient Safety in After-hours Telephone Medicine

Killip, Shersten, University of Kentucky; Ireson, Carol; Love, Margaret; Fleming, Steven; Katirai, Whitney; McLay, Carol

Context: Responding to national concern over patient safety issues, this pilot project analyzed the after-hours telephone medicine systems at an academic health center from a patient safety perspective. **Objectives:** To discover: 1) The threats to patient safety, defined as potential adverse events (PAEs) or adverse events (AEs), associated with after-hours telephone medicine and 2) The kinds of errors made during after-hours telephone medicine. **Design:** Pilot descriptive survey. **Setting:** University of Kentucky Family Medicine Residency. **Patients:** Subjects were patients at the University of Kentucky family medicine practice who called in to the after-hours answering service from November 2004 to February 2005. **Instrument:** Telephone interviews were conducted with 64 patients over 10 weeks. During the interviews, patients described their telephone medicine experience indicating whether they believed there were any problems and whether they believed they were or could have been harmed (patient-identified PAEs/AEs). As medical experts, two registered nurses and one physician also analyzed the patient narratives to identify threats to patient safety (medical-expert-identified PAEs/AEs). **Outcome Measures:** Main: Patient-identified PAEs/AEs and Medical-expert-identified PAEs/AEs. Secondary: Identification of PAEs/AEs as Near Misses, Patient Errors, or Medical Errors. **Results:** Sixty-three analyzable patient interviews identified three adverse events (5%) which resulted in temporary physical harm. Two separate after-hours calls (3%) involved four medical errors as the cause for potential adverse events with potentially serious consequences to patient safety (wrong dose, serious illness not ruled out). Thirteen calls (21%) involved potential adverse events that could have threatened patient safety. **Conclusions:** Situations that threaten patient safety occur frequently in telephone medicine. Although this pilot study is too small to draw strong conclusions, it supports the need for a larger, follow-up study.

EPIDEMIOLOGY II (W1-W4)

JOSHUA TREE II

W1-Risk of Colorectal Cancer in Patients Taking Statins and Non-steroidal Anti-inflammatory Medication: Nested Case Control Study

Vinogradova, Yana, University of Nottingham; Hippisley-Cox, Julia; Coupland, Carol; Logan, Richard

Context: Statins are widely used because of their proven benefits in heart disease. Several studies have suggested that statins might also benefit some cancers, with one study finding a 47% reduction in risk of colorectal cancer with 5 years or more of regular use. **Objective:** To determine colorectal cancer risk in patients taking statins using a large population-based general practice database. **Design:** Nested case-control study. **Setting:** 454 United Kingdom general practices registered with the QRESEARCH database. **Patients:** 5,686 cases with colorectal cancer diagnosed between 1995 and 2005, matched with up to 5 controls by age, sex, practice and calendar year. Each participant had a minimum of 4 years of complete prescription information prior to case diagnosis date. **Exposure:** Use of statins, NSAIDs, COX2-antagonists and aspirin. **Outcome Measure:** Diagnosis of colorectal cancer. **Instrument:** The effect of medications on colorectal cancer was estimated with conditional multiple logistic regression. All odds ratios (OR) were adjusted for possible confounding effects of morbidity, smoking status, body mass index and deprivation. **Results:** The OR for any statin prescription was 0.91 (95% CI 0.82-1.02) with risk lowest for a single script (OR 0.67, 0.46 -0.98) and highest for 25+ scripts (OR 1.06, 0.86 -1.31). For any NSAID prescription the OR was 0.94 (95% CI 0.89-1.0) with risk decreasing with increasing prescribing (OR for 25+ scripts 0.76, 0.61-0.96) and the trend for number of scripts significant (P=0.001). There was little prolonged use of COX2-antagonists but for those receiving 25+ scripts the OR was 0.35 (95% CI 0.14 -0.86). Prescribed aspirin had no significant effect. **Conclusions:** This is one of the largest case-control studies examining the effect of statins on the development of colorectal cancer. It has been found that, while prolonged use of NSAID and Cox 2 appeared to be associated with reduced colorectal cancer risk, prolonged statin use was not.

W2-Physicians' Unanswered Questions About Patient Care

Ely, John, University of Iowa; Osheroff, Jerome; Maviglia, Saverio; Rosenbaum, Marcy

Context: Physicians cannot find answers to many of their patient-care questions. Unanswered questions can lead to failings in patient safety and cost effectiveness. **Objective:** To describe the characteristics of unanswered questions. **Design:** The investigators visited 48 physicians in their offices and recorded 1062 questions that arose during patient care. The investigators used qualitative methods to describe the generic types of questions that physicians pursued but failed to

answer. **Setting:** Community physicians in Iowa. **Participants:** Forty-eight primary care physicians. **Results:** Physicians pursued but could not find answers to 237 (22%) of the 1062 questions. The unanswered questions were grouped into 17 generic types. Three types accounted for 132 (56%) of the unanswered questions: (1) “Constrained”: A question limited (constrained) to a specific patient population. For example, “What are screening mammogram guidelines for women with a family history of breast cancer?” Often there is a lack of evidence that addresses screening in high-risk populations. (2) “Undiagnosed finding”: A question about an undiagnosed symptom, physical finding, or test result. For example, “What would cause a metallic taste?” Findings can be difficult to address because they are often nebulous and ill-defined. (3) “Compound”: A question that combines two straightforward questions. For example, “Is Benadryl indicated to treat trichotillomania?” (compound) Not, “What are the indications for Benadryl?” (straightforward) And not, “What is the treatment for trichotillomania?” (straightforward). Compound questions are rarely addressed directly, so the answer must be inferred from an answer to one of the straightforward questions (eg, a list of indications or treatments). When the item of interest is missing from the list, it is not clear whether the answer is “no” or the list is incomplete. **Conclusions:** Unanswered questions can be grouped into generic types, which could serve as a basis for developing information resources that are more useful for clinicians.

W3-At Risk for and Overweight Prevalence Rates of African-American and Hispanic Children: An Analysis of 2003 National Survey of Children's Health (NSCH) Data

Lutfiyya, May Nawal, University of Illinois; Young, Teriya; Garcia, Rosemary

Context: Evidence suggests that the increase in rates of overweight children across the US are not equal across all races and ethnicities. African-American and Hispanic children are considered to be high risk populations for this health concern. **Objective:** Factors contributing to overweight in African-American and Hispanic school-aged (5-18 years) children were explored. Findings from this study can be used to develop prevention and intervention strategies targeting African-American and Hispanic children. **Design:** Univariate, bivariate and multivariate analyses were performed on 2003 cross-sectional NSCH data. Gender and age specific BMI percentiles were used to measure at-risk for and overweight in the child populations examined. **Setting:** US households. **Participants:** Parents of African-American and Hispanic school-aged children. **Outcome Measures:** Overweight or at risk for overweight was the dependent variable for this study. The independent covariates included demographic variables, television viewing hours, hours of non-school computer use, physical

activity, and sports team participation. **Results:** Multivariate analysis yielded that overweight African-American and Hispanic school-aged children were more likely to: be male (OR 1.171), not getting recommended levels of at least moderate physical activity (OR 1.140) and not participating on a sports team (OR 1.077). These same children were less likely to be Hispanic rather than African-American (OR .728), live in households with incomes < rather than > 150% FPL (OR .993), have gotten preventive medical care in the past 12 months (OR .893), using a computer 2 or fewer rather than 3 or more hours per day for non-school projects (OR .729), and watching TV 2 or fewer rather than 3 or more hours per day (OR .990). **Conclusions:** Since the population of children examined was less likely to receive preventive health care, interventions should target other arenas such as schools where prevention/intervention can be focused.

W4-Prevention of Chronic Kidney Disease Progression in a Primary Care Population

Jones, Jacob, Virginia Commonwealth University

Context: Prevention of chronic kidney disease (CKD) progression depends on clinical practices optimized to slow decline in glomerular filtration rate (GFR). The predictors of longitudinal CKD stage progression in our practice have not been studied. **Objectives:** (1) Determine CKD stage prevalence, then (2) measure the effect of strict systolic blood pressure (SBP) control and angiotensin converting enzyme inhibitor (ACEI) prescription on longitudinal CKD stage progression. **Design:** Cohort. **Setting:** Academic family practice. Population: 1450 patients with hypertension, diabetes, or renal disease managed 1997 - 2004. **Outcome Measures:** Longitudinal CKD stage by quadratic GFR estimation (using serum creatinine, age, sex) and proteinuria (microalbuminuria [diabetes] or albuminuria $\geq 1+$). **Results:** At study end, 37% of patients had no evidence of CKD, 44% mild CKD (stages 1 or 2), 14% moderate CKD (stage 3), and 5% severe CKD (stages 4 or 5). Although patients had 7.8 mean creatinine measures over 4.4 mean years, 18% (120/676) with GFR ≥ 90 mL/min/1.73m² had no proteinuria measurement to detect early renal injury. Overall 145 (10%) patients progressed one CKD stage and 118 (8%) progressed ≥ 2 stages. Proteinuria (adjusted logistic odds ratio [OR] 4.6 [95% confidence interval 1.7, 12.7]) and SBP ≥ 140 (OR 1.6 [1.0, 2.4]) were associated with ≥ 2 stage progression while ACEI prescription prevented progression (OR 0.25 [0.1, 0.9]). Final ACEI prevalence was 77% among 231 patients with proteinuria and 70% overall; 641 (44%) patients had final mean SBP ≥ 140 mm Hg and 47% of these required ≥ 3 anti-hypertensives. Among 534 patients starting ACEI, only SBP ≥ 140 mm Hg (OR 1.4 [1.1, 1.7]), not proteinuria, diabetes, nor CKD stage, predicted ACEI initiation. **Conclusions:** Stricter systolic blood pressure control and more comprehensive proteinuria detection and management are needed to prevent CKD stage progression in this population.

MEDICAL INFORMATICS II (X1-X4)

CANYON SUITE I

X1-Effect of EMR Use on the Clinical Encounter: A Qualitative Study of an EMR Implementation

Borkan, Jeffrey; Anthony, David, Memorial Hospital of Rhode Island; Shield, Renée; Wang, Nina; Doyle, Richard; Goldman, Roberta

Context: The use of electronic medical records (EMR's) during clinical encounters is promoted by groups such as the Future of Family medicine Project. Despite their widespread implementation, the effect of EMR's on clinical care remains understudied. **Objectives:** To determine the effect of the use of an EMR on basic processes and the qualities of physician-patient communication during clinical encounters. **Design:** Direct observations of clinical encounters by an anthropologist over an 18-month transition to use of an EMR. Observations included both specific measurements (eg times) and the qualitative assessment of physician-patient communication and of the role of the documentation process on the encounter (measured by visual analog scale from 0 - 'no effect' - to 100 - 'dominant'). **Setting:** A large academic residency/faculty family medicine practice. **Participants:** 13 residents and 13 faculty were observed during encounters with 110 adult, English-speaking patients. **Results:** The amount of physician time spent in the room was similar between visits using the EMR and paper charts (median times 16.7 vs. 18.5 minutes respectively). Physicians using the EMR spent less time out of the room (0.9 vs. 4 minutes) and had fewer episodes of leaving the room (mean 0.55 vs. 0.66) than those using paper charts. During encounters, physicians using the EMR spent more time inputting or retrieving data in the patient record than those using paper charts (4.1 vs. 2.0 minutes). The focus of the interaction was between the physician and patient in almost every encounter, but the role of the documentation process during the visit was greater for visits using the EMR than for paper charts (36.9 vs. 22.9 units of the VAS). **Conclusions:** The findings suggest that EMR's play a more significant role during clinical encounters than do paper charts, and that their use may have both positive and negative effects on clinical encounters.

X2-Introducing and Using Telehealthcare Services in Practice: Lessons From a Longitudinal Qualitative Study of Teledermatology Services

Finch, Tracy; May, Carl; Mair, Frances, University of Glasgow

Context: Policy makers and clinicians have shown increasing interest in the potential for telehealthcare particularly to promote care in the community. Previous research suggests fundamental problems in integrating telehealthcare systems of professional practice in everyday service settings. Teledermatology is one of the first specialist applications of telehealthcare to have developed,

and provides a useful case study with implications for how telehealthcare may be used to innovate practice within primary care. **Objectives:** To identify factors that promote successful telehealthcare utilization within medicine using a longitudinal study of teledermatology as an exemplar. **Design:** Longitudinal qualitative study employing a combination of research techniques to obtain data from a variety of sources, including: in-depth semi-structured interviews; observations of systems in practice; and public meetings. **Setting and Participants:** Teledermatology services within the UK (n=11), studied over 7 years (1997 – 2004). Individual participants (n=68) were consultant dermatologists, researchers, teledermatology nurses, administrators, patient advocates, primary care physicians and technologists. **Results:** Key problems that must be understood and managed in order to successfully use and integrate telehealthcare services as exemplified by this study include: the policy background; perceived benefit and relative commitment; effort expended on evidence gathering particularly to prove utility and safety; risk management by health care professionals; the need for individual, organizational and technological flexibility; the necessity of associated service reorganization/reconfiguration; and issues surrounding professional roles and boundary crossing. Telehealthcare services are more likely to be successfully introduced where the technology is understood as embedded in the social practices of health care rather than as a technological fix for existing challenges in health care delivery, and where the perceived benefits of new services outweigh the effort and commitment required to make them work. **Conclusions:** A key issue for successful implementation of telehealthcare services is that of greater understanding of the interplay between social and technical aspects.

X3-Patient Attitudes Toward Physician Use of Tablet Computers in the Exam Room

Strayer, Scott, University of Virginia; Semler, Mathew; Kington, Marit

Context: There is mounting support for increasing Health Information Technology (HIT) use in the United States health care system to improve quality, efficiency and safety. Unfortunately, there is little data on the most effective and efficient HIT systems, best methods for implementation and patient/provider attitudes towards these technologies. **Objective:** To determine patient attitudes toward physician use of tablet computers in the exam room and determine if these attitudes are influenced by age, gender, race, ethnicity and income. **Design:** Survey given to a random sample of patients immediately following a clinic visit. **Setting:** Outpatient family medicine clinic in a large academic medical center in central Virginia. **Participants:** Ninety-six patients randomly selected. Exclusions included visits with nurse practitioners or first-year residents. Average age was 46, 39% were male and 40% were minorities. **Instrument:** Previously validated survey on patient attitudes towards technology use in the exam room. **Results:** The response rate was 97%. Survey results showed

uniformly positive patient perceptions of the tablets regardless of age, gender, race, ethnicity and income. Less than 5% of patients stated that they did not like the idea of a doctor with a tablet computer and only 2.1% stated that doctors who care about their patients would not want a tablet computer in their office. Moreover, 100% of the patients stated that they would not mind if the physician used the tablet computer during their next visit. Patients did not perceive tablet use in the examining room as depersonalizing the doctor patient relationship, decreasing the efficiency of the clinic, or increasing the likelihood of mistakes. **Conclusions:** Tablet computers used by physicians in the examining room are perceived positively by most patients. These devices hold promise for deploying HIT applications in primary care settings with diverse patient populations.

X4-A Primary Care Cardiovascular Risk Reduction Clinic Is More Effective and No More Expensive: A Randomized Controlled Trial

Mills, Michael, Caroline Medical Group

Objective: To compare the effects and expense of three approaches to care for people with cardiovascular risk factors in primary care. **Design:** Randomized controlled trial. Prospective economic evaluation. **Setting:** Primary care, Health Service Organization. **Participants:** Consenting patients with an identified cardiovascular disease (CVD) risk factor (n= 634). Patients were excluded if they were mentally incompetent, <18 years of age, in a nursing home, or were non-English speaking. Patients were randomized to: 1) a proactive cardiovascular risk reduction (CaRR) clinic; 2) nurse telephone calls; or 3) usual primary care. **Outcome Measures:** Cardiovascular Risk Score, Health and Social Service Utilization, Montgomery Asberg Depression Rating, Billings and Moos Indices of Coping, Personal Resource and Self-Efficacy Questionnaires. **Results:** Cardiovascular risk scores improved in all treatment groups after 1 year. Patients with CVD in the CaRR clinic group showed the greatest percentage change in risk. LDL cholesterol (P=0.016), diastolic blood pressure (P=0.014) and Self Efficacy scores showed the greatest improvements in the CaRR group. Patients with CVD and low problem solving coping skills in the CaRR clinic benefited the most. There was no difference in total person per annum expenditures for direct and indirect health and social service utilization between all 3 groups. **Conclusion:** A Cardiovascular Risk Reduction Clinic in primary care is effective and no more expensive after 1 year compared to nurse phone intervention and usual care. Patients with low problem solving skills and CVD showed the most benefit. Longer follow up is required to see if CVD risk scores can be further reduced or sustained and further long term expenses can be averted with intensive management in primary care.

PRACTICE-BASED RESEARCH IV (Y1-Y4)

CANYON SUITE II

Y1-Test and Treat for Helicobacter Pylori V Acid Suppression Alone for Dyspepsia: The MRC-CUBE Randomized Controlled Trial

Delaney, Brendan, University of Birmingham; Qume, Michelle; Moayyedi, Paul; Logan, Richard; Hobbs, Richard; Wilson, Sue; Ford, Alex; Elliot, Cathy

Context: Recent guidelines from the USA, Canada and Europe have recommended either testing and treating for H.pylori or acid suppression as first line treatment for dyspepsia in Primary Care. A Cochrane review of RCTs have shown that test and treat is more cost-effective than endoscopy-based management. **Objective:** The MRC CUBE study aimed to determine whether test and treat is also cost-effective as first line management. **Design:** Individual patient RCT, managed using the MidReC-en e-Trials portal. **Participants:** Patients aged 18 and over with epigastric pain or heartburn were randomized. **Intervention:** A C13 Urea breath test for H.pylori, followed by eradication therapy if positive or no testing. All patients received omeprazole 20mg od for 4 weeks. **Outcome Measures:** Dyspepsia symptoms (Short Form Leeds Dyspepsia Questionnaire), Quality of Life (EQ-5D) and health resource utilization (costs). Outcomes were measured at baseline, 12 weeks and 52 weeks. A subgroup analysis was prespecified on predominant symptom at entry. **Results:** 699 subjects were recruited from 80 practices across England. 342 were male and the ages ranged from 18 to 65 with mean 41. Data were returned for 556 (80%), 558 (81%) and 666 (95%) for SF LDQ, EQ-5D and resource utilization respectively at 12 months. 331 subjects had predominant epigastric pain and 277 heartburn. The mean SF-LDQ scores changed from 15.5 and 17.0 to 6.8 and 8.6 (p <0.003 between groups randomized) for test and treat and acid suppression respectively at 12 months. In terms of being asymptomatic this is equivalent to a relative risk of 1.15 (n.s.) for being asymptomatic at 12 months. There was no difference in effect between patients with predominant heartburn or epigastric pain at entry. **Conclusions:** This large Primary Care-based RCT found a significant difference in dyspeptic symptoms in favor of initial 'test and treat' compared with acid suppression.

Y2-Recruiting Subjects in a Practice-based Research Network (PBRN): Lessons Learned

Calmbach, Walter, University of Texas Health Science Center San Antonio; Parchman, Michael; Romero, Raquel

Context: Subject recruitment is always challenging, but especially in a practice-based research network, where competing demands faced by busy practitioners may interfere with optimal recruitment plans. **Objectives:** The purpose of this report is to analyze the recruitment experience with a recent practice-based study and generate lessons learned that might inform recruitment efforts at other PBRN's. **Design:** Subjects were recruited to take part in a study designed to

reduce cardiovascular risk factors among patients with type II diabetes mellitus. **Setting:** Five primary care practices in the South Texas Ambulatory Research Network (STARNet). **Subjects:** Patients with type II diabetes mellitus cared for by their usual primary care physician.

Intervention: a variety of recruitment methods were used: letter from physician inviting patients to participate; flyers, posters, and brochures in each practice to develop patient interest; incentives for practice staff to recruit patients; after-hours phone line to handle patients queries; etc.

Outcome Measures: # of patients approached for participation in the study, # enrolled, # who completed baseline survey. **Results:** Fifty subjects were needed at each practice site. A total of 1169 letters from physicians were generated among the 5 clinics (mean number of letters = 233.8 per clinic site, range 125-374). Total time required to recruit 50 subjects per clinic was 10 months, significantly longer than the planned 6 months. Busy clinic staff often failed to hand out study flyers or brochures. In this study, incentives did not increase office staff recruitment of subjects. **Conclusions:** Subject recruitment in the busy primary care setting is difficult, and success requires a coordinated multiphasic plan. Successful strategies in this study included: multiple personal letters from the primary care physician inviting patients to participate in the study, organized onsite recruitment of eligible patients, and staff training on recruitment and handling common patient queries.

Y3-Strategies to Accelerate Translation of Research Into Practice for Primary Care Staff

Nemeth, Lynne, Medical University of South Carolina; Wessell, Andrea; Feifer, Chris; Liszka, Heather; Jenkins, Ruth; Nietert, Paul; Roylance, Loraine; Ornstein, Steven

Context: Translational research is an important component of the primary care research agenda. Practice Partner Research Network (PPRNet) conducted a multi-method demonstration project to increase practice adherence to clinical practice guidelines in 100 primary care practices.

Objective: Identify the specific strategies used by clinicians and practice staff members to improve performance on 84 clinical indicators across 8 conditions. **Design:** Qualitative descriptive analysis of an evaluation survey completed by research team site visitors, to assess adoption of the PPRNet-TRIP model for improvement. The survey was created in Microsoft Access; data were exported into QSR NVivo software to facilitate identification of the most common strategies used by practices. **Setting/Participants:** 65 primary care practices located throughout all regions of the US that hosted site visits during the 4 year Accelerating Translation of Research into Practice (ATRIP) demonstration project. **Outcome Measures:** Specific interventions utilized by practices to implement the guidelines. **Results:** A compendium lists 46 specific strategies practices used, organized within five domains of

the PPRNet-TRIP model for improvement. The strategies include practice specific changes (eg, quality coordination, focused efforts, regular staff meetings for decision-making), provider-driven changes (eg, form care management teams, use protocols for visits and follow-up, templates within the electronic medical record, provide patient with specific disease management goals) and staff role changes (eg, develop and use consistent staff messages, update medication lists, use templates for health maintenance and screening, standardize blood pressure measurement). **Conclusions:** Primary care practices used multiple strategies for improvement as they incorporated clinical guidelines for screening and treatment of cardiovascular disease, diabetes, cancer, respiratory illness, adult immunizations, mental health, nutrition, and safe prescribing in the elderly. Practices varied as they implemented these changes based upon specific practice level priorities within their local context.

Y4-The Trial of Infant Response to Diphenhydramine: The TIRED Study, a Randomized Controlled Patient Oriented Trial

Merenstein, Dan, Georgetown University

Context: Diphenhydramine is commonly used to assist infants under age 2 in improving nighttime sleeping but there is no evidence for its effectiveness. **Objective:** To determine if infants aged 6 to 15 months with frequent parent-reported nighttime awakenings require reduced parental aid during a week of diphenhydramine treatment, and 2 and 4 weeks after its discontinuation. **Design:** Double-blinded randomized controlled clinical trial. **Setting:** The study was conducted from May 2004 to May 2005, patients were recruited nationally. **Participants:** 44 participants between the ages of 6-15 months. **Interventions:** After a 7-day observation period, placebo or diphenhydramine were given to infants at a dose of 1mg/kg thirty minutes prior to anticipated bedtime, for 7 consecutive nights. **Outcome Measures:** The primary outcome was dichotomous: a parental report of improvement in the number of night awakenings requiring parental assistance during the intervention week, which ended on day 14. **Results:** On June 6th, 2005, the DSMB voted unanimously to stop the trial early due to lack of effectiveness of diphenhydramine over placebo. Only 1 out of 22 children in the diphenhydramine showed improvement compared to 3 out of 22 in the placebo. In order to reach the a priori determined sample size and have a positive outcome, that is rejecting the null hypothesis, the trial would have needed to enroll 16 more participants in each arm, with 15 of the 16 in the diphenhydramine group improving and zero of 16 in the placebo group. **Conclusion:** During one week of therapy as well as in follow-up periods 2 and 4 weeks later, diphenhydramine was no more effective than placebo in reducing nighttime awakening or improving overall parental happiness with sleep for infants between six and fifteen months old suffering from frequent nighttime awakenings.

OBSTETRICS II (Z1-Z4)

CANYON SUITE III

Z1-Herbal Use Among Pregnant and Nursing Hispanic Patients: Are Physicians Informed?

Zollinger, Terrell, IUPUI Bowen Research Center; Saywell, Robert; Kochhar, Komal; Howell, Laura; Koelher, Julie; Sevilla, Javier

Context: The use of herbal remedies during pregnancy or breastfeeding can have significant consequences to the fetus and baby; thus, their use should be supervised by knowledgeable physicians. **Objectives:** To assess female Hispanic patients' knowledge about herbs; to examine patients' comfort levels with discussing their herbal use with their physicians; and, to determine the extent to which physicians inquire about their patients' herbal use. **Design:** Cross-sectional survey. **Setting:** Female Hispanic patients seeking treatment in urban health centers. **Patients:** Self-administered questionnaires were collected from 485 female Hispanic patients seeking treatment in urban health centers, of which 155 were herbal users. **Results:** Of the 155 herbal users, 97 were currently or had been pregnant. Of those, 40 had used herbal remedies during pregnancy, such as Cinnamon (Canela), Garlic (Ajo) and Chamomile (Manzanilla). About two-fifths began using herbal remedies when they became pregnant (42.1%) and when they were breastfeeding (38.5%). Over four-fifths (83.3%) indicated that their physician did not ask what herbal remedies they used during pregnancy. Of the 97 who were or had been pregnant, three-fourths (74.4%) reported they had breastfed their child. Of those, 27 responded they had used herbal remedies during breastfeeding. Almost all (88.9%) indicated that their physician did not ask what herbal remedies they used during breastfeeding. All indicated that these herbal remedies were either recommended by self or by some extended family member. Almost all (88.9%) responded that they gave their newborns herbal remedies. **Conclusion:** Most of the female Hispanic patients who were currently or had been pregnant and/or breastfeeding were likely to use herbal remedies; thus, it is important for primary care physicians to initiate and encourage an open and honest discussion of their patient's use of these herbal remedies.

Z2-A Survey of Nurses' Attitudes Toward Labor and Birth

Aparicio, Dulce, University of British Columbia; Hall, Wendy; Klein, Michael

Context: Our previous studies show a wide variations in birth attitudes between obstetricians, midwives and family physicians. As nurses play a central role in maternity care, it is important to survey their birth attitudes. **Objectives:** 1. Develop psychometrically valid/reliable maternity nursing questionnaire. 2. Examine nurses' attitudes towards labor/birth. **Design:** 1) Cross-sectional survey; 2) Qualitative content analysis of focus group expert nurses'

opinions about the questionnaire. **Setting:** British Columbia Women's Hospital (BCWH), 7,000 births/year (20% BC births); highest in Canada. **Participants:** Of 160 BCWH labor/delivery nurses, 72 questionnaires (45% response rate). Female; ages 23-61 (M=36.19, SD=10.16). **Instrument:** Questionnaire contained 70 items: 15 demographic/personal, 55 attitude/belief statements employing 5-point Likert scale: 1 strongly disagree to 5 strongly agree. Items based on relevant research, theory and practice-based knowledge. **Results:** Nurses strongly disagree/disagree with a history of sexual abuse not impacting birth (98.6%), maternally requested elective cesarean section (C/S) (57.7%), elective C/S better choice for previous C/S patient (70.8%), continuous external instead of intermittent fetal monitoring (91.7%), performing episiotomies routinely (93.1%), routinely collecting cord gases (79.2%) and that interprofessional power struggles are no longer an issue (85.9%). Nurses agree/strongly agree with women's confidence as influencing successful births (62.5%), care provider delaying requested epidurals as disrespectful (65.3%) and developing birth plans (65.3%). Nurses were neutral regarding homebirth safety (25%), oxytocin decreases C/S for dystocia (30.6%), obligatory consultation with second physician regarding C/S (32%) and doulas' abilities to improve maternal/newborn outcomes (31%). Qualitative data identified seven themes describing nurses' opinions of the questionnaire. One recurrent theme related to discomfort with questions that many nurses felt were outside their scope of practice. **Conclusion:** Nurses have strong attitudes/beliefs towards birth interventions. Nurses identified certain questions as problematic or outside their scope of practice. Hence, the questionnaire will be modified for a national study comparing provider attitudes/beliefs.

Z3-Trial of Labor After Cesarean Policies in Oregon

King, Valerie, Oregon Health & Science University; Rdesinski, Rebecca; Ong, Emerson

Context: The American College of Obstetrics and Gynecology (ACOG) and the American Academy of Family Physicians recommend that most women with a history of a previous cesarean birth be offered a trial of labor after cesarean (TOLAC). ACOG's 1999 Technical Bulletin recommended that TOLAC be limited to facilities where surgical intervention was "immediately available." **Objective:** To quantify the influence of ACOG's "immediately available" recommendation on TOLAC policies in Oregon facilities. **Design:** Cross-sectional telephone survey. **Setting:** State of Oregon. **Participants:** Key informants at acute care hospitals (n=57) and state licensed birth centers (n=5). **Instrument:** Standardized data collection form with closed and open-ended questions about hospital demographics, types of obstetrical services provided, numbers of deliveries and TOLAC policies. **Results:** 52 Oregon hospitals and 5 licensed birth centers provide obstetrical delivery services. All 52 hospitals providing deliveries also provide cesarean deliveries. 63% of hospitals in Oregon serve rural communities and the median

numbers of hospital beds, miles to closest hospital offering delivery services, and both vaginal and cesarean deliveries differed significantly between rural and urban hospitals. Seven of 32 rural hospitals and 15 of 20 urban hospitals offer TOLAC ($p < 0.0001$). Five of 6 birth centers provide TOLAC. Most hospitals made some policy change in response to the “immediately available” recommendation while most birth centers did not. Changes included requiring the surgical team to be in the hospital and credentialing only obstetrician-gynecologists to attend TOLAC deliveries. The most common change made by rural hospitals was to stop providing TOLAC services altogether with 77% of rural hospitals stopping compared with 29% of urban hospitals ($P=0.001$). **Conclusions:** Most rural Oregon women with a prior cesarean delivery do not have the option of TOLAC in their own communities. Further research is needed about the impact and appropriateness of hospital TOLAC policies, particularly for rural women.

Z4-Web Access to Personalized Versus General Pregnancy Information: A Randomized Controlled Trial
Waters, Heather, McMaster University; Shaw, Elizabeth; Chan, David; David, Price; Zazulak, Joyce; Howard, Michelle; Kaczorowski, Janusz

Context: The Internet is often used to seek health information. During pregnancy, women are particularly motivated to learn about health issues affecting them and their infants. **Objectives:** 1) To assess the feasibility of a secure website to allow pregnant women access to their antenatal record; and 2) to compare the uptake of, and satisfaction with physician-recommended general pregnancy information sites (GI) versus personalized Pregnancy Information (PI) in addition to the general pregnancy information sites. **Design:** Two-arm parallel randomized trial. **Setting:** The Maternity Center (MC) of Hamilton, a family physician staffed multidisciplinary center providing prenatal and intrapartum care. **Patients:** 168 (96.6%) of 174 consecutive women presenting to the clinic for care before 28 weeks gestation consented to participate. **Intervention:** Women were randomized to two versions of a website designed by the MC: links for general pregnancy health information (GI, $n=84$) or with access to their own antenatal care planner (PI group, $n=84$). **Main Outcomes:** Frequency of use, satisfaction and perceived usefulness of the information. **Results:** 88.6% (149/168) of women delivered with the MC and 61.1% (91/149) completed a satisfaction survey. The mean number of logins was 10.9 ($SD=18.7$) in the PI group (88.6% being logins to their antenatal records) and 1.8 ($SD=1.3$) in the GI group ($p < 0.001$). Of the women who reported using the MC website, 80.6% (29/36) in the PI group and 65.0% (13/20) in the GI group strongly agreed that the information helped them make decisions ($P=0.20$), 81.6% (31/38) versus 66.7% (14/21) strongly agreed that they learned something new ($P=0.20$), and 50.0% (17/34) versus 26.3% (5/19) strongly

agreed that the site helped them remember appointments ($P=0.09$). **Conclusions:** Web-based medical information can be shared with patients who will use recommended resources on the web. Personal information via the web has much greater uptake than general pregnancy resources.

VULNERABLE POPULATIONS (AA1-AA4)
CANYON SUITE IV

AA1-Professional and Informal Interpreters' Perspective on Critical Encounters

Rosenberg, Ellen, McGill University; Leanza, Yvan; Seller, Robbyn

Context: The presence of interpreters in the health system requires adapted clinical interview practices. Existing literature favours the use of professional rather than informal interpreters. **Objective:** To understand interpreters' perceived roles, communication strategies and challenges in family medicine consultations. To compare professional and informal interpreters. **Design:** Qualitative study comparing the views of the three actors present during the clinical encounter (physician, patient, interpreter) and between the two categories of interpreters (professional and informal). **Instrument:** Observation of the clinical encounter and individual interviews using a videotape of the encounter for stimulated recall. **Setting:** Ambulatory primary care. **Participants:** 17 Interpreters: 8 professionals and 9 informal interpreters (8 family members and 1 friend), 13 family physicians and 25 adult patients. **Results:** Professional interpreters describe their central task as translation. All but one of the 8 translated all utterances even if the patient or the physician understood some of the other's language. When professionals know the patient and the physician for some time, most are happy to clarify the physician's perspective to the patient. When encouraged by the physician, most accept to convey the patient's perspective to the physician. All informal interpreters see themselves as caregivers for the patients in many environments. In the doctor's office and elsewhere, translation is only one of their caregiver tasks. They translate only when it serves a care giving function. One informal interpreter did not translate prognostic information to the patient believing it would upset him. When the patient has some skill with the physician's language, informal interpreters only translate physician utterances that the patient does not understand and contributions that the patient is unable to express in the physician's language. **Conclusion:** Professional interpreters and informal family interpreters play different roles.

AA2-Impact of Sociodemographic Characteristics, Health Insurance Status, and Geographic Location on Patients' Assessment of Their Physicians' Communication Skills

Wallace, Lorraine, University of Tennessee; Fryer, George; DeVoe, Jennifer; Weiss, Barry

Context: Many physicians communicate ineffectively and patients often have difficulty understanding what physicians

tell them. **Objective:** To examine the association of adults' sociodemographic characteristics, health insurance status, and geographic location (urban-rural, census region) with their assessment of their physicians' communication skills. **Design:** Retrospective analysis of the 2002 Medical Expenditure Panel Survey (MEPS). **Setting/Participants:** Civilian non-institutionalized US population aged ≥18 years. **Outcome Measures:** Two items from the MEPS, both of which used a 4-point Likert-type scale, were employed to assess adults' ratings of their physicians' communication skills ("Did your doctor listen to you?" and "Did your doctor explain things so that you understood?"). Responses to these two items were dichotomized as either "always" or "not always" and used as dependent variables in a logistic regression analysis; sociodemographic, health insurance, and geographic variables were used as independent variables. **Results:** 55% of participants reported that their doctor "always" listened to them, while 57% reported that their doctor "always" explained things so that they understood. When compared with adults aged ≥65 years, those aged 18-24 years were less likely to report that their doctor "always" listened to them (OR=0.65, 95% CI 0.57-0.75) and explained things so that they understood (OR=0.85, 95% CI 0.74-0.97). Those with public health insurance were more likely to report that their doctor "always" listened to them (OR=1.22, 95% CI 1.04-1.42) and explained things so that they understood (OR=1.21, 95% CI 1.03-1.42) as compared to uninsured adults. When compared to adults reporting no usual source of care (USC), adults with a USC were more likely to report that their doctor "always" listened to them (OR=1.31, 95% CI 1.16-1.48) and explained things so that they understood (OR=1.26, 95% CI 1.13-1.41). **Conclusion:** Younger adults, the uninsured, and those without a USC are less likely to report positive communication and interactions with their physician.

AA3-The Association of Family Continuity With Infant Health Care Quality

Clark, Elizabeth, University of Iowa; Saultz, John; Buckley, David; Rdesinski, Rebecca; Gill, James

Context: Continuity of care is a fundamental component of family medicine that has been shown to improve health care quality. Family continuity—when different family members are seen by the same clinician or practice—has not been well studied. **Objective:** To study whether family continuity is associated with improved health-care quality in infants as measured by increased well-child visits (WCV), reduced emergency department (ED) visits, and reduced hospitalizations in the first 13 months of life. **Design:** Retrospective cohort study using administrative data. Multivariate analyses controlled for mother's age, baby's gender, race, and county of residence. **Setting:** Medicaid enrollees in Oregon. **Patients:** 1591 infants continuously enrolled in Oregon Medicaid for the first 13 months of life

whose mothers were also continuously enrolled in Oregon Medicaid. **Outcome Measures:** Outcomes included WCV, ED visits, and hospitalizations in the first 13 months of life. Family continuity, the predictor variable, was defined as present when an infant received well-baby care and the mother received prenatal care at the same clinic. **Results:** Infants were predominantly Caucasian (68.3%), male (51.7%), and urban (67.6%). Mothers were on average 25.2 years of age (SD 5.904). Infants had a mean of 4.55 WCVs, 1.23 ED visits, and 0.17 hospitalizations. Fewer than half (47.1%) of infants had family continuity. Multivariate analyses found that infants with family continuity had an increased number of WCV (RR 1.05, P=0.041), an increased number of ED visits (RR 1.36, p <0.0001) and no difference in the number of hospitalizations (RR 0.85, P=0.282) when compared to infants without family continuity. **Conclusions:** Family continuity, when measured at the clinic level, is associated with a variable effect on the quality of infant health care and a significant change in health care utilization.

AA4-Understanding Help Seeking Behavior Among Custody Leavers

Howerton, Amanda, University of Exeter; Byng, Richard; Campbell, John; Hess, David

Context: Males are among those least likely to seek help from healthcare professionals, even when experiencing severe levels of distress (Biddle, Gunnell, Sharp, & Donovan, 2004). This may be particularly true for males involved in the criminal justice system; that is, for those who are or have been incarcerated. Despite findings that point to the higher rate of mental health problems among those involved in the criminal justice system, (ONS 2003) there are no known studies that focus specifically on the help-seeking behavior of those in this group. We propose to fill this gap in the literature, focusing on male prison-leavers' mental health needs, their experiences in the weeks after release and aiming to identify what factors influence their help seeking behavior. **Objective:** In this paper our primary objective was to determine the factors that influenced help seeking behavior among male custody leavers, both to inform the development of health and social care services and to improve mental health care for this group. **Design:** This study employed a qualitative design involving thirty five in-depth interviews with male prisoners immediately prior to, and shortly after release from prison. Data was analyzed thematically using a grounded theory approach. **Results:** The majority of respondents in this study said that they would not seek help from a general practitioner or other health care professional if experiencing mental distress. Many participants were hesitant to seek help because they feared a formal diagnosis of mental illness. Some of these individuals feared the stigma that such a diagnosis would bring, whereas others feared that a diagnosis would mean having to confront the problem. Overall, trust was most critical factor that seemed to play a role in the decision to seek help. In general, respondents do not feel that health

professionals want to, care about, or can help patients with mental health problems. Again, for the few respondents who remarked that they would turn to a GP or other health care professional for mental distress, trust seemed to play a role. Awareness training for all health care professionals is recommended.

Tuesday, October 17

Concurrent Paper Sessions

2 – 3:45 pm

EXTENDED PAPER PRESENTATIONS (BB1-BB2)

CORONADO I

BB1-Literacy Education as Treatment for Depression in Patients With Limited Literacy and Depression: A Randomized Controlled Trial

Weiss, Barry, University of Arizona; Francis, Laurie; Senf, Janet; Heist, Kim; Hargraves, Rie

Context: Individuals with limited literacy and those with depression share many characteristics, including low self esteem, feelings of worthlessness, and shame. Objective: To determine if literacy education, provided along with standard depression treatment to adults with depression and limited literacy, would result in greater improvement in depression than would standard depression treatment alone. Design: Randomized clinical trial with patients assigned either to an intervention group that received standard depression treatment plus literacy education, or a control group that received only standard depression treatment. Setting: Community health center. Participants: Adult patients who tested positive for depression using the 9-question Patient Health Questionnaire (PHQ-9) and who also had limited literacy based on the Rapid Estimate of Adult Literacy in Medicine (REALM). Outcome Measures: Depression severity was assessed with PHQ-9 scores at baseline and at three follow-up evaluations that took place up to one year after study enrollment. Changes in PHQ-9 scores between baseline and follow-up evaluations were compared between the intervention and control groups. Results: Median PHQ-9 scores were similar in both the intervention and control groups at baseline (12.5 and 14, respectively). PHQ-9 scores improved in both groups, but the improvement was significantly larger in the intervention group. Final follow-up PHQ-9 scores fell to 6 in the intervention group but only to 10 in the control group. Conclusions: There may be benefit to assessing literacy skills of patients who are depressed, and recommending that patients with both depression and limited literacy consider enrolling in adult education classes as an adjuvant treatment for depression.

BB2-The Competing Impact of Excess Weight and Cardiorespiratory Fitness on Cardiovascular Risk

Diaz, Vanessa, Medical University of South Carolina; Player, Marty; Mainous, Arch; Carek, Peter; Geesey, Mark

Context: Obesity is an independent risk factor for cardiovascular disease (CVD), while high cardiorespiratory fitness (CRF) is cardioprotective. The combined impact of these factors on cardiovascular risk is unclear, which complicates primary care counseling regarding weight and fitness. Objective: To evaluate how weight and fitness combinations impact biomarkers of CVD risk. Design: Cross-sectional analysis of the National Health and Nutrition Examination Survey 1999-2002. Setting: United States general population. Participants: Nationally representative sample of 2112 adults (20-49 years, body mass index (BMI) > 18.5 kg/m²) without previously diagnosed CVD who underwent submaximal graded exercise treadmill testing to calculate estimated maximal oxygen consumption (VO₂ max). Outcome Measures: CRF levels were assigned using age and gender specific reference points of VO₂ max developed in the Aerobics Center Longitudinal Study. CRF level was also categorized using sample specific VO₂max tertiles. Individuals were categorized as normal, overweight or obese by BMI. Fasting insulin (FI) >12.2 mU/L, C-Reactive Protein (CRP) > 3.0 mg/L and Total Cholesterol/HDL ratio (TC/HDL) >5 were used as biomarkers of elevated cardiovascular risk. Results: Lower CRF and higher BMI were independently associated with elevated FI and CRP (p <0.05). When individuals with low, moderate and high CRF were further stratified into normal, overweight and obese categories, weight categories remained significantly associated with elevated FI, CRP and TC/HDL (P<0.001), but CRF did not. Logistic regressions evaluating elevated FI, CRP and TC/HDL demonstrated no significant differences in overweight/obese individuals by CRF level after adjustment for other factors. Significant differences were present between normal weight and overweight or obese individuals. Analyses using tertiles of CRF yielded similar results. Conclusions: This study demonstrates that individuals who are “fat but fit” require weight loss interventions to improve their cardiovascular risk profiles. Future cardiovascular health promotion interventions should continue to emphasize weight control even for those with high cardiorespiratory fitness.

CANCER RESEARCH I (CC1-CC7)

CORONADO II

CC1-Delayed Cancer Diagnosis in Young Adults

Miedema, Baukje (Bo), Dalhousie University; Easley, Julie; Hamilton, Ryan

Context: Cancer studies tend to focus on older adults or children; hence young adults with cancer are often an overlooked group in the literature, despite the fact that they face unique issues. Objective: To examine the experiences of young adults with cancer. Design: A qualitative study. A total

of 15 interviews with 6 male and 9 female cancer survivors between the ages of 20 and 43 were conducted. The interviews were guided by open-ended questions and lasted between 1 to 2 hours. Setting: New Brunswick, a rural Eastern Canadian province. Participants: Young adults diagnosed with cancer between the ages of 20 and 35 regardless of the type of cancer and the stage of the illness. Results: The most important clinical issue that emerged from the analysis was that participants' age contributed to a delay in diagnosis and subsequent treatment. Both physicians and participants contributed to this delay. Participants' attributed their often non-specific symptoms to lifestyle issues such as too much alcohol intake or too much partying while others tried to ignore persistent symptoms and postponed seeking help (even though they had feelings of foreboding). On the other hand, physicians frequently interpreted non-specific symptoms as resulting, also, from lifestyle issues while others indicated that the cause of the symptoms could not be cancer, because the patients did not fit the traditional disease profile, particular the for the variable age. Conclusion: Cancer symptoms are easily excused away by both patients and physicians due to (young) age. This delay may or may not have an adverse impact on the final disease outcome. However, the delay does increase patient stress tremendously and the raises the issue of "What if?" Clinicians should ensure proper follow-up care when young adults present with non-specific symptoms. Age is not always a protective factor against a cancer diagnosis.

CC2-Symptom Management With Massage and Acupuncture in Post-operative Cancer Patients

Mehling, Wolf, University of California, San Francisco; Jacobs, Bradly; Acree, Michael; Bostrom, Alan; Wilson, Leslie; West, Jeremy; Acquah, Josef; Burns, Beverly; Chapman, Jnani; Hecht, Frederick

Context: the level of evidence for the use of acupuncture and massage for the management of perioperative symptoms in cancer patients is encouraging but inconclusive. Family physicians attend hospitalized cancer patients. Objective: to assess the effect of massage and acupuncture added to usual care versus usual care alone in post-operative cancer patients. Design: randomized, controlled trial; 2:1 randomization after baseline visit on post-operative day 1. Setting: hospital care. Patients: 150 of 180 consecutively approached cancer patients at pre-operative clinic visit scheduled for surgery and hospitalization for at least 3 days at an academic cancer center. 12 patients rescheduled or declined after surgery. Intervention: massage and acupuncture on post-operative days one and two in addition to usual care (n=93) or usual care alone (n=45). Measures: patients' pain and nausea by numeric rating scale, number of vomiting episodes, mood (POMS scales for anxiety and depression) at four time points over three days; data on health care utilization. Analyses by mixed-effect regression

analyses for repeated measures. Results: Participants in the intervention group experienced a decrease of 1.4 points on a 0-10 pain scale, compared to 0.6 in the control group (P=0.038), and a decrease in depressive mood of 0.4 (on a scale of 1-5) compared to ± 0 in the control group (P=0.003). No significant differences in nausea, vomiting, anxiety or costs. Conclusion: Providing massage and acupuncture in addition to usual care resulted in decreased pain and depressive mood among post-operative cancer patients when compared with usual care alone. These findings merit independent confirmation using larger sample sizes and attention control.

CC3-The Prevalence of Colorectal Cancer Testing and Screening in a Diverse Patient Population

Shokar, Navkiran, University of Texas Medical Branch; Carlson, Carol; Weller, Susan

Context: Colorectal cancer (CRC) screening is strongly supported by evidence and widely recommended, but remains underutilized. Racial/ethnic differences in CRC screening rates have been attributed to differences in access to care and insurance status. Little is known about CRC screening rate disparities in African-Americans, Hispanic or white patients having the same source of health care. Objective: To describe the prevalence of CRC testing and screening in diverse patients with the same source of health care. Design: Cross-sectional survey. Setting: University affiliated family medicine clinic. Instrument: Included items to elicit past history of CRC testing, including test type, indication and timing. Sociodemographic information was also collected.

Participants: Stratified sample of African-American, Hispanic and white males and females aged 50-80. Outcome Measures: 1) Prevalence of current CRC testing and CRC screening (excluding tests done for diagnosis of symptoms). 2) Factors associated with screening. Results: 560 surveys were completed: mean age: 63.4 years, minority race/ethnicity: 64%, health insurance: 98.6%. Overall, 62.5% [95% CI: 58.5%, 66.5%] of patients were current with any type of CRC test. However, 48.6% [95% CI: 44.5%, 52.7%] of the sample was current with CRC screening, when tests performed for symptoms were excluded. Patients least likely to be current with testing were those of minority race/ethnicity (48.2% of Hispanics, 56.7% of African-Americans and 67.5% of whites, $p < 0.05$), younger age, (57.6% of those aged 50-64, and 71.4% of those aged 65-80, $P < 0.005$), and those with private insurance alone (56.0% private, 67.7% public and 68.1% mixed, $P < 0.05$). Conclusion: Racial/ethnic and age related disparities in CRC screening remain even in patients having the same source of health care and no differences in insurance status. These results underline the need for providers to emphasize CRC screening in their practices to minority patients and those younger than 65 years of age.

CC4-Tobacco Use in Women Participants in a Methadone Program

Khanna, Niharika, University of Maryland; Sadaphal, Swati; Arnold, Stephanie; Joshi, Ashish; Finkelstein, Joseph; Stewart, David

Context: Methadone programs present a means to develop a comprehensive care model of chronic care of the addicted patient. The study proposes tobacco related studies to understand usage before future interventional studies.

Objective: Gather baseline tobacco use data on women in a Methadone program and related social predictors of use.

Design: Non-randomized cross-sectional study. **Setting:** The study population was recruited from a University affiliated Methadone program and the control population from a Family medicine clinic. **Patients:** Inclusion criteria included smoking, registration in the University of Maryland Methadone program, female, English proficiency. **Controls** were women at the family medicine clinic who smoked and were not registered in a Methadone program. **Recruitment** was done by a physician and a health educator, and all data was gathered using a tablet PC. **Intervention:** The participants were assessed using three computerized questionnaires 1) Fagerström Test for Nicotine Dependence, 2) University of Rhode Island Change Assessment Scale (URICA) for determinants for readiness for change 3) twenty-item Self-report Depression Symptom Scale developed by the Center for Epidemiologic Studies (CES-D). **Statistical Analysis:** Linear regression analysis and Stratification analysis. **Outcome Measures:** Nicotine dependence scored using the Fagerstrom Nicotine dependence index, Depression measured by CES-D, Readiness for change (URICA). **Results:** 117 study women and 50 control women were included. Average age was 43 years, 83% were African-American. Data comparing women in the Methadone program to control women recruited from the Family medicine clinic, had statistically significantly higher Fagerström nicotine dependence scores 5.30 ± 2 , compared to 2.92 ± 3 , $p = < 0.0001$, higher readiness to change, 8.77 ± 2.2 compared to 7.36 ± 2.4 , $P = < 0.0005$, were likely to be more depressed 22.50 ± 11.7 compared to 14.74 ± 10.8 , $P = < 0.0001$. **Conclusion:** Cigarette smoking women registered in Methadone programs are more likely to have positive correlation between higher Nicotine dependence scores measured by Fagerström Index, higher URICA scores and higher depression detection using CES-D scores, compared to control women. Our data suggest high nicotine dependence in women in Methadone programs and open up potential opportunities for intervention. Methadone users demonstrated higher depression scores and higher readiness for change, thus suggesting potential future success of intervention programs targeting nicotine abuse in this population and treatment of co-existing depression.

CC5-Development and Testing of the Provider Bias Instrument for Assessing Cancer Screening (PBIAS)

Tudiver, Fred, East Tennessee State University; Lang, Forrest; Bailey, Beth; Beine, Kathleen; Shell, Renee; Pfortmiller, Debi; Hasija, Sonam

Context: Disparities exist in cancer screening, with rates particularly low among rural residents of Appalachia. Patient characteristics and provider bias related to these characteristics contribute to low screening rates. Unfortunately, no valid measures of provider bias exist for use in disparities research.

Objectives: To develop and test a measure of provider bias (PBIAS) by portraying attitudes and beliefs thought to influence cancer screening by primary care providers in rural Appalachia. **Design:** Instrument development. **Setting:** Instrument testing occurred in rural Appalachian communities. **Participants:** 42 primary care providers (PCPs) from rural Appalachian counties in three states participated.

Intervention/Instrument: Six video vignettes were developed, each portraying a different patient-physician encounter. Across vignettes, five key elements thought to influence provider medical decisions were portrayed at either high or low levels: fatalism, socioeconomic status, patient anxiety, quality of provider-patient relationship, and present-day orientation. PCPs viewed the vignettes, rated the level of each of the five elements, and participated in discussion groups. After the first round of testing, vignettes were revised for a second round of testing and refining, followed by a third and final validation round. **Outcome Measures:** Level of agreement between PCP perception of level of each element and intended level of each element within each vignette.

Results: Findings from round one led to hiring professional actors to perform in the vignettes. Round two produced good agreement (70-80%) for four of five intended elements, leading to dropping the portrayal of “present day orientation.” In round three, agreement was not significantly $< 80\%$, and in most cases exceeded 80%, for all four remaining elements.

Conclusions: The PBIAS appears to accurately portray varying levels of characteristics thought to influence provider decision-making in rural Appalachia, and is the first instrument available to explore the role of these characteristics in health disparities research.

CC6-Symptom Burden Among US Cancer Survivors Differs by Age: A Population-based Study

Mao, Jun, University of Pennsylvania; Armstrong, Katrina; Bowman, Marjorie; Xie, Sharon; Kadakia, Rachel; Farrar, John

Context: Previous research using specific cancer populations showed a high but variable symptom burden related to cancer and its treatment; however, very little is known about the extent and pattern of symptom burden among US cancer survivors as compared to other populations. **Objectives:** To determine the prevalence of recurring symptom distress among US cancer survivors and compare this prevalence with the rest of US general population, and other chronic diseased

populations. **Design, Setting, and Participants:** We analyzed data from the 2002 National Health Interview Survey, which included 1904 cancer survivors and 29092 individuals without a past diagnosis of cancer. Multivariate logistic regression models were used to adjust for confounders and test for interactions. **Outcome Measures:** self-reported ongoing symptom complaints: pain, psychological distress, and insomnia. **Results:** The rates of recurring pain, psychological distress, and insomnia among cancer survivors were 34%, 26%, and 30% respectively and were significantly higher (all $p < 0.05$). Adjusting for key socio-demographic factors and co-morbidities, the association between symptom burden and cancer survivor status is greater among younger than older individuals ($p < 0.001$ for both interaction term and for the model). In addition, cancer survivors were more likely to report recurring pain (odds ratio [OR] 1.25, 95% confidence interval [CI] 1.06-1.47, $P=0.007$) and psychological distress (OR 1.24, 95% CI 1.05-1.47, $P=0.01$) than individuals with other chronic medical illnesses such as heart disease and diabetes after adjusting for confounders. **Conclusions:** The symptom burden among cancer survivors is substantial, persistent, and higher than other chronic serious medical illnesses. Effective symptom assessment and treatment by primary care physicians are needed to help eliminate the suffering of cancer.

CC7-No Association Between Lipid-Lowering Statin Use and Risk of Colon Cancer

Li, Li, Case Western Reserve University; Thompson, Cheryl; Tucker, Thomas

Context: Lipid lowering statin has been inconsistently associated with reduced risk of colorectal cancer in previous epidemiologic studies. **Objective:** We seek to further investigate the potential link between statin use and colon cancer risk. **Design:** A population-based incident case-control study. **Setting:** Incident colon cancer cases were recruited through the Kentucky Cancer Registry, a site of the NCI-SEER program; and healthy controls were recruited through random digit dialing, with area code and exchange matched to cases. Behavioral and lifestyle risk factor information was collected using a validated Risk Factor Questionnaire (RFQ) developed by the NCI-Colon Cancer Familial Registry. **Participants:** Included in this analysis were 339 colon cancer cases (mean age at diagnosis = 62.4 years) and 402 random population controls (no personal history of colorectal cancer or any other forms of cancer, mean age at entry = 58.4 years). **Outcome Measures:** Incident colon cancer diagnosed within 9 months prior to recruitment into the study. **Results:** Odds ratio (OR) of colon cancer for statin use was estimated from multivariate logistic regression with adjustment for age, gender, race, family history of colorectal cancer, NSAIDs use, BMI, smoking, diabetes, and alcohol use. Compared to those who never used statins, the ORs were 1.06 (0.50, 2.23) and 0.80

(0.34, 1.87), for those used statin for less than 5 years and more than 5 years, respectively. Stratified analysis by family history, age at diagnosis (<60 ; ≥ 60) yielded similar **Results**. **Conclusions:** Our population-based case-control study provides little support for a protective role of statin use in the etiology of colon cancer, adding evidence rebutting the role of statins in colon carcinogenesis.

HEALTH CARE DELIVERY/HEALTH SERVICES RESEARCH II (DD1-DD7)

AGAVE II & III

DD1-Blood From a Stone: Acquiring and Working With Income Data From Family Physicians

Green, Michael, Queen's University; Hogg, William; Gray, David; Koller, Michelle; Manuel, Doug; Maaten, Sarah; Sharma, Sisir; Soto, Enrique; Rosser, Walter; Viner, Gary; Shortt, Sam

Context: Primary care reform has been an ongoing process for the past several years in Ontario. Successive provincial governments have introduced alternatives to traditional fee for service billing which use a combination of financial incentives and payment structures as well as rostering of patients to identify those patients affiliated with a particular physician or practice. Governments have promised family physicians that participation in such reforms would be financially as well as professionally rewarding. **Objective:** To determine whether the incomes of Family Physicians in Ontario increased as a result of participation in primary care reform required access to accurate income information over time. New methods of acquiring and handling this information were essential and needed to be both reliable and acceptable to the physicians invited to participate in the study. **Design:** Retrospective longitudinal observational study. A random sample of physicians from each model of care was selected for recruitment. **Setting:** Ontario, Canada. **Participants:** All practicing physicians whose primary practice was identified as family or general practice were eligible for selection. **Instrument:** Participating physicians gave consent for a nationally recognized accounting firm to access 5 years of income data directly from the Canada Revenue Agency and corresponding billing data from the OHIP database. **Outcome Measures:** The focus of this talk will be on the consent process, privacy protections and special safeguards used to enable us to access accurate income information from the Canada Revenue Agency without relying on self report while still assuring participating physicians that this sensitive information would be adequately protected. **Results and Conclusions:** Over 300 physicians in 5 models of care agreed to participate. Participation rates ranged from a high of 35% for physicians in Family Health Networks to a low of 7.5% among physicians in standard Fee For Service practice. The privacy safeguards did pose some challenges for the collection and data cleaning stages of the study, but were not insurmountable. The use of a novel approach for data

collection and storage enabled us to collect information that otherwise would not have been accessible.

DD2-Do International Medical Graduates Fill the Gap in Rural Primary Care in the US?

Thompson, Matthew, University of Oxford; Hagopian, Amy; Fordyce, Meredith; Hart, L Gary

Context: The contribution that international medical graduates (IMGs) make to reducing the rural-urban maldistribution of physicians in the US is unclear. Quantifying the extent of such “gap filling” has significant implications for the future medical workforce. **Objective:** To compare the practice location of IMGs and US medical graduates (USMGs) in primary care specialties. **Design:** We used the 2002 AMA physician file to determine the practice location of all 205,063 primary care physicians. Practice locations were linked to the Rural-Urban Commuting Areas, and aggregated into urban, large rural, small rural and isolated small rural areas. We determined the difference between the percentage of IMGs and percentage of USMGs in each type of geographic area. This was repeated for each Census Division and state. **Results:** One quarter (24.8% or 50,804) of primary care physicians in the US are IMGs. IMGs are significantly more likely to be female (31.9% vs. 29.9%, $P < 0.0001$), older in age (mean ages 49.7 and 47.1 yr, $P < 0.0001$), and less likely to practice family medicine (19.0% vs. 38%, $P < 0.0001$) than USMGs. We found only 2 Census Divisions in which IMGs were relatively more likely to practice in rural areas than USMGs (East South Central and West North Central). However, at the state level of analysis, there were 18 states in which IMGs were more likely, and 16 in which they were less likely to practice in rural areas than USMGs. **Conclusions:** IMGs fill gaps in the primary care workforce in many rural areas, but this varies widely between states. Policies which attempt to redress the rural-urban physician maldistribution in the US should take into account the role of IMGs.

DD3-Public Opinion of Primary Care in Canada: The Halifax Voice

Burge, Fred, Dalhousie University; Lawson, Beverly; Brendan, Carr; Howlett, Marilyn; Langille, Donald; McMillan, Marguerite; Muirhead, Philip; Russell, Mary; Twohig, Peter

Context: Primary health care (PHC) in Canada is of increasing interest to federal, provincial and territorial governments. The C\$800M PHC fund supported creating primary care teams, improving information flow, better 24/7 access and a new focus on health promotion/disease prevention. **Objective:** The goal was to adapt/develop a tool to provide population-based estimates of the public’s perception of the quality and acceptability of primary care. **Design:** Telephone administered population survey. **Setting:** Four Community Health Boards (CHB) of the Capital District Health Authority, Halifax, Nova Scotia, Canada.

Participants: 1,607 adult residents. **Instrument:** The Primary Care Practice Survey (PCPS), a Canadian adaptation of the General practice Assessment Questionnaire (GPAQ, 2003) augmented with items from the former General practice Assessment Survey (GPAS) and questions relevant to primary care in Canada. **Outcome Measures:** Scale scores pertaining to 5 PC domains (access, communication, continuity, enablement, patient-provider relationship) plus prevention and overall satisfaction. **Results:** Ninety six percent had a regular family doctor’s office to go to and had been a patient at that office for 14.3 years (95% CI 13.7, 14.9). One third (32%) indicated a nurse was available there but only 10% saw one. Nurse practitioners supplied care to only 3% of residents. Continuity (85.5) and Communication (80.9) were scored relatively high. The Enablement scale score (78.0) was slightly lower as was Patient-provider relationship (70.9). Moderate to low scores were obtained for the Access (57.5) and Prevention scales (43.9). The elderly and those in better health had better PHC experiences. **Conclusion:** These results equip us to target PHC strategies for our communities and to evaluate the results. Several areas need attention and several groups of individuals need service improvement. The results are being disseminated to PHC planners and providers and will be administered in other health regions and at the PHC practice level.

DD4-The Provision of Comprehensive Care by Family Physicians in Canada

Wong, Eric, The University of Western Ontario; Stewart, Moira

Context: Comprehensive care is a central theme of primary care and family medicine. A definition of comprehensive care that encompasses both research and philosophical dimensions has three characteristics: the provision of care to a defined population, the degree to which care is provided in different settings, and the degree to which core or essential medical services are provided. **Objective:** To describe comprehensive care as provided by Canadian family physicians nationally and regionally based on the above definition. **Design:** Secondary analyses of cross-sectional data from the 2001 National Family Physician Workforce Survey (NFPWS) conducted by the College of Family Physicians of Canada. **Setting:** General community of family physicians or general practitioners (FPs / GPs) in Canada. **Outcome Measures:** Comprehensiveness score based on the number of 12 selected medical services provided by Canadian FPs / GPs who were “office-based”, ie, those who had a main office setting of either a private office / clinic (excludes walk-in clinics), community clinic / community health center / center local de services communautaires, or academic family medicine teaching unit. **Results:** Eighty-five percent of the FPs / GPs who responded to the 2001 NFPWS were office-based. They provided, on average, 8.5 (95% confidence interval [CI] 8.5-8.6) out of 12 medical services, as compared to non-office-based FPs / GPs who provided 5.5 (95% CI 5.7-5.9) services. This

comprehensiveness varied with provincial and territorial divisions ($p < 0.001$) and rurality ($p < 0.001$). There were also variations in the proportions of FPs / GPs that provided each of the 12 selected medical services national and regionally. Conclusions: The comprehensiveness of the care provided by office-based FPs / GPs in Canada was high despite the presence of regional variations, especially in services that were required to be provided in non-office settings and were provided by fewer FPs / GPs than the services. Definitions of what a family physician or general practitioner is and reasons for the wide variation in the provision of services in non-office settings must be addressed in order to preserve comprehensive care in Canada.

DD5-Human Health Resources Composition in Primary Health Care: Current Practice Relationships With Health Care Professionals in Ontario

Stewart, Moira; Trim, Kristina, University of Western Ontario; Brown, Judith Belle; Kasperski, Jan; Freeman, Tom

Context: Ontario government policy explicitly encourages primary health care practitioners to work in interdisciplinary teams. Making the transition to interdisciplinary teams requires understanding current health human resource deployment. Objective: Estimates of who provides primary health care services are discussed for the five professions studied (family physicians, nurses, dietitians, pharmacists and social workers). Design: Mailed Survey. Participants: 5000 surveys were mailed in total: 1000 surveys were mailed to each of the five professional groups. Participants were randomly selected from their respective Colleges' registry and stratified by four regions of Ontario using Local Health Integration Networks (north, east, southwest, central). Response rates were acceptable and ranged from 65% to 82%. Results: The proportion of survey respondents who reported "working in the community, directly in health or mental health care" was 38% for dietitians, 92% for family physicians, 74% for pharmacists, 61% for social workers and 13% for nurses. The percentage of those who self-assessed their role as "primary health care providers" was 20% for dietitians, 83% for family physicians, 42% for pharmacists, 14% for social workers and 7% for nurses. Over 90% of professionals report working with other professions on teams within their office or unit and >55% work with both family physicians and nurses. All professionals report providing consultation services to other professionals: the most frequent types of consultations were informal consultations (eg, hallways, phone calls, coffee, etc.) and meeting with the patient directly. Conclusions: Many health care professionals currently perceive that they work in a team capacity when providing community-based direct care services to patients. While there are limitations in the data collected, this study provides us with better

estimates of who is providing primary care in Ontario and the nature of these professional relationships.

DD6-Characteristics of Physicians Who Provide and Medicare Beneficiaries Who Receive Care Plan Oversight

Peterson, Lars, Case Western Reserve University; Landers, Steven

Context: In 2001 Medicare began reimbursing primary care clinicians (PCP) for care plan oversight (CPO) of patients receiving home health or hospice care. This is one of the rare circumstances in the United States health care system where PCP are reimbursed for care coordination and multidisciplinary collaboration not associated with a patient encounter. Little is known about the characteristics of clinicians who provide and patients who receive CPO. Objective: To determine the overall volume of and charges for CPO services and assess geographic variation, with respect to rurality, in the types of clinicians who provide and patients who receive CPO within the fee-for-service Medicare population. Design: Cross-sectional analysis of 2003 Part B Medicare claims data. Provider specialty, patient location and demographics are available in the Medicare data. County-level rurality was measured via the Rural Urban Continuum Codes. Participants: 5% nationally representative sample of Medicare beneficiaries. Outcome Measures: Number of CPO charges and payments by clinician specialty and patient characteristics. Results: 90,587 claims with total paid charges of \$4,733,652 for CPO were identified from 39,955,620 total claims. We estimate that 1,811,740 claims totaling \$94,673,020 for CPO were made for the fee-for-service Medicare population in 2003. 67% of patients receiving CPO were women, 77% were white, and 49% were ≥ 80 years old. Internal Medicine physicians (IM) submit 48%, Family physicians (FP) 27%, General practice physicians (GP) 4%, Geriatric physicians 2%, and non-PCP 19% of all CPO claims. The percent of claims by FP and GP increases with rurality while that of IM, Geriatric, and non-PCP decreases. FP submit the majority of CPO charges when the urban population of a county is less than 20,000. Conclusions: CPO charges to Medicare are predominately made by PCP for white female patients ≥ 80 years old. In rural areas FP are more likely to submit CPO charges than other types of clinicians.

DD7-The Changing Face of Family Medicine

Stewart, Moira; Burt, Andrea; Thind, Amardeep; Reid, Graham; Harris, Stewart; Brown, Judith Belle; Thorpe, Cathy, University of Western Ontario

Context: In recent years, the casual observer would have noticed changes in the provision of services and availability of family physicians in London, Ontario, Canada. Are such casual observations born out by data? Objective: To identify and analyze trends in family practice in the city of London, Ontario, Canada from 1974 to 2004. Design: An analysis of data from a unique dataset comprised of four sequential surveys conducted 10 years apart as part of a continuing

census of all family physicians in London. Setting: City of London, Ontario. Participants: 128 family physicians practicing in London in 1974, 180 in 1984, 237 in 1994 and 245 in 2004. Outcome Measures: Characteristics of family physicians (eg, gender, residency training, years in practice) and their practice profile (eg, practice type, number of patients seen per week, provision of housecalls, obstetrical, and hospital care). Results: Excellent response rates were obtained in each survey: 100% in 1974, 97% in 1984, 77% in 1994, and 70% in 2004. The percentage of female family physicians, family physicians with no in-hospital patients, and family physicians making no home visits in an average week increased significantly. An increasing proportion of family physicians is seeing fewer patients in an average week. The percentage of solo family physicians and family physicians practicing obstetrics decreased significantly. Conclusions: Family practice has become increasingly office-based with less comprehensive care. As well, lower volumes of care are now provided. The casual observations of less availability of family physicians and their reduced provision of services are supported by rigorous survey data.

HEALTH PROMOTION/DISEASE PREVENTION I (EE1-EE7)

JOSHUA TREE I

EE1-Development of the Peer Health Educator Role in a Community Cardiovascular Health Awareness Program (CHAP)

McDonough, Beatrice; Hall, Heather; Guirguis-Younger, Manal; Chambers, Larry W.; Kaczorowski, Janusz; Karwalaity, Tina, McMaster University

Context: As part of a larger evaluation of a peer-supported community-wide program to promote cardiovascular health awareness, we conducted a qualitative study to learn from the experiences of the volunteer Peer Health Educators (PHEs). Objective: To learn about volunteers' perspectives on the CHAP program, including challenges encountered, perspectives on the design and value of the program, development of the volunteer role, and interest in potentially expanded role. Design: Qualitative inquiry using focus group discussions that were tape recorded and transcribed. Participants: 27 older adult volunteers who led CHAP sessions in the community-wide demonstration project in Brockville and Grimsby, Ontario. Results: The mean age of participants was 67. The findings describe the PHE role from the perspective of volunteers and identify organizational factors that impacted on role development. Challenges encountered by volunteers included space constraints and keeping attendees waiting; lack of time or readily available materials to provide patient education; conflicting ideas about their role in providing education; and a lack of clarity about some program logistics. Perspectives on the design and value of the program revealed how the program theory was translated in practice, and also provided

insight into factors determining satisfaction. Volunteers measured the success of the program in terms of reaching as many people as possible, in particular those who are unaware of their risk factors, but also as helping just one person. PHEs continued to develop aspects of their role, such as strategies for asking potentially sensitive questions. Most conveyed that an expanded role, with more responsibility for organizing sessions or providing education, would be acceptable. Conclusions: The experiences and perspectives of CHAP volunteer PHEs provided valuable learning for a community-randomized trial of the program, underway in 39 communities across Ontario. The 'success' of volunteer-supported community programs may be dependent on the wider context of community support.

EE2-Development and Validation of the Male Osteoporosis Risk Estimation Score (MORES) to Select Men for Bone Densitometry

Shepherd, Angela, University of Texas Medical Branch-Galveston; Cass, Alvah; Carlson, Carol; Ray, Laura

Context: At age 60 men have an estimated 25% lifetime risk of an osteoporotic fracture, which includes approximately 150,000 hip fractures in men each year in the US, and results in an excess mortality of 30%. Since mass screening for osteoporosis is not recommended in men, a clinical tool might help clinicians determine those at increased risk for osteoporotic fracture. Objective: To develop and validate a clinical decision tool to assist clinicians in identifying men who would benefit from bone mineral density testing for osteoporosis. Design, Setting, and Participants: To develop the decision tool, a split-sample design was used to randomly assign men ≥ 50 years of age from the National Health and Nutrition Examination Survey (NHANES III) to a development set (n= 1497) or a validation set (n= 1498). All subjects had valid dual energy X-ray absorptiometry scans (DXA), which were used to define osteoporosis. Published fracture risk factors available in NHANES III were modeled using logistic regression. Odds ratios from factors retained in the model were used to develop the Male Osteoporosis Risk Estimation Score (MORES), an estimate of osteoporosis risk. Outcome Measures: Sensitivity and specificity for the MORES clinical decision tool for predicting osteoporosis. Results: Low body weight, advancing age, past or present tobacco use, single marital status, and current abstention from alcohol were significant indicators of osteoporosis in men. The validated MORES had a sensitivity of 0.904 (95% CI, 0.791-0.959) and a specificity of 0.662 (95% CI 0.619-0.702). The MORES performed similarly across racial/ethnic groups. The MORES correctly identified 90% of males ≥ 50 years-of-age who had osteoporosis, while screening only 37% of this population. Conclusions: The MORES is a valid and simple instrument that uses readily available and reliable data from a clinical encounter to identify the majority of males at risk for osteoporosis.

EE3-A Validation Study of the US Preventive Services Task Force Recommendations for Screening Women for Osteoporosis

Cass, Alvah, University of Texas Medical Branch; Shepherd, Angela; Carlson, Carol

Context: Osteoporosis is major health problem for aging populations. The US Preventive Services Task Force recently updated their screening recommendations for women; however, these recommendations have not been evaluated in the population. **Objective:** Develop and the effectiveness of a clinical rule based on the USPSTF recommendations to screen women for osteoporosis. **Design:** Secondary analysis of the National Health and Nutrition Examination Survey III dataset, a probability-based cross-sectional sample of the US population. **Setting:** U.S population as represented in the NHANES III dataset, which contains participants' demographics, health information, and bone mineral densities (BMD) of the hip. **Participants:** Post-menopausal women, 50 years-of age and older included in the NHANES III dataset (n=3793). **Intervention/Instrument:** Osteoporosis of the hip, based on gender/ethnic specific reference groups from NHANES III, was defined in accordance with the World Health Organization definition. Data from NHANES III on risk factors for osteoporosis and/or osteoporotic fractures described in the USPSTF recommendations were used to create a clinical rule to select women for BMD testing based on USPSTF recommendations. **Outcome Measures:** Sensitivity, specificity, and a point estimate of the area under the receiver operator characteristic curve (AUC) for the clinical screening rule. **Results:** A clinical rule derived from the USPSTF recommendations regarding osteoporosis screening produced a sensitivity of 0.917, a specificity of 0.420, and point-estimate for the AUC of 0.699. Additionally, 73.9% of women with osteopenia would be referred for DXA scan, while 56.3% of women with normal BMD would be saved the expense of DXA scan. **Conclusions:** The USPSTF recommendations proved acceptable for identifying women likely to benefit from DXA scan testing for osteoporosis and compare favorably with other validated clinical screening instruments. The majority of false positive cases (60.3%) are women with osteopenia, who also may benefit from DXA scan testing.

EE4-The MRC ATEAM Trial of Alexander Technique, Exercise, and Massage for Chronic and Recurrent Back Pain: Hope for Chronic Back Pain Sufferers?

Little, Paul, Southampton University; Webley, Fran; Beattie, Angela; Evans, Maggie; Middleton, Karen; Lewith, George; Yardley, Lucy; Ballard, Kathleen; Oxford, Frances; Smith, Peter; Sharp, Debbie

Context: Chronic back pain is a major problem for patients, health care providers, and society but there are very few proven interventions. **Objective:** To assess the effectiveness of massage, a physical activity prescription, and the

Alexander Technique (a self-care approach that facilitates avoidance of pain-producing misuse and the re-establishment of normal neuro-muscular co-ordination) for back pain. **Design:** Randomized controlled trial. **Setting:** Primary care. **Patients:** 579 patients with chronic or recurrent back pain. **Intervention:** Four groups: normal care (control); 6 sessions of massage; 6 lessons of Alexander Technique (6AT); and 24 lessons of Alexander Technique (24AT). Half of each of these groups were also randomized to GP exercise prescription with follow-up behavioral counseling sessions from the practice nurse. **Results:** At 3 months all interventions improved the Roland Morris (RM) function score (the main outcome). By 1 year the effect of massage was no longer significant, but the effect of Alexander Technique was maintained (mean reduction in RM score compared to the control group: massage -0.58 (95% confidence intervals -1.94 to 0.77); 6AT -1.40 (-2.77 to -0.03); 24AT -3.4 (-4.76;-2.03). Exercise was also effective (-1.29 (-2.25 to -0.34). Exercise combined with 6AT achieved 71% of the impact of Exercise and 24AT (RM score respectively -2.98 (-4.99 to -1.07) and -4.22 (-6.13 to -2.31). At 1 year the median number of days of back pain reported in the last 4 weeks was much lower with Alexander Technique: control 21 days, massage 15 days, 6AT 10 days, and 24AT 3 days. Alexander Technique also improved quality of life, and both exercise and Alexander Technique reduced fear avoidance (fear of harm due to physical activity). **Conclusion:** The Alexander Technique has a major long term effect on both pain and function, and improves quality of life for patients with chronic or recurrent back pain. A short course of Alexander Technique lessons combined with exercise prescription is nearly as effective as a longer course of lessons and could feasibly be considered by health care providers.

EE5-Community-based Participatory Research: Sharing Results With the Community. An Example of Knowledge Translation From the Kahnawake Schools Diabetes Prevention Project

Macaulay, Ann, McGill University; Ing, Amy; Salsberg, Jon; McGregor, Amelia; Saad-Haddad, Chantal; Rice, Joyce; Montour, Lois; Gray-Donald, Katherine

Context: Community-based participatory research (CBPR) engages researchers and communities in an active partnership from developing the question to disseminating results. Results dissemination within the community increases local knowledge and knowledge translation, promotes community interpretation of results, and co-learning between the partners. The Kahnawake Schools Diabetes Prevention Project (KSDPP) is a CBPR project with an Aboriginal community in Canada, promoting healthy lifestyles for the primary prevention of type 2 diabetes. **Objective:** To document the experiences of sharing research results with the community and the experiences of those presenting, and analyzing the feedback from community members. **Design:** A multi-disciplinary team, including community members, delivered a contextualized presentation of KSDPP results. **Setting:** The

same presentation was made to fourteen community organizations and at two open meetings. Following the presentations, the questions and discussions were summarized, and participants completed evaluation forms that included open-ended comments. Participants: 181 people attended the presentations. Main and secondary outcomes. The evaluation forms, completed by 162 (82%) of participants (87% female), showed 99% found the presentations easy to understand, and 142 (88%) stated they would improve their eating and physical activity habits as a result of the information. Qualitative analysis of discussion summaries and open-ended comments documented participants' knowledge and beliefs about the project, the community, and lifestyle habits, and recommended actions for KSDPP team interventions to promote healthy lifestyles. Conclusions: This adds to the paucity of literature on sharing results with the community. The presentations were time consuming but gratifying for the presentation team. As a result of the presentations, community interpretations of research results were incorporated into an earlier scientific article, and the discussions provided ideas for the KSDPP intervention team. The majority of participants stated they would improve their lifestyles, which indicates successful knowledge translation (translational research) activities.

EE6-Designing a Patient-centered Family Medicine Center: The Patient Perspective

Whetstone, Lauren, East Carolina University- Brody School of Medicine; Gilchrist, Valerie; Morrissey, Susan; Owen, Lynda

Context: The design of a medical facility can affect patients' experiences and satisfaction, which may in turn impact their perception of quality of care and outcomes. The design of a new facility involves the input of many experts; however, one of the most important design contributors may be the patients who will seek care in that facility. Objective: To explore patients' perspectives of the important design features of a patient-centered family medicine center. Design: Focus groups with observer notes shared among four research team members and analyzed for recurrent themes. Setting: Academic department of family medicine in eastern North Carolina. Participants: Four patient focus groups; two groups were comprised of university employees (n=16 and n=11), one group was of patients over 55 years of age (n=4), and one was of Medicaid patients (n=3). Outcome Measures: The defining features of a patient-centered family medicine center. Questions focused on qualities of the best and worst doctor's offices and how a center should be designed to be patient-centered. Results: One of the main themes, consistent across all patient groups, related to waiting at the doctor's office (both waiting and exam rooms). Patients expressed that waiting time should be used constructively (eg, educational materials available, patients verify their personal information electronically) and that their time should be valued. There was also agreement

that waiting rooms should be compartmentalized (eg, children/adults or sick/well). A second theme encompassed the general atmosphere of the facility; patients described a patient-centered facility as homey, welcoming, and calming. Focus group participants had difficulty discussing the important features of a center separately from how they were treated. Conclusions: Patient suggestions for design features of a family medicine center reflect their experiences in clinic settings and offer suggestions for design that may improve patient experiences.

EE7-Screening and Management of Hepatitis C: Clinicians' Views of a Complex Task

Leverence, Robert, University of New Mexico; Williams, Robert; Pathak, Dorothy; Parnes, Bennett; Pace, Wilson; Kroth, Philip; Fry-Johnson, Yvonne; Levine, Robert

Context: Infection with Hepatitis C virus (HCV) is a common occurrence yet the issues confronted by primary care clinicians regarding its identification and treatment are complex. Objective: The purpose of this study is to better understand clinicians' practice habits and views on the screening and management of HCV.

Setting/Design/Participants: This study was conducted by PRIMENet, a consortium of three primary care practice-based research networks (New Mexico's RIOSNet, Colorado's CaReNet, and the Southeast Regional Clinician's Network). An electronic survey was administered to 813 clinicians across all three networks from January to April 2006. Non-responders were mailed paper surveys. Results: Survey response rate was 58%. Clinicians indicate a high interest in participating in the screening (87%), diagnosis (93%), and co-management (94%) of HCV, and the most common factor cited by clinicians when considering their approach to HCV is that the consequences can be serious (89%). However 45% report competing demands also influence their approach and two thirds consider HCV less important than the common problems they face in practice. For new patients, 14% of clinicians routinely assess for a history of Intravenous Drug Abuse (IVDA) and 33% for a history of transfusions before 1992. In the face of an abnormal ALT, 54% and 38% of clinicians inquire about these risk factors respectively. Clinicians uncommonly order a hepatitis C antibody when confronted with a history of IVDA (<20%) or an abnormal ALT (<20%). Most clinicians are satisfied with the quality (79%) and accessibility (71%) of treatment services, yet only 46% refer most of their patients for treatment. Treatment tolerability, co-morbidities and financial problems were listed as most common barriers to treatment. Conclusion: Clinicians report low screening and referral rates for HCV. Reasons are complex and include other competing time demands on the clinician and poor tolerability and affordability of treatment.

PSYCHIATRY I (FF1-FF7)

JOSHUA TREE II

FF1-Medical Disengagement: Explaining the Mismatch Between Help Seeking and Care Received by Primary Care Patients With Medically Unexplained Symptoms

Dowrick, Chris, University of Liverpool; Ring, Adele; Humphris, Gerry; Davies, John; Salmon, Peter

Context: Medically unexplained symptoms present substantial problems for patients, doctors and healthcare systems. We have previously identified a mismatch between help-seeking and care provided by family physicians, with the effect that family physicians' behaviours tend to perpetuate or exacerbate medically unexplained symptoms. It is important to understand why this mismatch occurs. Possible explanations for family physicians' clinical behavior include professional expectations, skills deficits, cognitive errors, or a desire for distancing and disengagement. **Objective:** To consider evidence that family physicians' clinical behavior in consultations with patients with medically unexplained symptoms can be understood in terms of the deployment of strategies for disengagement or distancing. **Design:** Quantitative analysis of transcriptions of consultations with patients identified by family physicians as presenting medically unexplained symptoms. **Setting:** Primary care teams in the north west of England. **Participants:** 42 family physicians and 420 patients. **Instruments.** Liverpool Clinical Interaction Analysis Scheme, which systematically codes utterances by patients and physicians. Patient Request Form, which identifies patients' intentions to seek treatment, explanation or support from physicians. **Outcome Measures:** Consultation length; patient intentions; patient elaboration of symptoms, disease explanation or management proposals; physician criticism of patient; physician proposal for medical care (prescription, investigation, referral or follow-up). **Results:** Family physicians were more likely to criticise those patients who intended to seek emotional support (OR 1.38, 95% CIs 1.08 to 1.77) than those patients who intended to seek either explanation or treatment. Proposals for further medical care by physicians were strongly associated with increasing length of consultation ($p < 0.001$) and with patient presentation and elaboration of physical symptoms ($P < 0.001$); they were not associated with patients' reference to physical disease, nor with patients' proposals for somatic management. **Conclusions:** Family physicians' use of criticism served to distance them from patients seeking emotional support, while their use of proposals for further medical care served as a means of disengagement from lengthy consultations or elaborate presentations of physical symptoms. These findings provide a plausible explanation for the mismatch between help-seeking and care received by patients, in primary care consultations involving medically unexplained symptoms.

FF2-Gender Differences in Traumatic Events, Post-traumatic Stress Disorder, and Depression Within a Civilian Primary Care Setting

Freedy, John, Trident FMRP; Magruder, Kathryn; Zoller, James; Hueston, William; Carek, Peter

Context: Traumatic events and the development of PTSD or Depression are common. Since most mental health problems are addressed in primary care, it is important to understand the prevalence of traumatic events and related mental health problems. **Objectives:** 1. document gender differences in the prevalence of traumatic events (lifetime) and current PTSD or Depression (past 6 months); 2. document association between traumatic events and current PTSD or Depression. **Design:** Cross-sectional cohort study; participants consented to a structured telephone interview. **Setting:** Family medicine residency clinic. **Participants:** Clinic attendees (age 18 or above, English speaking, no cognitive impairment) recruited; 237 of 500 interviews completed (data collection ends September, 2006); current demographics: 81.6% female; mean age 42.5 years (s.d.=15.1); 66.2% white, 29.5% black, 4.2% other. **Outcome Measures:** Trauma Assessment for Adults (TAA) 12 item measure; PTSD Symptom Checklist-Civilian Version (PCL-C) 17 item measure; Patient Health Questionnaire 9 (PHQ9) 9 item measure. **Results:** Lifetime traumatic events were common (74.4% men v. 66.0% women; p -value ns). Men were more likely to report combat or witnessing serious injury/death ($p < .05$). Women were more likely to report sexual assault before and after age 18 ($P < .05$). Men and women reported equal lifetime rates of 8 other traumatic events (p -value ns). Mental health estimates: 31.3% current PTSD (12.5% men v. 34.4% women; $P < .05$) and 37.6% current Depression (21.9% men v. 41.1% women; $P < .05$). PTSD and Depression were highly comorbid (68.4%). Most traumatic events were associated ($P < .05$) with higher PTSD (11 of 12) and Depression (10 of 12) scores. **Conclusions:** Among adult civilian primary care patients: 1. lifetime traumatic events are common and often associated with current PTSD and Depression; 2. current PTSD and Depression are common and often comorbid; 3. gender differences suggest that women more often experience sexual assault and report higher rates of PTSD and Depression (heightened mental health vulnerability).

FF3-Perspectives of Methadone Maintenance Specialist Staff, Clients, Family Doctors, and Patients on Transfer From Secondary to Primary Care

Goodyear-Smith, Felicity, University of Auckland; Gohns, Annette; Butler, Rachel; Sheridan, Janie; Wheeler, Amanda

Context: There is evidence that providing care for opioid-dependent people on methadone maintenance treatment (MMT) in primary health care settings, supported by specialist services, has beneficial outcomes. In NZ training is available for family doctors to become authorized MMT providers but few patients are transferring from specialist to primary care. **Objective:** Explore barriers and incentives regarding transfer

of methadone maintenance people from secondary to primary care. **Design:** Multimethod survey (combined qualitative and quantitative data). **Setting:** Auckland, New Zealand. **Participants:** MMT specialist staff, stabilised clients, authorized family doctors and MMT patients. **Results:** High response rates from secondary (77%) and primary (74%) providers with rich qualitative dataset from all respondent groups, especially specialist clients and family doctor patients. Barriers to transfer of stable clients included financial cost and attitudes of specialist staff and clients. Incentives for primary care patient transfer included confidential, holistic and continuity of care; increased patient control; convenience and avoidance of contact with other opioid-dependent people. **Conclusions:** Distrust in the quality of care provided by authorised family doctors was a major barrier for specialist staff and their clients, despite prerequisite training for authorization. In contrast patients rated primary better than secondary care with none likely to transfer back to the specialist service in the next six months. Recommendations include progression from secondary to primary health care to be incorporated in MMT planning from the onset, with specialist services staff reassured about the quality of primary care; an integrated transition period, and exploration of funding options to assist people transferring from public (free) secondary care to private (fee-for-service) primary care.

FF4-Psychiatric Treatment in Primary Care Patients With Anxiety Disorders: A Comparison of Care Received From Primary Care Providers and Psychiatrists

Weisberg, Risa, Brown University; Dyck, Ingrid; Culpepper, Larry; Keller, Martin

Context: Anxiety disorders are among the most common psychiatric problems in primary care. Patients with anxiety disorders typically have considerable disability and high utilization of medical services. However, few studies have investigated the nature of mental health treatments for primary care patients with anxiety disorders. **Objective:** Examine psychiatric treatment received by primary care patients with anxiety disorders. Compare treatment from primary care physicians (PCPs) and psychiatrists. **Design:** Data are from the Primary Care Anxiety Project (PCAP), a naturalistic study of anxiety in primary care. **Setting:** 15 US family and internal medicine sites (rural and urban; university-affiliated, hospital-based, and private practices). **Participants:** Adult primary care patients were screened for anxiety symptoms. Those screening positive were assessed for anxiety disorders. 539 patients with anxiety disorders were enrolled. Exclusion criteria: active psychosis, pregnancy, and the lack of current address or telephone number. **Intervention:** Naturalistic: no study intervention. Rather, types of interventions clinically provided were examined. **Outcome Measures:** Validated, semi-structured clinical interviews; the Longitudinal Interval Follow-up

Evaluation (LIFE) and the Psychosocial Treatment Inventory-Revised (PTI-R). **Results:** 47.3% of the sample was untreated. 21% received only psychotropic medication, 7.2% received psychotherapy alone, and 24.5% received both medication and psychotherapy. Patients getting psychopharmacologic treatment received similar medications, often at similar dosages, regardless if their prescriber was a PCP or psychiatrist. The one exception was that patients were less likely to be taking benzodiazepines if their provider was a PCP. Those receiving medications from a PCP were also less likely to be in psychotherapy. Overall, patients with more impairment, more severe symptoms, and comorbid depression were more likely to receive mental health treatment. Racial/ethnic minority patients were less likely to be treated. **Conclusions:** Nearly half of primary care patients with anxiety disorders were not treated. When treated, care received from PCPs and psychiatrists was relatively similar.

FF5-Does Disease Management Affect Patient Attitudes, Beliefs, or Practices in Chronically Depressed Patients? A Report From the Depression in Primary Care Project *Klinkman, Michael, University of Michigan; Avripas, Sabrina; Adman, Tanya; Aikens, James; Kerber, Kevin; Kuebler, Julie*

Context: Recent studies examining depression disease management report improvements in short- and intermediate term clinical outcomes, but little is known about the sustainability of these improvements, particularly for chronically depressed patients. The role of potential mediating mechanisms such as patient attitudes, treatment beliefs, and self-management practices in sustaining change remains largely unexplored. **Objective:** To assess the impact of a primary care-based depression disease management program (DPC) on patient attitudes, beliefs, and practices regarding depression treatment over an 18-month period. **Design:** Comprehensive mailed surveys administered at baseline, 6, 12, and 18 months. **Setting:** Five intervention and 5 matched control primary care clinics in the University of Michigan Health System. **Patients:** 105 chronically depressed patients identified at study initiation. **Intervention:** DPC is a tailored depression disease management program following principles of the Chronic Care Model. Clinicians were free to refer none, some, or all of their depressed patients at their discretion. **Outcome Measures:** Self-reported PHQ-8, SF-12, treatment alliance, and a battery of validated items and scales assessing attitudes, beliefs, and treatment preferences and practices. **Results:** Three groups were compared: 26 intervention-site patients referred to DPC [DPC], 46 unreferred intervention-site patients [INT] and 31 control-site patients [CONT]. No significant differences between groups were noted at baseline in demographic, clinical, or outcome variables. Almost all patients were currently in active treatment and receiving antidepressant medications. Mean PHQ scores showed a slightly greater decline in the DPC group than INT or CONT (-2.9 vs. -1.9 and -1.8, P=ns), and DPC patients had a higher remission rate (45% vs. 28% and 30%, P=ns) over 12 months.

By 18 months, scores had returned to near baseline in all 3 groups. No significant differences were seen at 6, 12, or 18 months in measures of treatment alliance, attitudes, beliefs, or treatment preferences. Conclusions: Primary care-based depression disease management did not have a significant impact on patient beliefs, attitudes, or the treatment alliance in this sample of chronically depressed patients. In the absence of change in these proposed mediators, the sustainability of clinical improvement in disease management programs is uncertain.

FF6-Explanatory Models of Depression in Low-income Hispanic Patients

Karasz, Alison, *Albert Einstein College of Medicine*;
Watkins, Liza

Context: Depression is significantly under-treated in primary care settings, especially among ethnic minority groups. There has been little research on how such patients conceptualize depressive illness and its treatment. Objective: This study examined explanatory models of depression and their relationship to treatment seeking in a group of low-income Hispanic medical patients. Design: Qualitative interviews. Setting: Two outpatient health centers serving a multi-ethnic, low-income population in the Bronx, New York. Patients: 16 Hispanic patients meeting criteria for depression on the PHQ-9. The mean age was 49; 78% were women; 57% spoke English. Results: Two types of explanatory models emerged in the analysis. “Internal” models were characterized by disease labels (“Major depression”), long time frames (“since I was an infant”), and internal causal explanations such as heredity, or childhood sexual abuse. “External” models were characterized by non-disease labels (“feel overwhelmed with responsibility”), short time frames, and explanations that located the cause of depressive illness in current life events, often with an explicit acknowledgement of social and economic deprivation. The type of explanatory model was strongly associated with treatment experiences. Of the eight participants with ‘internal’ models, seven were both in counseling and taking medication. Of the eight participants with ‘external’ models, only three were currently in treatment. Conclusion: Results of this study found that patients differed in their explanatory models of depressive symptoms. Those with internal models, which ‘match’ the disease orientation of our current approach to treatment, were much more likely to be in treatment. The study does not answer the question of whether explanatory models predispose some patients to seek treatment, or whether, by contrast, long experience with treatment shapes these patients’ explanatory models. Still, results suggest that explanatory models may provide an important key to understanding the problem of undertreatment in primary care settings.

FF7-State Medical Licensing Applications Ask Legally Questionable Questions Under the Americans With Disabilities Act

Schroeder, Robin, *UMDNJ-New Jersey Medical School*;
Brazeau, Chantal; Zackin, Freda; Rovi, Sue; Dickey, John;
Johnson, Mark; Keller, Steven

Context: Each state medical licensing board is responsible “to protect the public from the unprofessional, improper and incompetent practice of medicine,” according to the Federation of State Medical Boards. Individual state licensure is required of all physicians. Almost all licensing applications contain questions and an applicant release of information statement (“release”) referring to the mental or physical health, or substance use history of the applicant. The legality of these questions/releases is undocumented in the medical literature. Objective: To determine if licensing application questions/releases violate the Americans with Disabilities Act (ADA). Design/Setting: Content analysis of 51 allopathic (50 states and District of Columbia) and 14 osteopathic state licensing applications was performed. Questions/releases referencing physical or mental health, or substance use, were identified by a team of physicians and reviewed by legal counsel. Outcome Measures: The number of questions/releases per application referencing mental or physical health conditions, or substance use was measured. Based on the ADA and appropriate case law, the attorney classified these questions/releases (ie, permissible, likely permissible, likely impermissible and impermissible). Results: Of the 65 applications reviewed, 63 (97%) contained questions/releases referencing physical or mental health, or substance use. Of these, 24 (37%) had at least one question/release component considered to be “impermissible”. An additional 19 (29%) applications had “likely impermissible” questions/releases. Conclusions: Most state medical licensing applications contain multiple questions/releases that ask about the physical or mental health, and substance use of physician applicants. Many may be in violation of the ADA, despite 16 years of the ADA law. These questions/releases do not assess or reflect professional competence. Physicians have physical and mental health diagnoses, and substance use at rates similar to that of the general population. The presence of these questions/releases on licensing applications may cause physicians to avoid or delay treatment of personal illness.

Tuesday, October 17

Workshops

2 – 3:45 pm

WK9-Strategies for Successful Mentoring Research Relationships: A Workshop for Current and Future Mentors

CANYON SUITE I

Longo, Daniel, University of Missouri-Columbia;

Katerndahl, David; Burge, Sandra; Griswold, Kim

Objectives: As part of a long-term effort of the Committee for Building Research Capacity to improve research mentoring in family medicine, this workshop will: (1) present results of a Delphi study that identified strategies for effectively and efficiently mentoring junior investigators; (2) use the identified strategies to organize four breakout groups who will explore practical methods to achieve these strategic goals; and (3) in the larger group, reach consensus about ways to improve mentoring skills. **Content:** Research capacity building is among the top issues for the field of family medicine. Among the diverse topics that must be addressed is the development of mentors who can facilitate the growth and maturation of new investigators as they pursue research opportunities. Our discipline is “thin at the top”; we have few experienced mentors to groom the next generation of investigators who will answer important family medicine questions. We seek methods to efficiently and effectively use the expertise that does exist in our discipline in order to grow our research capacity and our mentorship capacity. This workshop will build participants’ knowledge of what works and does not work in family medicine mentoring, and identify successful strategies based on participants’ experience and study findings. **Method:** Presenters will use lecture and group participation and discussion: (1) Initial presentation of Delphi study results, 10 minutes, (2) 4 breakout focus groups, 30 minutes, (3) Reconvene all participants for discussion, 30 minutes, (4) Summary of recommendations, 10 minutes. **Prerequisite Knowledge:** The session is open to experienced mentors as well as faculty who wish to become mentors.

WK10-On the Road to SOMEWHERE...Just Not Sure Where Yet: Finding a “Real Job!” Discussion for Students, Residents, and Fellows (and Honorary Students, Residents, and Fellows)

CANYON SUITE II

DeVoe, Jennifer, Oregon Health and Science University

How often have you heard someone exclaim, “you have so much potential”? Do you spend much of your time answering questions about when you plan to get a “real job”? Somewhere out there is this nebulous, daunting concept of a “real job.” And, YOU are in the driver’s seat on that road to somewhere. This interactive session is designed to create a forum for sharing a diverse range of

ideas and advice about finding direction amidst a maze of primary care research opportunities. **Objectives:** 1. Bring together a diverse group of NAPCRG attendees with different perspectives and experiences about careers in primary care research. 2. Provide opportunities to “ask the experts” and to “teach the experts.” 3. Develop student, resident and fellow “wish lists” for how NACPRG can better serve you. **Content:** The session will begin with introductions and a panel discussion about finding (and creating) jobs in primary care research. The topics of discussion will largely be shaped by audience questions and suggestions. Using both small and large group formats, participants will have the opportunity to ask questions, share frustrations, and discuss personal experiences. **Prerequisite Knowledge:** Willingness to Speak up. Curiosity and motivation to listen and learn!

WK11-Integrating Competency-based Scholarly Work Into a Community-based Family Medicine Residency’s Curriculum

CANYON SUITE III

Moss, Shannon, Baylor Family Medicine Residency at

Garland; Nair, Rajasree; Faber, Debra; Lambert, Timothy

Objectives: This workshop is designed to provide community-based family medicine residency programs with strategies and tools for implementing the RRC curriculum requirements for scholarly activities and integrating these activities into a competency-based curriculum. **Content:** The July 2006 RRC requirements state that family medicine residencies “must provide an opportunity for residents to participate in research or other scholarly activities.” However, this charge can be daunting for many community-based residency programs that are unaccustomed to including scholarly activities and may not have a number of resources at their disposal. During this workshop, the presenters will provide an overview of the RRC requirements and their personal experiences with integrating these requirements into a competency-based curriculum using a multidisciplinary approach with available local resources. There will be a facilitated discussion of the needs, barriers, available resources, and potential scholarly activities in participants’ individual residency programs, and instruction in integrating these into a manageable scholarly activity curriculum. Participants will be provided examples of scholarly activities easily integrated into community-based residencies. Special focus will be given to competency-based tools for resident evaluation. Worksheets, presentations, and other relevant resources for use in participants’ programs will also be provided. **Method:** This workshop will include a brief presentation to be followed by facilitated discussion and participant exercises. The exercises are designed to provide an opportunity for participants to assess their program’s unique needs and apply the information presented to their own programs. **Prerequisite Knowledge:** None.

WK12-The Impact of Community Member Participation on PBRN Research

CANYON SUITE IV

Westfall, John, University of Colorado HSC at Fitzsimons; Zittleman, Linda; Araya, Rodrigo

Background: Community-Based Participatory Research (CBPR) has become an important and valuable method for conducting primary care clinical research. Funding agencies have recently started emphasizing the use of CBPR for research done within Practice-based Research Networks.

The High Plains Research Network (HPRN) has been involving community members in research for 3 years.

Objective: The purpose of this workshop is to: 1) Illustrate examples of active community member involvement in the High Plains Research Network in Rural Colorado 2) Describe the impact of community involvement on PBRN research 3) Discuss strategies and needs for involving community members PBRN research. **Content:** This interactive session will provide a brief background on CBPR methodology and the history of the High Plains Research Network's Community Advisory Council (C.A.C.).

Research staff and C.A.C. members will describe how community members are engaged in research and the impact of their participation on individual research projects. We will discuss the necessary components for developing and maintaining a Community Advisory Council and the challenges we have faced. We will conclude with an open discussion among workshop participants on how to support active participation by physicians and community members in a PBRN. **Organization:** This workshop will be led by a panel of HPRN research staff and C.A.C. members. The workshop will begin with a brief lecture format followed by ample interaction between attendees and the workshop panel. We will attempt to set up the environment for maximal audience participation.

Tuesday, October 17
Concurrent Paper Sessions
4 – 5:45 pm

EDUCATION/TRAINING II (GG1-GG7)

CORONADO I

GG1-Family Physicians Focusing Their Scope of Practice: A Study From the College of Family Physicians of Canada Utilizing the 2004 National Physician Survey Database

Lemire, Francine, The College of Family Physicians of Canada; Scott, Sarah

Context: Results of the 2004 National Physician Survey show a trend among family physicians towards focused scopes of practice rather than spending time providing the traditional broad basket of services taught in family

medicine. **Objective:** Describe the 'focused practice' phenomenon and profile the Canadian family physicians (FPs) practicing this way. **Design:** Secondary data analysis from the 2004 National Physician Survey. **Participants:** 11,041 FPs (36% of eligible FPs in Canada). **Results:** 10 professional activities were selected to represent 'the broad basket of services traditionally taught in family medicine': gynecology, obstetrics, pediatrics, preventive medicine, adolescent medicine, chronic disease management, women's healthcare, psychotherapy, geriatrics, and palliative care. 30% of FPs indicated that they had a 'focused scope of practice', performing 1 to 3 of the 10 activities listed. This focused scope of practice is more common among male FPs, FPs over the age of 55, FPs working in Quebec, and FPs serving an inner city patient population. A significantly greater proportion of focused FPs work in academic health sciences centers compared to all other FPs ($P < 0.05$). Focused FPs are more often in solo practice (29% vs. 25%), accepting new patients (23% vs. 20%), and receiving income from salary (22% vs. 18%) or sessional/per diem/hourly payments (32% vs. 30%) ($P < 0.05$). Focused FPs are less likely to have trained (undergrad) in Canada (73% vs. 77%) ($P < 0.05$). There is no significant difference in proportional participation in on-call, hours spent in on-call/ month, average hours/week spent in total professional activities and in direct patient care, when comparing focused FPs and all other FPs ($P < 0.05$).

Conclusions: Understanding and following the changing scopes of practice of family physicians is important as it may help to inform stakeholders in the following areas: a) better response to community needs; b) HHR planning; c) curriculum development; and d) advocacy.

GG2-Reducing the Workload of Ear Syringing: Is Self-care With a Bulb Syringe an Effective Alternative?

Coppin, Richard, Overton Surgery; Wicke, Dorothy; Little, Paul

Context: Syringing the ear to remove ear wax is a significant demand on UK primary care workload. Plastic bulb syringes with which to irrigate the ear and remove wax are widely available in the US and many countries, but not in the UK. There are no published data on the effectiveness of bulb syringes. Recommending their use could reduce demands on health service resources. **Objective:** To compare the effectiveness of self use of bulb syringes with standard primary care treatment. **Design:** Randomized controlled trial with 2 year follow-up. **Setting:** Seven UK primary care centers. **Participants:** Adult patients presenting with symptoms and occluding wax. **Intervention:** Bulb syringe, ear drops and an instruction sheet. **Outcome Measures:** Self reported symptoms, nurse assessed wax clearance. **Results:** Data from 235 patients were analyzed. Half of patients (48%) using the bulb cleared their ears of wax, slightly less than compared with conventional low pressure irrigation (63%; NNT 7), and achieved a reduction in mean symptom score (scaled 0 to 6) of almost 2/3 of the irrigation group (-0.81 vs -1.26). In both

groups there were low incidences of infection (1% vs 1%) perforation (1% vs 1%) or signs of trauma (1% vs 1%), similar levels of treatment discomfort (39% vs 32%). Although irrigation was preferred by more patients, most patients using the bulb syringe would use it again (75% vs 100%) and were satisfied with treatment (71% vs 99%). **Conclusions:** Seven patients have to be treated with low pressure irrigation for one to benefit compared to bulbs, and both have a similar safety profile. Given the acceptability and efficacy of the bulb for most patients and the considerable health service resources utilized with conventional irrigation, is it time to make bulb syringing the first line treatment for ear wax?

GG3-Interprofessional Communication in Primary Care: Results of a Pilot study for the Script Program

Gotlib Conn, Lesley; Qandasan, Ivy; Beales, Jennifer; Reeves, Scott; Lingard, Lorelei; Miller, Karen-lee; Beales, Jennifer, University of Toronto

Context: This paper presents preliminary findings from a larger 30-month study designed to promote and facilitate interprofessional communication in three health care settings (General Internal Medicine, Primary Care and Rehabilitation Care). The data presented here represents work conducted from the pilot study on interprofessional communication in primary care, which explores the existing factors that facilitate and/or function as barriers to effective interprofessional communication for patient-centered care. Findings contribute to the larger study whose objectives are to design, implement, and evaluate an intervention (ie, a communication tool or process) for the improvement of interprofessional communication and collaboration in the primary care setting. **Methods:** Ethnographic researchers spent up to 10 hours per week, over the course of four weeks, in the family practice units of four distinct/heterogenous hospitals. They unobtrusively observed and informally interviewed members of the health care teams, including allied health professionals, doctors and medical trainees, nursing staff, and unit administrative staff. Data was collected in the form of handwritten field notes, which were subsequently entered electronically into Nvivo, a qualitative data analysis software program. All observation and interview data was coded for themes by one researcher, then reviewed and refined iteratively by three additional members of the research team. **Results:** Preliminary analysis identified two significant categories of communication in primary care that currently impede collaborative interprofessional group work: (1) duplicated communication, that increases the workload of some while lessening that of others, and (2) frustrated communication, particularly where professional training and patient-care are competing priorities. **Conclusion:** These findings suggest that an effective intervention for the improvement of interprofessional collaboration requires equal participation

of, and value for, all health care practitioners and trainees in the primary care setting.

GG4-Family Medicine Residents' Opinions and Knowledge of the Canadian Health System

Guyon, Ak'ingabe, University of British Columbia; Pineau, Pierre-Olivier

Context: Canada's publicly administered health system is in transition, residents in family practice (FP) are key future protagonists and analysts. **Objectives.** Examine how FP residents in British Columbia (BC) understand and evaluate their health system. **Design:** Cross-sectional survey, multiple regression analysis. **Setting:** Questionnaire distributed during mandatory retreat. **Participants:** All FP residents enrolled at the University of BC (N=144) during 2005-2006, 115 attended the retreat. None excluded. **Instrument.** Questionnaire with close-ended options and five point Likert scales (1=strongly disagree, 5=strongly agree). **Outcome Measures:** Socio-demographic characteristics, opinion on general health system performance, service provision, resource generation, financing, stewardship, fairness and responsiveness, knowledge of the Canadian Health Act and of private and public service delivery. **Results:** 54% response rate (n=78). Participants most unanimously believe that health is a social good and access should not be limited by ability to pay (4.59 std 0.61). They most strongly disagree on whether more private for profit organizations are desirable (2.69 std 1.25). While none believes that the system should be entirely rebuilt, 79% believe fundamental changes are needed. Top three priorities for health reform are: disease prevention, caring/planning for the elderly, improving access to care. While 77% believe that the current level of funding is sufficient, 67% indicate that although sufficient, funding is misused. They correctly respond to 60% (std 16%) of health system knowledge questions. Determinants of their knowledge (adjusted R² = 20.9%) are believing in financial fairness (P=0.026), that health funding is adequate (P=0.041), that competition is beneficial (P=0.038) and having received one's medical training in Canada (P=0.002). **Conclusions:** Participants forcefully assert that health is a social good. Introducing market forces in its funding or delivery is not seen as necessary. While they look forward to reform, their knowledge of the health system is poor; it appears urgent to ensure better health system education.

GG5-Physicians' Beliefs Toward Completing an Online Continuing Medical Education Program on Evidence-based Medicine

Gagnon, Marie-Pierre; Légaré, France; Frémont, Pierre; Cauchon, Michel; Dufresne, Caroline; Desmartis, Marie; Labrecque, Michel, Laval University

Context: The Continuing Professional Development Center of the Faculty of Medicine at Laval University offers an Internet-based program that aims to improve physicians' critical appraisal skills and information mastery. After the first year of

the program, only three physicians out of the 40 who willingly paid to register had completed the entire program. **Objective:** To identify the salient beliefs of physicians regarding their intention to complete this online continuing medical education (CME) program. **Design:** Descriptive study. **Participants:** All 40 physicians who registered to the program. **Outcome Measures:** Based upon theoretical concepts from social psychology (Theory of Planned Behavior), a semi-structured telephone interview guide was developed to assess respondents' attitudes, perceived subjective norms, perceived obstacles, and facilitating conditions with respect to completing this Internet-based program. Three independent reviewers performed content analysis of the interview transcripts. Findings were shared and organized according to theoretical categories of beliefs. **Results:** A total of 35 physicians (88% response rate) were interviewed. Despite perceived advantages to completing the Internet-based program, barriers remained, especially those related to physicians' perceptions of time constraints. Lack of personal discipline and unfamiliarity with computers were also perceived as important barriers. These factors are related to the perception of behavioral control. Social norms seemed to be less relevant to understand why physicians would complete or not this program. **Conclusions:** This study offers a theoretical basis to understand physicians' beliefs with respect to the completion of an Internet-based CME program to develop evidence-based medicine skills. Based upon respondents' insights, several modifications were done to enhance the uptake of the program by physicians and therefore, its implementation.

GG6-Use of the Internet by Rural Appalachian Health Care Providers: Assessment of Technological Infrastructure and Behaviors

Ferguson, Kaethe, Old Dominion University; Tudiver, Fred; Knight, W. Hal; Edwards, Joellen; Renner, Jasmine

Context: The Internet may reduce professional isolation for rural primary health care providers. However, current computer and Internet access in Appalachia and the technology-related behaviors and attitudes of Appalachian primary care professionals are unknown. **Objective:** This study examined Internet access, behaviors, and attitudes of Appalachian family physicians and advanced practice nurses. **Design:** Cross-sectional design using a self-administered survey. **Setting:** Southern and central Appalachian primary care practices. **Participants:** Convenience sample of 429 graduates of East Tennessee State University's family medicine residency and advanced practice nursing programs. **Instrument:** Content validity of the Health Care Providers' Use of Technology Survey, containing 105 items, was established by primary care research experts and pilot tested by 12 rural and urban family physicians and nurse practitioners. The Dillman survey method included a pre-notice letter, two survey

mailings, and post card and telephone follow-ups. Data were analyzed using SPSS. **Results:** Two hundred seventy-nine providers (65%) returned surveys. Respondents were similar to the total population in gender, discipline, age, and percent in rural practice. Workplace computer access was common; 60% had sole access and 40% shared access with 83% having broadband, 14% dial-up, and 3% no Internet. Although rural providers were more likely than urban to have slower dial-up access, they regularly used the Internet. Over 75% worked at home using the Internet; 34% reported dial-up and 66% broadband connections. Although 50% used the Internet for continuing education in 2004, most preferred in-person workshops or print-based modes of continuing education; 59% e-mailed daily and 80% accessed medical information via the Internet. Other Internet uses included online journals, patient information, professional association communication, filing insurance, and writing prescriptions. **Conclusions:** Appalachian health care providers access the Internet for a variety of professional activities daily. Barriers to the use of new technologies lie more in attitudes than in technology access.

GG7-Patients' Knowledge of Warfarin: What They Really Know

Kumar, Kaparaboyana, University of Texas Health Science Center at San Antonio

Context: Warfarin (Coumadin) is an oral anticoagulant widely used in the United States. As such family physicians are often treating patients taking warfarin and are in a position to help educate patients about prevention of many complications associated with the drug. Warfarin has a narrow therapeutic index and is associated with potentially life threatening complications. This study was conducted to help family physicians understand what knowledge deficits patients have regarding warfarin therapy. **Objective:** To evaluate the patients' knowledge of warfarin complications and symptoms of some serious complications. **Design:** Descriptive cross-sectional study. **Setting:** Ambulatory anticoagulation clinic in a University Hospital. **Participants:** Patients at the anticoagulation clinic who take warfarin. **Exclusion Criterion:** Patients with dementia. **Instrument:** Questionnaire in English and Spanish. Questions were directed to elicit knowledge level of warfarin therapy, patients' comfort level with their knowledge, and sources of the knowledge. **Results:** One hundred seven patients completed the survey. Possible knowledge score 0-10. Median score was 7.0 and Mean score was 6.79 (6.37- 7.21, CI 95%). 62 (58%) patients scored seventy percent or higher. 72% of patients were very comfortable with their knowledge. Only 56% of patients knew about life threatening complications, only 60% knew effect of green leafy vegetables with warfarin and 33% of patients did not know that aspirin increased warfarin complications. **Conclusion:** Overall patients' knowledge level was not satisfactory. Although most patients said their doctor and nurse explained warfarin therapy to them, only about half

knew of the serious complications. Further studies are needed to design innovative patient educational strategies to improve patients' knowledge of warfarin to prevent complications.

CANCER RESEARCH II (HH1-HH7) *CORONADO II*

HH1-Statins and Cancer: A Meta-analysis of Case Control Studies

Taylor, Marcia, MUSC; Wells, Brian; Smolak, Michael

Context: Studies demonstrate that 3-HMG-CoA reductase inhibitors (statins) block the growth of malignant cells in vitro. A meta-analysis of randomized control trials (RCTs) failed to show a reduced risk of cancers in statin users. However, these trials had an average follow-up of only 4 years, which is unlikely to be of adequate duration to prevent most cancers. Case-control studies allow this relationship to be explored over longer periods of time. **Objective:** To determine the association between statins and breast cancer, colon cancer, lung cancer, prostate cancer, or any cancer in case control studies. **Design:** Meta-analysis. **Setting:** A literature search was performed in Medline, Medline In-Process and Other Non-Indexed Citations, CINAHL, EMBASE, Web of Science, Scopus, and Biosis to identify case control studies that correlated statin use with cancer incidence at any site. Studies were excluded if they did not provide odds ratios and 95% confidence intervals. **Patients or Other Participants:** 15 case-control studies with 71,141 incident cancer cases and 2,410,914 controls. **Intervention/Instrument:** Statin Usage. **Outcome Measures:** Combined odds ratio(OR) of statins and any cancer, breast cancer, colon cancer, lung cancer, and prostate cancer. **Results:** A funnel plot did not suggest a significant absence of unpublished data. The studies were significantly heterogeneous ($p < 0.00001$) thus a random effects model was utilized. The pooled OR and 95% confidence intervals for statins users and cancer were as follows: any cancer 0.71 (0.58-0.86), breast cancer 0.91 (0.67-1.23), colon cancer 0.89 (0.82-0.97), lung cancer 0.75 (0.50-1.11), and prostate cancer 0.68 (0.39-1.17). **Conclusion:** A significant association between statin usage and any cancer was found, but when stratified only the association with colon cancer remained. These results add to the growing basic science research that suggests statins may have a chemoprotective cancer effect. Statins should not be recommended as chemopreventive agents based on this data, but RCT with longer follow-up times are needed to assess this relationship.

HH2-Brain Tumor Mortality and Radiation Exposure: A Case Control Study of Nuclear Workers

DiMarco, Judith, University of Texas Medical Branch; Wilkinson, Gregg; Freeman, Daniel

Context: Patterns of occurrence and potential causes of brain tumors (BTs) have been subjects of controversy since

increases were noted in the 1960s. BTs have been associated with high dose radiation; however, debate over effects of cumulative low-dose levels (LDR) continues. Primary care physicians need to be well-versed in risks associated with occupational exposures. **Objective:** Is cumulative exposure to LDR associated with mortality from primary BTs? **Design:** A nested case-control study from a pooled cohort of 27,551 nuclear workers compared exposure for 61 cases of death from primary BTs with 244 controls matched on site, birth date, length of employment, to each case (4:1 ratio). Data were obtained from the Comprehensive Epidemiologic Data Resource (CEDR). Matched analyses used logistic regression to control for potential confounders. **Setting:** Nuclear weapons facilities in Colorado and New Mexico. **Participants:** White male nuclear workers who were radiation monitored. **Outcome Measures:** Annual radiation doses (mrem) and cause of death were reported in CEDR. Cumulative exposure of at least 1 rem was required for a study subject to be defined as exposed. BT cause of death = ICD8 191, 192, 225, 238. **Results:** Results are consistent with the hypothesis that cumulative exposures to low levels of ionizing radiation, even at doses generally considered safe, may increase the risk of death from BT. Elevated odds ratios are observed for workers from the combined sites (OR=4.1; 95% CI=1.5-11.4, $P=0.01$), for Rocky Flats (OR=5.0; 95% CI=1.5-16.6, $P=0.01$), and for all workers employed >2 years (OR=4.3; 95% CI=1.5-12.5, $P=0.01$). A dose response relationship between LDR and BT mortality is also observed for all sites combined ($p < 0.01$), Rocky Flats ($P < 0.03$) and Los Alamos ($P < 0.05$). **Conclusions:** Cumulative occupational exposure to ionizing radiation at doses lower than current safety standards allow were associated with excess mortality due to brain tumor in the study population. Should occupational safety policy makers redefine safe levels of exposure?

HH3-The Effects of Teamwork and Reminders on Colorectal Cancer Screening in Primary Care Practices

Hudson, Shawna, Cancer Institute of NJ/UMDNJ-RWJ Medical School; Ohman-Strickland, Pamela; Ferrante, Jeanne; Hahn, Karissa; Cunningham, Regina; Crabtree, Benjamin

Context: While cancer screening is generally increasing in the US, colorectal cancer (CRC) screening remains low. Most CRC screening interventions focus either on patients or individual physicians without examining the office context in which CRC screening is implemented. **Objective:** To determine whether primary care practices that use other staff for health education have higher screening rates than practices that rely primarily on the individual physician. **Design:** Cross-sectional practice surveys and medical record reviews. **Setting:** 22 New Jersey and Pennsylvania primary care practices. **Patients:** 794 men and women who were eligible for CRC screening (age 50-70). **Outcome Measures:** Patient receipt of CRC screening (fecal occult blood test within 1 year, sigmoidoscopy or barium enema within 5 years, or

colonoscopy within 10 years). **Results:** Overall, 31.2% (n=248) of patients received CRC screening. Practice screening rates ranged from 10.3% to 64.9%. Practices that used nursing or health educator staff to provide behavioral counseling to patients on topics such as diet, exercise or tobacco use were significantly more likely to have higher CRC screening rates ($z=7.30$, $p < 0.0001$). In these practices, patients had 3.05 times increased odds of CRC screening than those in other practices (95% C.I., 2.26-4.12). In addition, reminder systems were significantly associated with CRC screening ($z=4.95$, $P < 0.0001$). In practices that used reminder systems, patients had 2.56 times increased odds of CRC screening than others (95% C.I., 1.76-3.71). Patient characteristics that were significantly associated with higher CRC screening included male gender ($z=2.63$, $P=0.0086$), older age ($z=2.18$, $P=0.0293$) and absence of heart disease ($z=2.41$, $P=0.0159$). **Conclusions:** Practices that use non-physician staff to provide patient education and to remind patients about screening are likely to have higher CRC screening rates. These findings suggest that to achieve better CRC screening rates, interventions should engage and capitalize on the contributions of non-physician practice members.

HH4-Routine Follow-up of Prostate Cancer: Results From a Nationally Representative Sample

Schellhase, Ken, Medical College of Wisconsin; Sparapani, Rodney; Laud, Purushottam; Nattinger, Ann

Context: There are 1.5 million prostate cancer survivors in the US. Little is known about the quality of routine followup care provided to men in the survivorship phase of prostate cancer (“survivors”). Professional guidelines recommend prostate specific antigen (PSA) testing every 6 months for survivors. **Objective:** To describe national patterns of routine prostate cancer followup care, with particular attention to racial disparities. **Design:** Retrospective population-based cohort study. **Setting:** Patients in the Surveillance, Epidemiology, and End Results (SEER) cancer registry which comprises 5 entire states and 6 metro areas representing 14% of US population. **Participants:** 19354 men age ≥ 65 years diagnosed with Stage 1-3 prostate cancer between 1995 and 1999 who were alive for at least 6 months after cancer treatment. Patients were continuously enrolled in Medicare, and their Medicare claims files were linked to the SEER registry datafile. **Outcome Measures:** Receipt of PSA testing at least once every 6 months after completing cancer treatment. **Results:** At 5 years of followup, less than 10% of men had received all recommended PSA testing. In a logistic regression analysis adjusted for comorbidity, treatment type, and socioeconomic status, Black men were 17% less likely (odds ratio 0.83, 95% CI: 0.79, 0.87) and Hispanic men were 29% less likely (odds ratio 0.71, 95% CI: 0.66, 0.76) to receive PSA testing when compared to White men. **Conclusions:** There are gaps in the overall quality of

prostate cancer followup care in older men, as evidenced by PSA testing rates. Substantial racial disparities in PSA testing exist.

HH5-Qualitative Study of Patients’ and Carers’ Experiences of Care for Prostate Cancer

Baker, Richard, University of Leicester; Sinfield, Paul; Agarwal, Shona; Mellon, Killian; Steward, Will; Kockelbergh, Roger; Colman, Andrew; Tarrant, Carolyn; Sproston, Kerry

Context: A measure of patients’ experiences of prostate cancer care is being developed in the UK to evaluate the impact of redesigned services. **Objective:** To identify the experiences of patients and carers of generalist and specialist care for prostate cancer in order to inform the content of a patient experience measure. **Design:** Qualitative interviews of samples of patients and carers. **Setting:** Two prostate cancer services. Patients: 35 patients attending prostate cancer services and 10 carers, the patients being sampled to ensure a range by age, ethnic group and stage of care. **Instrument:** A semi-structured interview in which patients and carers were asked about their experiences at initial presentation, investigation and diagnosis, decision making about treatment, treatment, and follow up care. **Results:** Carers were often important in encouraging the patient to present their symptoms to a family physician. Patients and carers reported that family physicians did not give adequate explanations about the need for tests or assessment by a urologist. Explanations by urologists about what to expect during investigation were also often limited, and some patients had not been aware that they were having tests for prostate cancer. Patients were shocked by the diagnosis of cancer and found involvement in treatment decisions difficult. Carers needed information about treatment options in order to support their partners. Information was also needed by both patients and carers about what to expect during treatment, who to contact for support, and self-care after treatment and during long-term monitoring. **Conclusions:** Patients and carers need more information and support throughout care for prostate cancer. Some also want more involvement in decision making. Family physicians could play a greater role in ensuring patients and carers have the information they need at all stages of care.

HH6-Colorectal Cancer Screening Among Obese Patients in Primary Care Practices

Ferrante, Jeanne, UMDNJ-New Jersey Medical School; Hahn, Karissa; Hudson, Shawna; Ohman-Strickland, Pamela; Scott, John; Crabtree, Benjamin

Context: Obesity is associated with increased colorectal cancer (CRC) incidence and mortality. Survey studies have shown that obese women are less likely to receive colorectal cancer screening. It is unknown if this is true among patients in primary care practices. **Objective:** Using chart audit data, we examined the relationship between obesity and CRC screening among patients in family medicine practices. **Design:** Retrospective chart review study of baseline data from

ULTRA (Using Learning Teams for Reflective Adaptation), an intervention trial to improve adherence to guidelines for multiple chronic diseases. **Setting:** Twenty-three suburban New Jersey and Pennsylvania family medicine practices. **Patients:** Lists of patients with the following conditions were generated in each practice: asthma, coronary artery disease, diabetes, hypertension, and any other reason. Approximately 100 patients were randomly selected from each practice. Patients aged 50 and over (n=1334) were selected for this analysis. **Outcome Measures:** Receipt of colorectal cancer screening (fecal occult blood test within 1 year, sigmoidoscopy within 5 years, colonoscopy within 10 years, or barium enema within 5 years) among obese and nonobese patients. **Results:** Overall 40% of the patients were obese, and 29% received colorectal cancer screening. After controlling for age, gender, total number of co-morbidities, and number of visits in the past two years, obese patients had 24% decreased odds of being screened for CRC compared to nonobese patients (OR 0.76, 95% CI, 0.63- 0.92). The relationship of obesity and CRC screening did not differ according to gender. Number of visits (OR 1.04, 95% CI, 1.02- 1.07) and male gender (OR 1.58, 95% CI, 1.24- 2.00) was associated with increased odds of receiving colorectal cancer screening. **Conclusions:** Identification of clinician and patient barriers to CRC screening is needed, particularly in obese patients, so that effective interventions may be developed to increase screening in this high-risk group.

HH7-Gaps in the Clinical Follow-up of Abnormal Mammograms

Smits, Ariel, Oregon Health & Science University; Goodrich, Martha; Eliassen, M. Scott; Poplack, Steven; Wells, Wendy; Dietrich, Allen; Carney, Patricia

Context: Studies in HMO populations have found a concerning proportion of abnormal mammograms lack appropriate follow-up. Failure to follow-up abnormal mammograms reduces the utility of mammography as a screening tool for the early diagnosis of breast cancer. **Objective:** To identify the rate of lack of follow-up of abnormal screening mammography in a community based setting. **Design:** Population-based cross-sectional. **Setting:** New Hampshire community practices. **Patients:** New Hampshire women with abnormal mammograms (ACR 0, 4 or 5) performed between 3/1/00 and 2/28/01 included in a population-based mammography registry. **Instrument:** Mammogram dates and interpretations from the New Hampshire Mammography Network (NHMN). Information requested by mail from primary care clinicians (PCCs) for unresolved abnormal screening mammograms. **Outcome Measures:** Proportion of abnormal mammograms without adequate follow-up (further imaging follow-up obtained within 45 days; breast pathology information obtained within 90 days). **Results:** Of 91,380 women receiving mammography, 5,756 (6.3%) had abnormal mammograms.

The NHMN captured follow-up on 4,345 (75.5%) of these, leaving 1,411 (24.5%) women unresolved abnormal mammograms in the study group. PCCs returned surveys for 1100 (78.0%) women in the study group: information on resolution of the abnormal mammogram was available for 530 (48.2%) women but was lacking for 570 (51.8%) women. Of these 570, 241 (42.3%) were will active patients in the PCC's practice but no record of any follow up imaging or breast pathology was found to exist. **Conclusion:** Gaps appear to exist in the follow-up of abnormal mammograms in community settings. More work needs to be done to improve the systems in place in community practice for follow up of abnormal results.

CARDIOLOGY (III-I7)

AGAVE II & III

II1-How Well Can Primary Care Physicians, Nurses, or Computer Software Detect Atrial Fibrillation on an ECG?

Hobbs, F.D.Richard, University of Birmingham/MidReC; Mant, Jonathan; Fitzmaurice, David; Jowett, Sue; Holder, Roger

Context: Atrial fibrillation (AF) is an important risk factor for stroke present in about 5% of people over the age of 64, but may be asymptomatic. It can be diagnosed with a simple electro-cardiograph (ECG) which can be performed in primary care, but there are few data on the ability of primary care physicians (GPs) to read ECGs and so correctly diagnose AF. The aim of this study was to assess the accuracy with which GPs, primary care nurses (PNs) and computer software can diagnose AF. **Methods:** 50 general practices in England were recruited to participate in a trial of screening for AF. During the study, 2,592 ECGs were performed on patients aged over 64 in these practices - 631 in people with an irregular pulse and the rest following a screening invitation. The ECGs were all read by interpretation software and independently by two cardiologists (the reference standard). 1,696 ECGs were randomly selected and batches of 33 or 34 were sent to the 50 participating GPs and PNs, who were asked to record whether or not AF was present. **Results:** Prevalence of AF (from cardiologist interpretation) was 8.4%. GPs correctly diagnosed 79 of 99 cases of AF (see table), but of 193 GP diagnoses of AF, 114 were in sinus rhythm (SR). PNs detected a similar proportion of the cases of AF, but had a lower positive predictive value. The software was significantly more accurate than GP or PN ECG interpretation, but missed 26 cases of AF (13%), and out of 200 software diagnoses of AF, 21 (10%) showed SR. **Conclusion:** Many GPs cannot detect AF reliably on an ECG, and interpretative software is not sufficiently accurate to circumvent this problem. Programs for community screening for AF need to factor in the reading of the ECG by appropriately trained individuals. **Table:** Interpretation of ECGs by reader Sens Spec PPV NPV General Practitioner 79.8% 91.6% 40.9% 98.4 Practice Nurse 77.1% 85.1% 27.2% 98.1 Computer Software 87.3% 99.1% 89.5% 98.8

Sens=Sensitivity, Spec=Specificity, PPV= Positive predictive value, NPV= Negative predictive value.

II2-Development and Confirmation of a Prognostic Model for Cardiovascular Mortality in the NHANES I Epidemiologic Follow-up Study

Keeley, Robert, University of Colorado Health Sciences Center; Dickinson, Miriam; Davidson, Arthur

Context: Standard cardiovascular risk scores developed in homogeneous populations may not perform well in more heterogeneous populations. **Objective:** Develop and confirm a multivariate cardiovascular risk assessment tool in a heterogeneous population. **Design:** Secondary analysis of the First National Health and Nutrition Examination Survey (1971-1975) linked to follow-up data from the Epidemiologic Follow-up Study (1992). We conducted a moderator-mediator analysis, followed by recursive partitioning to describe subgroups of participants at high, medium, or low risk. Multivariate predictors were confirmed with logistic regression analyses in the a second non-overlapping dataset from the same population. **Setting:** Cross-sectional population-based study representative of the non-institutionalized United States population aged 25 to 74 years. **Participants:** Participants were excluded if they reported history of myocardial infarction or stroke, and if their vital status was not ascertained in the 1992 follow-up. The sample was randomly divided into an exploratory cohort of 6796 individuals, and a confirmatory cohort of 6735. **Main Outcome Measure:** Total cardiovascular mortality. **Results:** In an average of 16.4 years of follow-up, there were 504 deaths (7.42%) ascribed to cardiovascular disease in the exploratory cohort, and 500 (7.42%) in the confirmatory cohort. Of forty putative predictors, 16 were significant in Spearman correlations. Moderator-mediator analyses pared the list to an overlapping education-age risk factor and hemoglobin. Calibration of the model was good, with close agreement between observed mortality in the exploratory and confirmatory cohorts. The model showed excellent discrimination with a c-statistic of 0.80 in the exploratory cohort, and 0.79 in the confirmatory cohort. **Conclusions:** This prognostic model, incorporating age, educational attainment, and hemoglobin, accurately stratified a heterogeneous population of adults into subgroups at varying risk for cardiovascular mortality. Follow-up studies might investigate possible mediators of the effect of education, such as adequate treatment of blood pressure or cholesterol.

II3-Capable Practices: Does Practice Organization and Functioning Affect Quality of Chronic Disease Care?

Harris, Mark, University of New South Wales; Proudfoot, Judy; Beilby, Justin; Powell Davies, Gawaine; Holton, Christine; Amoroso, Cheryl; Barton, Chris; Jayasinge, Upali; Bubner, Tanya

Context: Despite programs and initiatives to improve the quality of chronic disease care, there is still evidence for a significant gap between optimal and actual practice. The Chronic Illness model has identified lack of critical capacities including the delivery system design, decision support and clinical information systems as responsible for this gap. **Objective:** To determine the degree to which aspects of general practice capacity are associated with quality of care for patients with type 2 diabetes, asthma, hypertension or ischaemic heart disease. **Design/Setting:** The study was conducted in 97 general practices across all states in Australia except Western Australia and the Northern Territory. Analysis was conducted using multiple regression, and multilevel analysis. **Participants:** 247 GPs, 403 practice staff and 7,505 patients with chronic illness (diabetes, asthma or cardiovascular disease). **Outcome Measures:** Quality of evidence based care as assessed by structured interview with the GPs and Patient survey (General Practice Assessment Survey). **Results:** Quality of care varied significantly between practices. All four aspects of practice capacity studied – information system maturity, business management and financial planning, team working and team climate, and clinical linkages between the practice and other services – were associated with improved quality of care. Small practices tended to have less capacity but provide better care. Patients with chronic disease gave favourable assessments of practices with good team climate and clinical linkages with other services. **Conclusions:** Quality of chronic disease care in Australian general practice is associated with some key aspects of practice capacity. These include two components of the chronic illness model –information system maturity and delivery system design. The interaction with size of practice is relevant as practices become larger and involve a wider range of other health professionals.

II4-Comparison of Primary Care Delivery Models in the Screening, Treatment, and Control of Hypertension

Tu, Karen, University of Toronto/ICES; Cauch-Dudek, Karen; Chen, Zhongliang

Context: The Ontario government has developed and introduced a number of alternative models for primary care delivery. However, direct comparison and evaluation of the different models on ideal patient outcomes has yet to occur. **Objective:** To compare performance of physicians practicing under different models of care, on the screening, treatment and control of hypertension. **Design:** A retrospective chart review study performed from November 2005 to August 2006 collecting information from cumulative patient profiles and progress notes 3 years prior to the abstraction date. **Setting:** 45 primary care physician offices in each of fee-for-service (FFS), primary care networks (PCN) (capitation) and community health center (CHC) (salary) type primary care models in Ontario, Canada. **Patients:** 28 randomly selected adult patient charts in each of the 135 primary care physician offices. **Outcome Measures:** Hypertension screening,

treatment and control rates. **Results:** Overall 92.5% of patients attending their primary care physician office have had a blood pressure measured at least once in three years with no significant difference between models (CHC 93.4%, FFS 93.4%, PCN 90.6% $P=0.2008$). Overall 86.4% of patients with hypertension were on at least 1 blood pressure medication (CHC 81.1%, FFS 87.4%, PCN 90.7%, $p < .05$) and 55.7% were on at least 2 blood pressure medications (CHC 47.5%, FFS 60.0%, PCN 59.7%, $P < .05$). Using the most recent last average blood pressure reading, 44.5% of patients with hypertension were under target with PCN physician patients having the highest blood pressure control rates (CHC 37.8%, FFS 40.9%, PCN 55.0, $P < .05$). Patterns were similar even after adjusting for age, gender and socioeconomic status. **Conclusions:** From our data it appears that screening rates for hypertension are uniformly good across the three models of care. Treatment and blood pressure control rates for patients with hypertension are better in patients under the care of primary care network physician/capitation type primary care model.

II5-Antihypertensive Therapy to Prevent Cardiovascular Morbidity and Mortality in Ethnic Minorities: A Systematic Review

Park, Ina, University of Minnesota; Taylor, Anne

Context: Premature cardiovascular morbidity and mortality due to hypertension occurs more frequently in ethnic minorities compared to Whites. Efforts to reduce this disparity might benefit from cardiovascular disease prevention research which allows for ethnicity-based comparisons of a therapy's impact. **Objectives:** Systematically review the number of Blacks, Asians, Hispanics, and Native Americans included in recent trials of antihypertensive drugs. In these trials, describe findings regarding efficacy of antihypertensive drugs in reducing primary cardiovascular morbidity and mortality outcomes in different ethnic groups. **Instrument:** MEDLINE, EMBASE, LILACS, African Index Medicus, and the Cochrane Library were searched from January 2000-December 2005. **Participants:** Included were multi-center, randomized controlled trials testing the efficacy of antihypertensive drugs (versus placebo or other drugs) in preventing one (or composite) of these primary endpoints: myocardial infarction, stroke, revascularization, or cardiovascular death. Two reviewers independently assessed studies for inclusion and quality. **Results:** Eighteen studies met inclusion criteria. Eleven had non-White participants, and six reported results by ethnic group. Two trials (ALLHAT, INVEST) with substantial Black/Hispanic participants found similar primary outcomes between ethnic groups, especially when multiple drugs were combined to reach blood pressure goals. One trial (PROGRESS) compared Asians to non-Asians, reporting that angiotensin-converting enzyme inhibitors were equally effective for preventing stroke in both groups. In the LIFE trial, post-hoc analyses revealed

different outcomes for Blacks and non-Blacks, raising questions about the utility of angiotensin-receptor blockers as first-line antihypertensive agents in Blacks. Two studies, conducted exclusively in Asians (JMIC, FEVER), found calcium-channel blockers were effective in preventing cardiovascular outcomes. No trials described cardiovascular outcomes in Native Americans. **Conclusions:** Only four trials made inter-ethnic group comparisons, three of these demonstrated similar cardiovascular outcomes for minorities and Whites. To determine optimal prevention therapies, increased minority participation in future studies is needed, especially in head-to-head trials comparing different classes of antihypertensive treatment.

II6-The Stroke Offspring Study (SOS): Evidence for a Stroke Prevention Strategy in Primary Care

Hart, Nigel, Queen's University Belfast; Cupples, Margaret; Wiggam, Ivan; Yarnell, John

Context: A parental history of stroke is a risk factor for stroke in their offspring. It is unclear whether the offspring of stroke patients have a higher prevalence of modifiable stroke risk factors than the general population. This knowledge would be important to justify screening programs in stroke patients' offspring. **Objective:** The study aimed to determine whether the offspring of stroke patients had a higher prevalence of modifiable stroke risk factors than the general population. **Design:** Case-control study. **Setting:** Participants were recruited from 11 general practices representing 6% of the population of Northern Ireland. Practices were chosen to provide a mix of practice size, socioeconomic, ethnic, religious and urban/rural characteristics. **Participants:** Questionnaires, asking about parental history of stroke, were sent to 300 randomly selected individuals aged 40-65 years from each practice. From the returns, those with a parental history of stroke (cases) were matched on age, gender and socioeconomic status to those with no parental history of stroke (controls). **Intervention:** The matched pairs were invited to meet the researcher at their practice address for risk factor screening. **Outcome Measures:** Attendees answered questions about smoking, alcohol and medical history and completed diet and exercise questionnaires. Height, weight, blood pressure, serum lipids and glucose were measured. **Results:** 433 individuals were screened and yielded 199 case-control pairs (398 individuals). Systolic and diastolic blood pressures were significantly higher in the cases than in paired controls (systolic 146.2 vs 140.6 mmHg ($p < 0.01$); diastolic 87.7 vs 85.0 mmHg ($P=0.014$)). Cases consumed more alcohol than their paired controls (13.7 vs 10.0 units/wk ($P < 0.01$)) but did not differ significantly in respect of BMI, lipids, diabetes, diet or exercise. **Conclusions:** Given the importance of blood pressure as a risk factor for stroke these results support the early screening of the offspring of stroke patients for raised blood pressure.

II7-Turning Back the Clock: The Benefits of Adopting Healthy Lifestyle Habits Later in Life

King, Dana, Medical University of South Carolina;
Mainous, Arch; Geesey, Mark

Context: Lifestyle factors are associated with all-cause and cardiovascular disease (CV) mortality. Few studies have investigated the consequences of switching to a healthy lifestyle. Objective: To determine the prevalence of healthy lifestyle habits in a middle-aged cohort, and determine the subsequent rates of CV and mortality among those who maintain or switch to healthy lifestyle habits. Design/Setting/Participants: Cohort study in a diverse sample of adults age 45-64 at the outset, the Atherosclerosis Risk in Communities survey, with 9-year follow up. Outcome Measures: CV events and all-cause mortality. Results: Among the 13263 participants with available follow-up data, 953 (7.2%) had all of the following healthy lifestyle habits: ate at least five fruits and vegetables a day, walked 150 minutes a week (or more), were not obese, and did not smoke. After 9 years, 13.9% of those with an initially healthy lifestyle had experienced an event (CVD or death), compared to 21.7% of the non-healthy lifestyle group (?2 p <0.001). Of the 93% who were not practicing a healthy lifestyle at the beginning of the study, 588 (5.0%) had adopted a healthy lifestyle 6 years later. New adopters of healthy lifestyle experienced a 39% relative risk reduction (8.8% to 5.4%) of having a CVD event or death over the next 3 years (?2 P=0.011). Conclusions: Few middle-aged adults practice the combination of healthy lifestyle habits of eating right, exercising, maintaining an appropriate weight, and not smoking, and few adopt a new healthy lifestyle past age 45. However, a newly adopted healthy lifestyle is associated with a prompt benefit in CVD reduction and mortality for those who adopt this lifestyle after the age of 45. Public policy encouraging healthy lifestyle habits should be supported more vigorously in middle-aged adults.

HEALTH CARE DELIVERY/HEALTH SERVICES RESEARCH III

JOSHUA TREE I

JJ1-Who Delivers Recommended Preventive Care? An Analysis of Physician and Practice Level Characteristics of Family Physicians in Southwestern Ontario

Thind, Amardeep, University of Western Ontario; Stewart, Moira; Feightner, John; Thorpe, Cathy; Burt, Andrea

Context: The Canadian Task Force on Preventive Health Care (CTFPHC) provides guidelines for evidence based provision of preventive care. It is important to quantify the appropriate provision of such preventive care in family practice, and to understand its determinants. Objective: We analyzed data from a survey of family physicians in Southwestern Ontario to assess physician and practice level characteristics associated with delivery of recommended

preventive care as per CTFPHC guidelines. Design: A cross-sectional analysis of data gathered as part of a census of all family physicians in the ten counties in Southwestern Ontario. In Fall 2004, the survey was mailed to 1044 family physicians in the region, of which 70.0% responded. Generalized ordered logistic regression model was fitted to the data. Setting: Primary care providers in Southwestern Ontario. Participants: 731 family practitioners. Outcome Measures: Family physicians were asked in detail about their preventive care practices, and based on their reported performance of the A, B, and D recommendations for specific clinical scenarios, a three level ordinal dependent variable was created. Results: Female family physicians had 92% higher odds of delivering recommended preventive care compared to male family physicians. International medical graduates had 48% lesser odds of delivering recommended preventive care compared to Canadian medical graduates. Family physicians practicing in groups, and those in practices organized as family health teams or family health groups also had statistically significant higher odds of delivering recommended preventive care. Conclusions: Our results indicate that residency programs preparing international medical graduates for practice in Canada need to strengthen their didactic focus on the CTFPHC guidelines. Our results also lend support to Ontario's goal of organizing family physicians to practice in groups, either as family health teams or family health groups, as our research indicates that these practice modalities are associated with better preventive care provision.

JJ2-Trade-offs in "Unnecessary" Physical Exam

Sylvia-Bobiak, Sarah, Case Western Reserve University;
Stange, Kurt

Context: Eliminating non-evidence based physical examination has been proposed as one way for physicians to create time to take on important unaddressed medical concerns. Objectives: To determine to what extent unnecessary physical exam is performed and is associated with patient satisfaction and the doctor-patient relationship. Design: A cross-sectional study design involving direct observation of outpatient visits. Setting: 84 community family practices in Northeast Ohio. Participants: 138 practicing family physicians in northeast Ohio. Consecutive patients seen on designated observation days were enrolled if they gave verbal consent. Outcome Measures: Patient satisfaction measured with the MOS 9-item visit rating scale. Relationship was assessed with items from the Components of Primary Care Index. Unnecessary physical exam was defined as observed exam procedures unrelated to patient illness, symptoms or evidence-based preventive care. Results: 89% of patients agreed to participate. Of 4454 patients 3283 (75%) completed the patient questionnaire. In 65% of the visits, at least one unnecessary exam was performed. Heart (44%), lung (41%), head/ neck (24%), and abdominal exams (22%) were the most commonly performed unnecessary exams. Visits that include unnecessary exam were nearly two minutes longer.

Performance of any unnecessary exam was associated with greater total satisfaction and satisfaction with time spent with the physician. Patients who received unnecessary examination strongly agreed they had been through a lot with their physician, that the physician understood their health needs, and they wanted one physician to coordinate all their health care. Conclusions: During a time when physicians are feeling more and more restricted by time constraints during patient visits, excluding unnecessary exam may create additional time to address other concerns. However, this time may come at the expense of patient satisfaction and the doctor-patient relationship.

JJ3-Determinants of Waiting Time for a Routine Family Physician Consultation in Southwestern Ontario

Thind, Amardeep; Thorpe, Cathy; Burt, Andrea; Reid, Graham; Harris, Stewart; Brown, Judith Belle; Stewart, Moira, The University of Western Ontario

Context: Waiting times are a reality in Canada's publicly financed single-payer health care system. There is ample data about waiting times for specialized investigations and procedures, but little is known about waiting times to see family physicians, and determinants of this wait. Objective: To analyze survey data for the determinants of waiting time to see a family physician for a routine consultation in Southwestern Ontario. Design: A cross-sectional analysis of data gathered as part of a census of all family physicians in the ten counties in Southwestern Ontario. In Fall 2004, the survey was mailed to 1044 family physicians in the region, of which 70.0% responded. A logistic regression model was fitted to the data, and the odds ratios were converted to risk ratios. Setting: Primary care providers in Southwestern Ontario. Participants: 731 family practitioners. Outcome Measures: Waiting time for a routine outpatient consultation with a family practitioner. Results: Female family physicians were 36% more likely to have a longer waiting time compared to male family physicians. Physicians seeing more than 150 patients per week were 36% less likely to have a longer waiting time compared to physicians who saw less than 100 patients per week. Involvement in teaching increased the likelihood of having a longer waiting time by 52%, while physicians serving rural and isolated communities were 36% more likely to have a longer waiting time compared to physicians serving urban communities. Conclusions: Physician gender, weekly number of patients seen, teaching involvement and population served are determinants of waiting time. Of concern was the finding that rural communities had longer waiting times, and suggests an access problem facing rural Southwestern Ontario. From a policy perspective, this finding is amenable to intervention, but given the difficulty of recruiting new physicians to the area, there is no ready panacea.

JJ4-The Bridging Role of Nurse Practitioners in Ontario Community Health Centers

Bickford, Julia, The University of Western Ontario; Brown, Judith Belle; Moss, Karen; Gillis, Lorelee

Context: Nurse practitioners play a key role in bridging interdisciplinary teams in Community Health Centers (CHCs). Objectives: This paper explores the role of nurse practitioners (NPs) in Ontario CHCs as well as some of the challenges and solutions regarding their role. Design: A phenomenological qualitative study of 78 semi-structured in-depth interviews. An iterative analysis process was used to examine the verbatim transcripts. Setting: Thirteen Ontario CHCs. Participants: A maximum variation sample of 78 participants from 13 CHCs (10 urban and 3 rural sites). Participants included a variety of professions (ie nurse practitioners, family physicians, social workers, managers). Outcome Measures: Participants experiences and perceptions of the role of nurse practitioners in Ontario CHCs. Results: The analysis of the data revealed that NPs serve as a key link between the clinical and health promotion/community development teams. Thus, the NPs' role as a "straddler" is crucial to CHCs as they strive to strengthen interprofessional cohesion and collaboration among staff. The data indicate three key challenges that NPs experience in CHCs: 1) lack of acceptance and understanding of the NP role by the public and specialists; 2) lack of time for consultation between NPs and family physicians (FPs); and 3) unclear lines of accountability between NPs and FPs. The interviews also revealed solutions for overcoming these challenges. Participants emphasized the need to change referral policy, more public education regarding the role of NPs, designated/protected time for consultation between NPs and FPs, and clear guidelines outlining NP and FP responsibilities. Conclusions: As new interprofessional primary health care teams begin to form in the Ontario health care system, it behooves us to pay attention to the role of NPs and to the challenges and solutions experienced by CHCs.

JJ5-Implementation of Electronic Health Records in Southwestern Ontario DELPHI Family Practices:

Research Team Perspectives

Terry, Amanda, The University of Western Ontario; Thorpe, Cathy; Stewart, Moira; Brown, Judith Belle; Harris, Stewart; Reid, Graham; Thind, Amardeep

Context: The significant challenges associated with the implementation of electronic health records (EHRs) in family practice may be ameliorated through a better understanding of specific experiences related to EHR implementation. Objective: To ascertain the factors influencing and sustaining the implementation of EHRs in family practices participating in the DELPHI (Delivering Primary Healthcare Information) project. Design: Qualitative study using key informant interviews and a focus group. Setting: Center for Studies in Family medicine, The University of Western Ontario. Participants: Members of the DELPHI Management and Operations Team. Outcome Measures: Team members'

experiences and views about working with family physicians and family practice staff, before and during the EHR implementation process. **Results:** Three key themes emerged in the data analysis: 1) influencing factors, 2) sustaining factors, and 3) the central role of relationship building. Factors influencing implementation include: a) provider readiness, ie baseline computer knowledge, understanding of requirements for implementing the EHR and learning the software, and the type of software chosen for the project; b) time for software training, learning to use the EHR, and integrating the EHR into practice; and c) expectations about the value EHRs would provide and time needed for the implementation process. Factors sustaining implementation include: a) adapting the approach to software training, b) tailoring the support provided to individual users, and c) modifying expectations. In addition, an emphasis on building relationships with family medicine providers, in part by using an EHR user-centered approach, positively impacted the factors influencing and sustaining EHR implementation. **Conclusions:** A greater understanding of EHR implementation experiences was achieved. Factors influencing and sustaining the implementation process were identified, including how they were supported throughout by relationship building. It is recommended that these findings be considered when implementing EHRs.

JJ6-Systematic Review of the Literature on Evidence-based Primary Care Through Practice Facilitation: An Exploratory Meta-analysis

Baskerville, Neill. University of Waterloo; Hogg, William

Context: Little attention has been given to facilitation as a strategy to implement evidence-based guidelines and a comprehensive synthesis of the literature on the effectiveness of practice facilitation to improve practice performance is timely given the growing interest in facilitation among primary care practice-based research networks. **Objective:** To critically appraise the published practice facilitation randomized controlled and controlled clinical trials in terms of methodological rigor and conduct an exploratory meta-analysis to determine overall effects. **Design:** A systematic review and meta-analysis of RCTs and CCTs on practice facilitation published between 1966 and January, 2006. Only studies with high methodological quality were selected for meta-analysis. **Setting:** All published intervention studies which described the use of a practice facilitator to improve the delivery of preventive services, cancer screening or chronic illness care management within a primary care setting. **Study selection:** Out of 61 potentially relevant publications identified, 20 were of high methodological quality and of those 19 had usable data suitable for meta-analysis. **Instruments:** A modified version of the Physiotherapy Evidence-Based Database scale was used to assess the methodological quality of practice facilitation studies. A DerSimonian and Laird random effects exploratory meta-analysis was

conducted to determine the overall effect size and the presence of statistical heterogeneity. **Outcome Measures:** Review Manager 4.2.8 from the Cochrane Collaboration was used to compute the standardized mean difference as the effect size for the primary outcome of selected high methodological quality studies. **Results:** An overall significant ($Z=9.64$, $p < .001$) but moderate effect size point estimate of 0.54 (95% CI 0.43 - 0.65) was determined and statistical heterogeneity was not apparent ($Q=17.36$, $df=18$, $P=.50$). **Conclusions:** Practice facilitation interventions can achieve significant but moderate effects in the primary care setting. The effects are quite favorable compared to alternative implementation research strategies. Economic evaluation is needed to compare practice facilitation against other alternatives.

JJ7-Assessing Adherence to Evidence Based Guidelines in the Diagnosis and Management of Uncomplicated Urinary Tract Infections

Grover, Michael, Mayo Clinic Arizona; Bracamonte, Jesse; Bryan, Michael; Donahue, Sean; Kanodia, Anup; Warner, Anne-Marie

Context: Family physicians commonly treat urinary tract infections (UTI). Clinical guidelines outline evidence-based diagnostic and management strategies. **Objectives:** We determined 1) the frequency of historical features documentation, 2) frequency of urine culture (UC) use, 3) Trimethoprim/sulfamethoxazole (TMP/SMX) efficacy as empiric treatment, and 4) antibiotic treatments and durations. **Design:** Retrospective case series/chart review. **Setting:** Family medicine office. **Patients:** Female patients seen in 2005 identified by ICD-9 code 599.0 (UTI). **Exclusion criteria:** age 65, symptoms >7 days, fever, nausea or vomiting, vaginitis symptoms, flank pain, history of four UTI's in 12 months, TMP/SMX treatment failure, pregnancy, nursing home patients, and functional or anatomic abnormality. **Outcome Measures:** Documentation rates, utilization of diagnostic studies, and antibiotic treatments and durations. Attending and resident physician behaviors were compared. Antibiotic sensitivity patterns from outpatient UC were determined and compared to inpatient samples. **Results:** 68 of 274 patients had uncomplicated UTI. Documentation rates were above 80% for all historical features except absence of vaginal discharge. Documentation of STD risk differed between resident and attending physicians and was affected by patient age. Cultures were ordered in 76% of patients. 80% with a positive urine dipstick had UC. TMP/SMX was utilized as initial therapy in less than 50%. 61% of TMP/SMX and ciprofloxacin prescriptions were appropriately provided for 3 days. E. coli was sensitive to TMP/SMX 95% of the time. No patient with an uncomplicated UTI had treatment changed due to UC results. Antibiotic sensitivity patterns for outpatients were significantly different from inpatients. **Conclusions:** Only 25% of UTI patients were "uncomplicated" and appropriate for management within clinical guidelines. UC was frequently ordered, even in patients who already had a positive urine

dipstick. TMP/SMX is effective but underutilized. We hope to provide interventions to increase TMP/SMX prescription, decrease UC use, and increase frequency of 3 day treatments.

HEALTH PROMOTION/DISEASE PREVENTION II (KK1-KK7)

JOSHUA TREE II

KK1-Area Rates of Colorectal Cancer Testing Using Iowa Medicare Data

Wright, Kara; Chrischilles, Elizabeth; Levy, Barcey, University of Iowa

Context: Many Americans have not been tested for colorectal cancer (CRC). Objective: To assess rates of testing in calendar year 2000, among Medicare beneficiaries living in Iowa, attempting to determine “true screening” rates in average risk beneficiaries.

Design/Setting/Participants: Rates of CRC testing (any and for specific tests) among Iowa Medicare beneficiaries were determined overall and by primary care service area (PCSA) using diagnostic and screening codes and various criteria for eligibility for the numerator and denominator. All Medicare beneficiaries living in Iowa age 67 or older as of 1/1/2000, with continuous parts A and B, and with no HMO coverage from 1/1/1998 to 12/31/2000 (n=332,295). Results: 19.2% of 332,295 beneficiaries had a CRC test in 2000, with 11.7% undergoing FOBT, 7.0% colonoscopy, 2.4% FS (flexible sigmoidoscopy), and 1.9% BE (barium enema). Among 275,268 beneficiaries not at high risk for CRC, 16.9% had any CRC test. Of beneficiaries tested, 35.3% had a gastrointestinal symptom in the 93 days prior to the CRC test and 27.4 % had a high-risk condition for CRC. Rates for any CRC test in the 225 PCSAs varied from 8.3% to 32.7% (median 17.0%), FOBT 1.6% to 25.8% (median 9.0%), colonoscopy 2.4% to 13.1% (median 6.5%), FS 0% to 6.9% (median 1.9%) and barium enema 0.2% to 5.1% (median 1.9%). “True screening” rates for average risk beneficiaries for any CRC test varied from 1.1% to 26.6% (median 8.5%), 0.7% to 25.8% for FOBT (median 7.5%), and 0% to 4.9% for FS (median 0.5%). Colonoscopy and BE were not covered for screening in average risk beneficiaries in 2000. Intraclass correlation coefficients were 0.94 or higher when comparing rates using various definitions of “any CRC screening” and FOBT.

Conclusions: Rates of testing in 2000 among Medicare beneficiaries depend on the definitions used. Rates vary widely by service area regardless of the definitions used. Future work will explore reasons for these differences.

KK2-Reasons Physicians Have Not Screened Specific Patients for Colon Cancer

Nordin, Terri; Sinift, Suzanne; Rosenbaum, Marcy; James, Paul; Levy, Barcey, University of Iowa

Context: Many Americans have not been screened for colon cancer. Objective: To describe physicians’ reasons for screening or not screening specific patients for colorectal cancer (CRC); to explore physicians’ general approach to CRC screening discussions. Design/Setting/Patients: Qualitative portion of mixed-methods study; 15 Iowa Research Network physicians dictated their reasons for not screening or screening six patients, three in each category, randomly chosen from 511 eligible patients. Physicians also described their general approach to CRC screening. Dictations were transcribed verbatim and themes were identified and grouped using inductive, qualitative methods with N’vivo. The University of Iowa Human Subjects Committee approved the study and methods. Results: Reasons patients were not up to date fell into two major themes: 1) no discussion by physician and 2) patient declined. Reasons for lack of discussion included lack of opportunity for discussion (patient came in only for acute visits or saw other providers for health maintenance, no tracking system, insufficient appointment time, physician forgetfulness), assessment that cost would be prohibitive, distraction by other life issues/health problems, and expected patient refusal. Physicians stated patients declined due to cost, lack of interest, patient autonomy, other life issues, fear of screening, and lack of symptoms. Reasons patients were up to date fell into two categories: 1) Diagnostic testing (symptoms or previous pathology) or 2) Asymptomatic screening (physician recommendation, patient awareness and interest, patient had a type of cancer other than CRC, family history of CRC). Physicians’ discussions with patients varied in adamancy and in the way that the recommendation was framed (“I recommend” vs. “They recommend”).

Conclusions: These results help to provide a foundation for interventions to improve screening, which should include health system changes and educational strategies aimed at both the physician and the patient. Future work should address the association between screening and physicians’ communication strategies.

KK3-Long-term Disease Outcomes in Irritable Bowel Syndrome and Identification of Personal or Disease Characteristics Implicated in Prognosis

Roberts, Lesley, University of Birmingham; Harris, Lynsey; Roalfe, Andrea; Greenfield, Sheila; Wilson, Sue

Context: Irritable Bowel Syndrome (IBS) affects 10-30% of the population and significantly impacts on quality of life. Many sufferers develop a persistent form of the disease. Most evidence comes from cross-sectional research, which provides limited evidence about factors implicated in persistent disease. Little is known about proportions who develop chronic disease or factors associated with this. Objective: To describe long-term disease outcomes and identify personal or disease

characteristics implicated in prognosis. Design: Postal follow-up. Setting: Birmingham, UK. Patients: Cohort with IBS, identified during prevalence survey in 2000. Instrument: Demographic data, symptom profile and score and quality of life were recorded at baseline. Follow-up occurred in 2006, after checking registration status and general well-being with the patient's GP. Patients were re-surveyed to establish the presence of IBS (ROME II) and to evaluate current symptoms and quality of life. Outcome Measures: Patients were categorized as 'recovered' or 'persistent' on the basis of reported symptoms and logistic regression analyses used to determine factors associated with recovery. Results: Baseline and follow-up data were obtained for 299 patients (72% female, age range 23-95). At follow up 33% of patients continued to meet the ROME II criteria, with 40% meeting less restrictive diagnostic criteria. The majority (59.9%) had altered disease profiles at follow-up. Patients categorized as recovered continued to exhibit symptoms with 72% reporting 3+ symptoms. Outcome was associated with baseline symptom severity, quality of life impact and education level (all $p < 0.03$). Females had poorer prognosis, (OR (recovery) 0.49) but this finding failed to achieve conventional levels of significance ($P=0.059$). Conclusions: Recovery or remission rates in IBS are good, with only a 1/3rd of patients exhibiting long-term illness. Symptom profiles are not fixed. Recovery appears to be associated with reduced pain rather than a reduction in bowel symptoms and can be predicted by symptom severity.

KK4-Pharmacogenetic Efficacy of Bupropion: Combined Results From Two Randomized Clinical Trials

David, Sean, Brown University; Strong, David; Lloyd-Richardson, Elizabeth; Brown, Richard; Lerman, Caryn; Shields, Peter; Niaura, Raymond

Tobacco use is the leading cause of preventable death worldwide and despite major public health gains, further reductions in smoking prevalence will be difficult to attain because of the low efficacy of currently available pharmacotherapies. Objective: To examine whether a common polymorphism in the dopamine pathway (dopamine receptor DRD2 Taq1A) influences efficacy of sustained-release bupropion (BUP) for smoking cessation. Design: Chronic tobacco smokers ($n=682$) from two recruitment sites (Brown University, Providence, RI & Georgetown University, Washington, DC) were randomized to BUP or matching placebo tablet for 12 weeks, given intensive group counseling, and followed for 12 months and genotyped for the DRD2-TaqlA polymorphism. Main outcome variables was biochemically-verified smoking cessation abstinence. Results: Cox regression analysis indicated a significant BUP-x-DRD2-x-time interaction such that BUP was differentially highly effective in smokers with the 'A2' genotype (31% vs. 10%) but less effective in those with the 'A1' genotype (26% vs. 22%), with regression

of the gene-x-treatment effect to non-significant differences by 12 months Score [(logrank) test = 36.0 on 4 df, $P=2.84e-07$]. Conclusions: These results are consistent with and replicate those of other studies and suggest that the DRD2-TaqlA polymorphism is a potentially useful locus for the ultimate translational step of developing individually-tailored pharmacotherapies for smoking cessation.

KK5-Effect of Financial Incentives on the Provision of Preventive Services in Toronto, Ontario

Greiver, Michelle, North York General Hospital; Rachlis, Val; Kasperski, Janet; Barnsley, Jan; Bowles, Susan; Wagman, Marilyn

Context: In Ontario, only 65% of preventive services with good evidence for inclusion, and 31% of services with fair evidence are provided. Recently, financial incentives were introduced to improve the provision of those services. Objectives: To measure changes in the provision of preventive services in Toronto, Ontario; to explore changes in practice organization related to those services. Design: Retrospective before and after study using chart audits; focus group interviews and surveys to identify changes in practice policies. Setting: Practices of community family physicians in Toronto. Participants: 18 community-based family physicians. Intervention/Instruments: Random chart audits of patients eligible for the preventive services. The eligible services are: Influenza vaccination for the elderly; pap smears for women age 35 to 70; mammograms for women age 50 to 70; Completed vaccinations for children under 30 months. Other interventions: focus group interviews with physicians and surveys. Outcome Measures: Main outcome: Change in the proportion of eligible patients receiving each of the preventive services. Secondary outcome: changes in office practices and policies (letters, phone calls, and systems set up by practices). Results: for influenza vaccination, odds ratio for the provision of the service after incentives is 1.60; 95% CI=1.32 – 1.96; $p < 0.0001$; for mammograms OR=1.29; 95% CI=1.03 – 1.63; $P=0.0258$; for paps OR=1.16; 95% CI=0.89 – 1.51; $P=0.2584$, NS; for children's vaccinations OR=1.61; 95% CI=0.61 – 4.22; $P=0.3347$, NS. Changes in office practices and policies were reminder letters in early fall for influenza vaccinations, and organized influenza vaccination clinics. Organizational changes for other services were mostly limited to chart-based reminders such as sticky notes. Conclusions: financial incentives resulted in a large and significant increase in influenza vaccination, and a smaller increase in mammograms. There was no change in the provision of pap smears or children's vaccinations. Changes in practice organization were largely related to influenza vaccinations.

KK6-Men's Tobacco and Alcohol Use During and After Pregnancy

Everett, Kevin, University of Missouri; Bullock, Linda; Longo, Daniel; Lucas, Kristen; Madsen, Richard

Context: Men's health risk behaviors are rarely considered as part of routine prenatal care. More information is needed about men's health behavior during pregnancy to determine if there is a need and/or an opportunity for intervention. The purpose of this study was to examine men's tobacco and alcohol use behaviors during pregnancy and postpartum in the context of their pregnant partners' behaviors and relevant demographic variables. Objectives: To describe changes in smoking and alcohol use behaviors of men during and after pregnancy. Design: Observational cohort study. Setting: A Medicaid managed care health plan referred potential participants obtained through a screening process directed at pregnant partners. Participants: Rural low-income expectant fathers (N=138) with pregnant partners enrolled in a Medicaid managed care health plan and willing to complete a telephone survey during pregnancy and postpartum. Instrument: The survey measured health risk behaviors (tobacco use, alcohol use,) and sociodemographic variables using questions requiring forced choice or quantitative answers. Results: Men's smoking rate did not change significantly from pregnancy (46.9%) to postpartum (45.8%). Small non-significant changes were observed in rates of hazardous drinking (27% vs 23%). A majority of men remain in the contemplation stage of change regarding smoking throughout pregnancy and postpartum. Non-smoking status of men was significantly related to a pregnant partners quitting smoking during pregnancy and remaining quit at postpartum (P=.019). Also, household prohibitions from indoor smoking went from 62.5% at pregnancy to 76% postpartum (P=.009). Conclusions: This preliminary study found high rates of smoking and hazardous drinking in this sample of young adult men. Pregnancy alone does not appear sufficient to lead men to quit smoking or change hazardous drinking. Continued exclusion of men in behavior change programs during prenatal care is a missed opportunity to address health-risk behaviors affecting paternal, maternal, and family health.

KK7-Is Intranasal Zinc Effective for the Common Cold?

Cruze, Hubert; Arroll, Bruce, University of Auckland; Kenealy, Tim

Context: There is a need for an effective treatment for symptoms of the common cold but most evidence suggests that there are few options. Objective: There is conflicting evidence about the effectiveness of intranasal zinc for the common cold. This paper aims to systematically review the evidence and pool the results for intranasal zinc. Design: Review methods Meta-analysis of data from randomized controlled trials that compared the use of intranasal zinc preparations with placebo. Instruments: A literature search

of Cochrane register of controlled trials, Medline, EMBASE databases. Participants: Adults with symptoms of the common cold. Interventions: Intranasal zinc within 48 hours of the onset of symptoms. Main or secondary outcomes: Resolution of symptoms, symptom scores and time to resolution. Results: Five studies were found. Three were relevant to the issue of treatment of naturally occurring colds with intranasal zinc. High dose of intranasal zinc preparation (2.1 mg zinc/day) was reported in two studies to shorten the duration and reduced the symptom severity of common cold in healthy adults, when started in 24-48 hours of onset of illness. The relative risk for benefit at day 3 was 0.63 95% CI (0.57-0.70). This was a numbers needed to treat of 2.8 for both studies. The weighted mean difference for time (days) to resolution of symptoms was -0.5 95% CI (-0.61 to -0.39). The lower dose study (0.044mg zinc/day) found no benefit in resolution but did report a significant improvement in symptoms at day one and day 3. There were no significant harms reported. Conclusion: There was a pattern of improvement in the three studies of naturally occurring colds that suggest a benefit for intranasal zinc. More research including high vs low dose vs placebo versus over the counter medication is needed.

DIABETES II (LL1-LL6)

CANYON SUITE I

LL1-The Management of People With Type 2 Diabetes in UK Primary Care: Intensive Care or Inertia?

McManus, Richard, University of Birmingham; Calvert, Mel; Freemantle, Nick

Context: Intensive glycaemic control has been shown to reduce the risk of microvascular complications in people with type 2 diabetes. Most people with type 2 diabetes are treated in primary care and routinely collected practice data provides an opportunity to evaluate current care. Objective: To evaluate the treatment and monitoring of people with type 2 diabetes receiving with multiple oral agents and/or insulin. Design: Retrospective cohort study. Setting: 154 UK general practices. Patients or Other Participants: 16860 people with type 2 diabetes who received a prescription for more than one type of oral hypoglycaemic agent and/or insulin during a 10 year time period from 1995-2005 were identified using computerized morbidity ("Read") codes. Outcome Measures: Primary outcome measures were: glycaemic control on multiple oral agents and /or insulin, and transition from oral therapies to insulin. Results: 5498 (33%) of eligible patients had HbA1c assessments six months before and following initiation of their last oral agent. The mean HbA1c prior to therapy was 9.01 % which dropped to 8.12 % (mean difference 0.89 %, 95% CI 0.84 to 0.93, p <0.0001) following initiation of oral therapy. 3337 (61%) patients prescribed ? 2 oral agents had continued evidence of poor glycaemic control (HbA1c ?7.5%) following their most recent oral treatment, of which only 869 (26%) received insulin during the study. The median time to insulin for patients prescribed multiple oral agents was 8 years (95%

CI 7.6 to 8.9). 1513 people began insulin during the study and had HbA1c assessments in the 6 months before and following insulin. Mean HbA1c prior to insulin: 9.85 % (SD 1.96) with mean decrease 1.34%, (95% CI 1.24 to 1.44%) but 1110 (73%) still had HbA1c \geq 7.5% post insulin.

Conclusions: Many people with type 2 diabetes receive inadequate monitoring and are uncontrolled on oral agents and/or insulin. For such patients, more intensive management is required to improve glycaemic control and reduce the risk of microvascular complications.

LL2-Mental Models of Diabetes Mellitus Among Minority Adolescents

Ryan, John, University of Miami; Nierenberg, Barry; Hobbs, Monica; Escobar, Andrea; Gomez-Estefan, Carlos; Regalado, Fernando

Context: Type 2 diabetes accounts for 90-95% of all-age cases and is increasingly reported among children and adolescents. Given the increase in diabetes among youth, particularly Latino and Blacks, it is important to explore factors that may enhance or limit adolescents' abilities to maintain healthy lifestyle choices. **Objective:** Explore potential differences in concepts of diabetes between Black and Latino adolescents. **Design:** Descriptive study using qualitative data. **Setting:** Public high school. **Participants:** 30 9th and 10th grade students. **Intervention/ Instrument:** Interview. **Results:** Participants included 20 black, 6 Hispanic, 2 Asian, 2 unidentified students. Black students self-identified as Haitian, 8; Jamaican, 1; African-American, 2; African, 1; mixed, 1; or unidentified, 7. Mean age was 15.17 years; 22 participants were female. About 7 had family members with diabetes, with average of 1.9 diabetics per family. Majority of participants ascribed diabetes to eating sugary foods; several described a genetic relationship. Most suggested diabetes is improved by eating well, avoiding sugary foods and exercising. Those with diabetics in the household were more specific about need for medication or insulin. Several suggested the need to see a doctor frequently. Among black students, 25% thought they were at risk compared to 17% of Hispanics. Two students, both black, specifically stated that blacks were at higher risk than whites. No one linked cardiovascular health, including smoking, to diabetes although several participants had family members with cardiovascular disease. Several participants expressed unconventional beliefs about the origins of diabetes. One participant believed there to be a vaccine for diabetes. **Conclusions:** Majority of participants were capable of describing behavioral aspects of diabetes (diet, exercise). Less recognized the genetic component. Few understood their own risk for diabetes given their demographics. In this small sample, race or ethnicity does not appear to be as important as experience in shaping one's concept about diabetes.

LL3-Neighborhood Characteristics and Diabetes in an Urban Environment

Glazier, Richard, University of Toronto; Creatore, Maria; Gozdyra, Peter; Ross, Kelly; Tynan, Anne-Marie; Booth, Gillian

Context: Diabetes affects 135 million people worldwide. It is a rapidly growing cause of disability and premature mortality that is linked to obesity and physical inactivity. Features of residential neighborhoods may be important determinants of physical activity and ability to access healthy foods. Family doctors may need to be aware of these contexts in order to tailor behavioral strategies to their patients and to advocate for healthier neighborhoods. **Objective:** To determine the relationship between neighborhood characteristics and the prevalence of diabetes in an urban environment. **Design:** Ecological analysis using the population-based Ontario Diabetes Database, the 2001 Canadian census and neighborhood features obtained from the City of Toronto.

Setting: Toronto, Canada, with a population of approximately 2.5 million. **Participants:** 140 neighborhoods, each with approximately 18,000 people. **Intervention/Instrument:** The Ontario Diabetes Database is the world's largest validated registry of people with diabetes. **Outcome Measures:** Age-sex adjusted neighbourhood diabetes rates. **Results:** 5.5% of Torontonians had diabetes in 2001. Age-adjusted neighbourhood rates ranged from 2.8% to 7.6%. Diabetes was significantly higher in neighborhoods with low education ($p < 0.0001$), a larger proportion of immigrants ($P=0.007$) and post-1945 construction ($P=0.0001$). Neighborhoods built pre-1945 had higher residential density, higher density of commercial services, lower car ownership, and more trips taken by walking, bike or public transit. After controlling for income, education, and immigration, neighborhoods constructed pre-1945 had significantly lower age-sex adjusted diabetes rates than neighborhoods constructed post war ($P=0.0026$).

Conclusions: Neighborhood characteristics were strongly and independently associated with diabetes rates. These analyses do not permit causal inferences but it is very possible that neighborhood environments act as barriers and facilitators to physical activity and obtaining healthy foods. Neighborhood factors may prove important for counseling patients about physical activity and healthy foods and for advocating for healthier communities.

LL4-The Value of Self-reported Care Behaviors and Barriers for Patients With Type 2 Diabetes

Daly, Jeanette, University of Iowa; Hartz, Arthur; Xu, Yinghui; Levy, Barcey

Context: Information about the value of patient self-reported information may influence how physicians assess and utilize this information. **Objective:** To identify patient self-reported information that is associated with control of blood glucose for persons with Type 2 diabetes. **Design:** Patient survey linked to medical record. **Setting:** Primary care clinics in a teaching hospital. **Patients:** 207 selected randomly patients on

medication for type 2 diabetes who completed an extensive questionnaire on self-care behaviors. **Instrument:** Extensive questionnaire on self-care behaviors and barriers to behaviors. **Outcome Measures:** HbA1c levels near the time of questionnaire completion. **Results:** The mean of the most recent HbA1c on the medical record was 7.1% with 15% of the HbA1c levels 8.0% or higher. HbA1c levels were significantly correlated with percentage of the time taking medication ($r_s = -.17$, $P=.017$) and following a meal plan ($r_s = -.21$, $P=.005$). Barriers to self-care behaviors that were significantly correlated with HbA1c included: medication cost ($P < .002$), hassle following a meal plan ($P < .009$). **Conclusions:** Self-reported behaviors regarding medication and diet were associated with HbA1c levels. The association of barriers to self-care behavior with HbA1c levels was not mediated through their association with self-reported behaviors. Reports of barriers to behavior may provide information about behaviors that is not provided by direct reports of behaviors.

LL5-Outcomes of PDSA Cycles Among Underserved Patients With Diabetes

Jain, Vipin, Open Door/BMH Health Center; Sevilla, Javier; Zoppi, Kathy

Objectives: To analyze the effect of implementing a Chronic Disease Management System (CDMS) using PDSA cycles and its impact in health outcomes among medically underserved diabetic patients. **Design:** Observation Surveys and Open, two-center randomized controlled trial. **Setting and Subjects:** The under- or uninsured, medically underserved patients within central Indiana who are treated for diabetes at the federally qualified health centers serving two underserved communities in central Indiana. **Instrument:** BPHC and AAFP recommend that CDMS is carried collaboratively through multiple trials of a Plan, Do, Study and Act (PDSA) Cycle in a primary care setting and improve diabetes outcomes. PDSA cycles were conducted so as to meet ADA recommended HbA1c, blood pressure, and Cholesterol (ABC) goals. One of the PDSA cycle used point of care diagnostics (POC group) with stat measurements for HbA1c, Lipids, ALT and urine microalbumin for patients at the first “A” health clinic. Outcome of this cycle was compared with patients at second “B” health clinic receiving traditional care (TC group) with referral to the nearby hospital for laboratory testing. An ABC outcome of this cycle was assessed as a randomized trial. **Results:** Total of 152 patients at the “A” health clinic and 84 patients at the “B” health clinic were included. POC group achieved improvement of 2.51% in HbA1c in comparison to 0.78% improvement in TC group ($P=0.1753$). 52.63% in POC group had achieved desired HbA1c of 7 or less and 73.68% achieved HbA1c of 8 or less in comparison to 21.4% and 44.6% respectively in the TC group ($p < 0.0005^*$). POC group patients achieved improved LDL and blood pressures controls. **Conclusions:** A chronic

disease management approach that includes collaborative developed out of successfully tested PDSA cycles may improve health outcomes in this population and is potentially more likely to prevent complications.

LL6-Community Health Awareness of Diabetes (CHAD): Feasibility and Acceptability of a Program to Improve Diabetes Risk: Assessment Using Pharmacy-based, Volunteer-run Sessions

Agarwal, Gina, McMaster University; Kaczorowski, Janusz

Context: The Canadian Diabetes Association recommends family doctors screen all patients >40 years for diabetes. The CHAD program was developed to increase community diabetes awareness and provide family physicians with information to initiate more targeted diabetes testing for patients. **Objectives:** To assess the feasibility/acceptability of the program. **Design:** Cross sectional surveys of program participants. **Setting:** Grimsby, Ontario, Canada. **Patients/Participants:** Patients over 40 years of age from 10 local family doctors ($n= 4860$). **Intervention:** Patients were invited via personalized letters from their family doctor and community advertising to attend pharmacy-based diabetes risk-assessment sessions. Trained volunteers assisted attendees obtain risk-assessments (combining Finnish Diabetes Risk-score, capillary blood glucose, HbA1c tests). Assessment results were sent to attendees’ family doctors. **Outcome Measures:** Program acceptability/feasibility was assessed by attendance rates, attendee’s demographics and participant, volunteer-staff, pharmacist and family doctor questionnaires. **Results:** Over 10 weeks in 2005, 62 pharmacy-based sessions were held; 587 people attended; 67% were female, 65% were seniors (age range 40- 99 years) and 88% did not have pre-existing diabetes. Most (37%) heard about the program from their family doctor; 24% responded to newspaper advertisements. Those with a high diabetes-risk (21%) had reports sent to their family doctors suggesting further diabetes screening and had significantly higher modifiable-risk-factor prevalence (compared to those without risk of diabetes [Chi sq.]); overweight (84% [$P=0.001$]), physically inactive (14%, [$P=0.008$]), high fat intake (41% [$P= 0.022$]), low vegetable consumption (10% [$p < 0.000$]), high salt consumption (39% [$P=0.759$]) smoking (1.3% [$P=0.000$]). Of the 204 participants who completed a questionnaire after a session; 90% thought pre-attendance fasting was easy; 96% found clinic locations accessible. **Conclusions:** Individuals at high risk for diabetes were identified with potential for modifying risk factors and preventing future diabetes. Although highest attendance was among seniors, a younger group of patients also participated. Other strategies to encourage younger participants in community health programs should be explored, as this age group is at risk of developing type 2 diabetes and should be targeted for screening initiatives.

HEALTH CARE DISPARITIES III (MM1-MM7)
CANYON SUITE II

MM1-What is Important About Primary Health Care? Consumers' Priorities

Wong, Sabrina, University of British Columbia; Watson, Diane; Young, Ella; Regan, Sandra

Objective: Consumers define quality of care through their expectations, experiences and judgments, yet little has been done to identify consumer's definitions of the quality of primary healthcare (PHC). The purpose of this study was to identify features of PHC important to residents of British Columbia. **Design:** For this qualitative study, 75 English-speaking adults, aged 18 years and older, were recruited using random digit dialing to participate in 11 focus groups across the province of B.C. Using grounded theory methods, codes were developed and used to give structure and organization to the transcribed text. **Results:** Sixty-five per cent of participants were women, more than half (62%) were > 50 years, and 91% were Caucasian. Most participants (96%) had a regular PHC provider and receiving care from that provider for a mean of 8.5 years. Six umbrella domains of PHC were reported by all focus groups: consumers' preferences, interpersonal processes of care (communication, shared decision-making, and interpersonal style), accessibility (geographic accessibility to and timeliness of services), technical effectiveness of providers, continuity of care (information, relationship, and management), and whole-person care. Participants wanted timely, continuous, effective care by a provider who treated them as a "whole person." Participants preferred friendly and respectful providers who listened to them and were supportive of their healthcare choices. **Conclusions:** This study provides important consumer information about PHC that can be used by those who seek to: 1) monitor and track change in the performance of this sector, 2) evaluate the impact of renewal initiatives and 3) report to Canadians on renewal of PHC. They emphasized whole-person care and developing a patient-provider relationship to mutually address the underlying cause(s) of their health problem and not simply treat the disease. These perspectives can be used to redirect service delivery, positively change organizational culture, and improve the quality of PHC.

MM2-Is an Identified Usual Source of Care Associated With Better Patient Perceptions of Their Physicians' Communication Skills?

DeVoe, Jennifer, Oregon Health & Science University; Wallace, Lorraine; Fryer, George; Rogers, Edwin

Context: Continuity of care has been linked to better healthcare outcomes. Good patient/physician communication is also associated with better self-reported health status. Continuity of care with a regular provider may play a key role in achieving optimal communication between patients and physicians. **Objective:** To determine if

having an identified usual source of care is more often associated with positive patient perceptions about their communication and relationship with their physicians. **Design:** Cross-sectional descriptive and multivariate analysis of the 2002 Medical Expenditure Panel Survey (MEPS), a nationally representative survey. **Setting/Participants:** Civilian non-institutionalized US population over 17 years of age (N=approximately 16,700). **Outcome Measures:** Respondents' perceptions of their physicians' communication skills, measured in four related survey questions. Responses along a 4-point Likert scale were dichotomized into "always" and "not always." **Results:** Approximately 87% of participants reported having a usual source of care. After controlling for the effects of several covariates (including sex, age, race, ethnicity, family income, education, census region, rural residence, and health insurance status), positive patient perceptions about physician communication were significantly associated with having an identified usual source of care. When compared with adults reporting no usual source of care (reference group, OR=1.0), adults with a usual source of care were more likely to report that their physician always listens to them (OR=1.31, 95% CI 1.16-1.48), always explains things so they can understand (OR=1.26, 95% CI 1.13-1.41), always shows respect (OR=1.24, 95% CI 1.10-1.40), and always spends enough time with them (OR=1.20, 95% CI 1.07-1.35). **Conclusions:** Having an established relationship with a regular physician leads to a higher likelihood that a patient will report positive communication and interactions with their physician. This study suggests that one way to improve patient/physician communication is to develop policies and practices to ensure that all patients have consistent access to a continuity primary care relationship.

MM3-The Link Between Overweight and Chronic Disease: Health Knowledge Among Middle School Students

Morrissey, Susan, East Carolina University; Owen, Lynda; Whetstone, Lauren

Context: Overweight in childhood is known to lead to health consequences such as diabetes and heart disease. Children, however, may not be exposed to this information at home, school, or the physician's office. Little is known about children's knowledge of the link between overweight and chronic disease. **Objective:** To examine whether health knowledge of middle school students varies by race or gender. **Design:** Cross-sectional survey. **Setting:** General community. **Participants:** 2,086 middle school students in one eastern North Carolina county: 45.3% African-American, 37.2% White, 17.5% other race; 50.9% female. **Outcome Measures:** knowledge that being overweight increases a person's chance of getting some types of cancer, diabetes, and heart disease. **Results:** Students reported that being overweight increases a person's chance of getting some types of cancer (33.0%), diabetes (57.2%), and heart disease (59.4%). Significant differences by race were observed for the questions on cancer, diabetes, and heart disease. More White students than African-

American or other race students reported that being overweight increases a person's chance of getting cancer (39.7%, 27.1%, 34.0%, $p < .001$), diabetes (69.5%, 47.7%, 54.7%, $P < .001$), and heart disease (68.0%, 51.6%, 60.7%, $P < .001$). In addition, a significant difference was found by gender for diabetes with more females than males reporting that being overweight increases a person's chance of getting diabetes (61.9% v 52.5%, $p < .001$). **Conclusions:** Overall the middle school students' knowledge of the link between overweight and cancer, diabetes, and heart disease was low. Non-white students were even less likely to recognize this link. Physicians should use adolescent office visits to educate their patients on the consequences of overweight, recognizing that health knowledge about overweight may vary by race.

MM4-The Health Status of Free Medical Clinic Patients in Inner-city Buffalo, NY

Cadzow, Renee, State University of New York at Buffalo;
Servoss, Timothy; Fox, Chester

Context: This study explores the health risks and the social and economic correlates faced by patients that presented at a free medical clinic in inner-city Buffalo, NY between 2002 and 2005 ($n = 986$). Clinic staff asked each patient to fill out a Health Risk Assessment (HRA) questionnaire that addressed their chronic disease and illness history, mental health, social support, substance use, income, education and housing. Analysis of this data will improve the treatment provided to underserved populations like this one.

Objective: Identify and describe health risks of free clinic patient population and identify subpopulations most at risk. **Design:** Statistical analysis of de-identified patient HRA database. **Setting:** Lighthouse Free Medical Clinic in inner-city Buffalo, NY. This clinic serves predominantly low-income African-American residents of the nearby community and is run by volunteer medical students and physicians. **Patients:** HRA database consists of 986 patient questionnaires. Patients range in age from 1-85, are mostly African-American (89%) and males and females are equally represented. **Results:** Of those patients 18 and older, nearly 50% are unemployed and 70% earn less than \$10,000 a year. There is an increased frequency of negative health behaviors that correspond to decreasing income (eg smoking). The prevalence of chronic disease in this population is high with 46% of patients 40 and older diagnosed with hypertension and 44% obese ($BMI > 30$). Adolescents have a substantially higher rate of obesity than the national average, but only slightly higher than the national average for African-American adolescents ($BMI > 95$ th percentile: girls 26.9%, boys 21%). Females and the aging appear to be at a higher risk for obesity, hypertension, and poor mental health ($P < .001$ for all variables). **Conclusion:** This data highlights the need to design treatment and public health interventions for low-income

underserved urban populations, particularly targeting females and the aging.

MM5-Estimating End-of-life Health Care Costs: Implications for Primary Care

Kiceniuk, Deborah, Dalhousie University; Lawson, Beverley; Skedgel, Chris

Context: Health care resources have been traditionally allocated on a per-capita basis to ensure that areas with large populations receive a proportionately higher share of resources than less populated areas. These models have been criticized for ignoring important geographical variation in the health status of the population and, consequently, variation in the degree of need for health services. A substantial percentage of health care costs are expended for people at the end-of-life; some studies have estimated this at between 30-40% of the total health care budget. **Objective:** This study examined end-of-life health care costs by developing a linked database using health administrative data. **Design:** Analysis of health administrative data containing demographic information as well as information on physician visits, hospital stays, prescription drug use, location of death, residence, gender, age, and other health variables. Differences in costs between age, gender, location, and cause of death were examined for the 12 months previous to death. **Setting:** Province of Nova Scotia, Canada. **Subjects:** All individuals who died in the province of Nova Scotia, Canada between 1996 and 2001 ($N = 35,345$). **Results:** Costs tended to be skewed, therefore, median costs best represent cost per patient. Because of the highly skewed distribution, negative binomial regression was used to assess differences after accounting for particular demographic factors. For all health services, median cost per death was \$7658.00 (CDN). After accounting for age, year, and residence, males incurred significantly higher costs than females (adjusted RR 0.93, 95% CI { .90, .96 }, $p < .0001$). Overall, median cost per death for physician services was \$873.91 with males costing significantly more than females (Median = \$947.73). COPD cost more per patient than IHD or Lung Ca. **Conclusion:** There appears to be significant differences by gender and cause of death in the cost of end-of-life health care services and these differences should be considered when developing community-based primary care services for this population.

MM6-Maternal Substance Use During Pregnancy and Increased Risk of SIDS Among African-Americans

Hauck, Fern, University of Virginia; Smolkin, Mark

Context: Sudden infant death syndrome (SIDS) is the leading cause of death among infants one month to one year of age. African-Americans are twice as likely to die from SIDS as white infants. Little is known about racial differences in smoking as a risk factor for SIDS, or if illegal drug use is a risk factor for SIDS independent of cigarette use. **Objective:** To determine if maternal prenatal drug use contributes to the excess risk of SIDS among African-Americans and if this is

independent of smoking. Design: Case-control. Setting and Participants: 260 infants who died from SIDS in Chicago, November 1993-April 1996, were matched to 260 living controls on race-ethnicity, age, and birth weight. 75% of the SIDS infants/controls were black. Instruments: Standardized death scene investigation and parental interviews. Outcome Measures: Conditional logistic regression analysis measured associations between independent factors (maternal smoking and drug use) and SIDS. Results: Maternal smoking during pregnancy was more common among SIDS infants than controls (49% vs. 19%, $P < 0.001$), and more common among black SIDS infants than white SIDS infants (54% vs. 32%, $P = 0.003$). Maternal drug use was also more common among black SIDS infants (40% vs. 3%, $P < 0.001$), with cocaine being the most commonly reported drug (32% vs. 3%) $P < 0.001$. Smoking was associated with increased risk of SIDS (odds ratio [OR] 4.4, 95% confidence interval 2.7-7.4) among blacks and all participants combined (the sample size for whites was too small for separate analyses). Multivariable analysis yielded similar results. Cocaine use in pregnancy among blacks, adjusted for smoking, sleep environment, and other potential confounders, was associated with increased risk (OR 3.5, 1.3-9.3). Conclusions: Maternal cigarette and cocaine use are strongly associated with SIDS. The higher prevalence of these behaviors among mothers of African-American infants who died from SIDS may account in part for the racial disparity. Family physicians need to identify at-risk patients and offer interventions that will benefit their health as well reduce the risk of SIDS among their newborn infants.

MM7-Refugees and Medical Student Training: Cultural Awareness in Health Care

Wagner, Christine, University of Buffalo; Zayas, Luis; Griswold, Kim; Kernan, Joan

Context: Medical schools have been responding to increased diversity in the United States population by incorporating cultural competency training in their curriculum. A cultural competency training program pairing refugee patients and medical students in a primary care setting provides students with targeted and experiential cross-cultural education. Objective: Identify key lessons attained by medical students in the domains of culture and cultural awareness in health care. Design: Data were collected in four focus groups (2 pre, 2 post) conducted at the beginning and end of the academic year. Qualitative analysis was conducted by three raters using a content-driven immersion-crystallization approach. Setting: Two family medicine clinics. Participants: Twenty-seven 1st and 2nd year medical students in an elective rotation. Intervention: Participation in two clinical encounters for newly arrived refugee patients and related educational workshops. Outcome Measures: Cultural awareness lessons. Results: Following participation in a “cultural immersion” program, students reported increased understanding of the meaning and value of culture

and cultural awareness. Cross-cultural and communication skills and increased sensitivity to gender and power roles in cross-cultural encounters was recognized. Students reported a greater understanding of the value of culture in health care interactions, the ability to “see the patients as a whole” and stated that experiential learning allowed for the practical application of cultural knowledge. Conclusions: Working with refugees in the provision of health care presents opportunities for medical students to learn about different cultures, practice basic health care skills, and increase understanding of cultural awareness in the primary health care Setting. Students exposed to refugee encounters in a cultural awareness program acquired basic cultural sensitivity and critical cross-cultural skills. In the journey to increased cultural competence, experiential learning programs in medical school training can provide a window for reflection on provider’s attitudes, beliefs and biases in the provision of culturally sensitive care.

PSYCHIATRY II (NN1-NN7)

CANYON SUITE III

NN1-Predictors for a Chronic Course of Depression in Older Patients in Family Medicine

Licht-Strunk, Els; Van der Windt, Danielle; Van Marwijk, Harm; De Haan, Marten; Beekman, Aartjan

Context: Depression in older persons is an important health problem with a large impact on quality of life and functioning, especially if it remains unacknowledged and is inadequately treated. About one in three depressed older patients will have a chronic course. It is unknown which patients are most at risk for chronicity. Objective: To find prognostic indicators for chronicity of depression in older family practice patients. Design: A systematic search of the literature in Medline and PsychINFO for studies on prognosis of depression in older persons in family practice and the community. Data regarding methodological quality, selection criteria, duration of follow-up, outcome of depression and prognostic factors were extracted. Due to heterogeneity of studies, we could not pool the data. Therefore, the results were summarised using a rating system with six levels of scientific evidence, based on the quality and outcome of the studies (‘best evidence synthesis’). Results: We found articles on three cohorts in family practice and seven in the community. Family practice studies showed weak evidence for the association between higher baseline depression level and chronicity, which was a strong association in community studies. Furthermore, community studies showed strong evidence for an association between chronicity and older age, presence of chronic somatic diseases, external locus of control and the presence of functional limitations. Conclusion: Little research on this subject has been carried out in family practice. Higher baseline depression level is associated with an increased risk of chronicity of depression in older family practice patients. Community studies provided several more prognostic indicators. However, these findings cannot be generalized to family practice

populations. Future research must validate the indicators in family practice settings and must study how they are intercorrelated. This may help to make a clinical profile to identify those depressed older patients most in need of treatment.

NN2-Solo Visits for Mental Health Treatment in Primary Care

Petterson, Stephen, Robert Graham Center; Phillips, Bob

Context: More than one-half of persons with mental health problems obtain treatment in primary care settings. Many researchers are concerned about the quality of care provided in these settings, often characterized as ill-suited for the provision of adequate, sustained care. **Objective:** To compare the prevalence of a solo visits—just one visit with no follow-up care—to primary care and mental health providers. **Design:** Multivariate analysis of annual event histories in the 2002 and 2003 Medical Expenditure Panel Survey (MEPS). Control variables include SF-12-based measures of mental health, schooling, age, gender, race/ethnicity, and region. **Setting:** The MEPS is a national probability survey of the civilian non-institutionalized US population. **Participants:** Adults above the age of 18 with at least one mental-health related visit in a year to an office- or out-patient provider (n=2,509). **Outcome Measures:** A dichotomous measure equal to one if a solo mental health visit in a calendar and zero if more than one visit. **Results:** Among adults with at least one mental health visits to a primary care physician, 55.7% have just one visit over the course of a year; by contrast, among their counterparts who see a mental health provider, 19.8% have just one visit. After controlling for reported mental health, age and other demographic characteristics, the odds of a solo visit for patients who see just a primary care provider are 6.25 times [95% CI: 5.15-7.58, $p < .0001$] greater than the odds than the for those who see a mental health provider. **Conclusions:** There are large differences across settings in the prevalence of solo visits for mental health problems. Further study, currently underway, is needed to understand these findings including an examination of financial barriers to the mental health treatment in primary care, “code shifting” by physicians, and the comorbidity between physical and mental health problems.

NN3-Impact of Primary Care Depression Management on Medical Care Utilization

Upshur, Carole, University of Massachusetts Medical School; Weinreb, Linda; Zhang, Jianying; Norton, Michael

Context: Depression is recognized as an important contributor to population disability and as a major confounder in chronic medical conditions. While the chronic care model has been shown to improve depression outcomes in primary care, health care payers are reluctant to invest the extra resources to achieve these outcomes. **Objective:** To determine if there are medical or behavioral

health utilization offsets for Medicaid adult patients enrolled in a depression management demonstration. **Design:** Interrupted multiple time series analysis of per member per month claims data. **Patients:** 188 Medicaid adults matched by zip code, depression diagnosis, and propensity score to 732 Medicaid adults during the same two year time period. **Setting:** 6 different community health care **Settings** including: one resident clinic, one community health center, two small group practices, and two hospital group practices. **Intervention/Instrument:** Depression screening; PCP management and antidepressant prescribing; care management, and referral to behavioral health and community support services. **Results:** Two utilization comparisons were conducted, one year pre and post intervention for enrolled patients, and intervention versus matched controls. 1) Post intervention, enrolled patients increased their primary care and behavioral health office visits significantly ($p < .0001$), but there were no changes in ER visits or hospitalizations. 2) Post intervention, compared to controls, intervention patients had significantly less ER visits ($P < .05$), and fewer medical hospitalizations and days ($P < .01$), and psychiatric hospitalization and days ($P < .02$), although significantly more primary care visits. **Conclusions:** The results suggest that primary care management for depression can lead to significant health care utilization changes that may be sufficient to compensate for costs associated with this management intervention, and may yield actual cost savings. Limitations on time to follow up and sample selection may limit generalization.

NN4-Deception in Research: Considering the Case for Balanced Placebo Designs in Trials of Antidepressant Medication

Dowrick, Chris, University of Liverpool; Whiting, Damian; Hiscock, Julia; Wigglesworth, Mark; Walley, Tom; Hughes, John

Context: Systematic reviews of randomized placebo controlled trials of antidepressant medication show small and decreasing differences between pharmacological and placebo arms. It is unclear whether this is a genuine clinical finding or is due to methodological problems with conventional trial designs, such as their assumption of additivity between drug and placebo trial arms. Balanced placebo designs, which include elements of deception, may help to address the additivity question, but pose substantial ethical and pragmatic problems. **Objective:** To ascertain views of potential study participants, of the ethics and pragmatics of various balanced placebo designs, in order to inform the design of future antidepressant drug trials. **Design:** Qualitative study, using a combination of focus group and individual interviews. **Setting:** Primary care teams in the north west of England. **Participants:** 14 family physicians, eight psychiatrists, and seven patients with a previous or current diagnosis of depression. **Instrument:** Vignette-based topic guide, inviting participants' views on different strategies for deception: post hoc; authorised (study-by-study or generic

pre-consent); minimized deception. **Outcome Measures:** Participants' responses were audiotaped and transcribed. Transcripts were analyzed thematically, using Framework. **Results:** All respondents could see potential utility of introducing deception into trial designs, and most considered some balanced placebo options to be ethically acceptable. Authorized deception was the most commonly accepted strategy, though some respondents argued that this would reduce the pragmatic effectiveness of the study because participants may guess the element of deception. Family physicians were concerned about the effect of deception designs on their relationships with patients. **Conclusions:** There is a trade-off between pragmatic and ethical responses to the question of whether, and under what circumstances, elements of deception could be introduced into antidepressant drug trials. Ensuring adequate ethical safeguards within balanced placebo designs is likely to diminish their ability to address the crucial issue of additivity.

NN5-Systematic Approach to Major Depression and Post Traumatic Stress Disorder in Military Primary Care: Initial Results of RESPECT.mil

Yamamoto, Christopher; Gould, Darin; Engel, Charles; Williams, John; Oxman, Thomas; Barry, Sheila; Lee, Pamela; Dietrich, Allen, Dartmouth Medical School

Context: Soldiers returning from war have increased rates of Major Depressive Disorder (MDD), Post Traumatic Stress Disorder (PTSD), and related conditions. There is an urgent need to develop and evaluate practical approaches to help those needing treatment. **Objective:** To explore the feasibility of implementing a systematic primary care approach to recognition and management of MDD and PTSD among soldiers. The approach is based on the RESPECT-Depression Project that demonstrated improved depression outcomes for civilians. **Design:** In this demonstration project, soldiers presenting for primary care are screened for PTSD and MDD. Screen positives complete a diagnostic evaluation and if diagnosed with MDD and/or PTSD receive management consistent with Department of Defense guidelines. **Setting:** Selected clinics serving the 82nd Airborne Division (Fort Bragg, North Carolina). **Participants:** Clinicians assigned to these clinics and the soldiers they see. **Intervention:** Primary care clinicians and their office staff are trained to use key screening and diagnostic tools, initial and follow up management guidelines, and services of a telephone care manager and a psychiatrist. The care manager monitors treatment response and provides follow up support to soldiers who want it. The psychiatrist provides supervision and informal advice. **Evaluation:** Initially and in follow up, PHQ-9 is used to measure depression severity. The PTSD checklist (PCL) is used for PTSD severity. **Results:** Fifteen clinicians have been trained and over 2000 screens have occurred so far. Entering care management to date are 52 soldiers who

scored ≥ 10 on PHQ 9, 26 of whom also scored ≥ 31 on PCL. Of those with 6-10 week follow up evaluations, 28 (53.1%) showed a drop of ≥ 5 points on PHQ 9 and 21 (60%) showed a drop of ≥ 5 on PCL. **Conclusions:** These initial results suggest that the RESPECT-mil is feasible to implement. Longer term outcomes including remission rates will be available in October.

NN6-Cluster Randomized Controlled Trial of the Effectiveness of Graduate Primary Care Mental Health Workers

Lester, Helen, University of Birmingham; Freemantle, Nick; Wilson, Sue

Context: There is some evidence that the quality of primary care mental health provision is variable. **Objective:** To evaluate the effectiveness of graduate primary care mental health workers on satisfaction with care, mental health symptoms and use of the voluntary sector. **Design:** Cluster randomized controlled trial. **Results:** 19 practices and 368 patients (18 to 65 years of age) with a diagnosis of a new or ongoing common mental health problem were recruited. 16 practices and 284 patients completed the trial. Patients in intervention practices had a higher mean level of general satisfaction than those in control practices (difference between group scores of 8.3, 95% confidence interval 1.3 to 15.3, $P=0.023$). The two groups did not differ in mental health symptom scores, use of the voluntary sector or health service costs. **Conclusions:** For patients with common mental health problems, graduate primary care mental health workers may be effective at increasing satisfaction with their episode of care at apparently no additional financial cost.

NN7-The ProActive Trial: Efficacy of a Theory-based Behavioral Intervention to Increase Physical Activity in an At-risk Group in Primary Care

Kinmonth, Ann-Louise; Griffin, Simon, Medical Research Council Epidemiology Unit; Wareham, Nicholas; Hardeman, Wendy; Sutton, Stephen; Prevost, Toby; Fanshawe, Tom; Williams, Kate; Ekelund, Ulf; Spiegelhalter, David

Context: Low levels of physical activity are associated with disease burden. It is unclear which preventive strategies might increase activity among individuals. **Objective:** To estimate the efficacy of a behavioural intervention in increasing activity among individuals at risk of developing diabetes. **Design:** Randomized trial. **Setting:** Family homes in Eastern England. **Participants:** 365 sedentary adults without diabetes, able to walk for 15 minutes, mean age 40.6yrs, BMI 27.8kg/m², 38% male, 76% living with children, 52% strongly motivated to increase activity, accessed through parents with type 2 diabetes on general practice registers. **Intervention:** A one-year, facilitator-led program, guided by the Theory of Planned Behavior, to strengthen motivation and facilitate behavior change (eg goal-setting, self-monitoring, and relapse prevention) delivered face-to-face or by telephone (distance), compared with a brief advice leaflet. **Outcome Measures:** One-

year change in daytime physical activity, as a ratio of total over resting energy expenditure (dayPAR), measured by individually calibrated heart-rate monitoring, weight, clinical and functional status (SF-36). **Results:** 88% were followed-up. Face-to-face intervention showed no advantage over distance. Combined intervention arms showed no advantage over advice in dayPAR (mean difference -0.04; 95%CI: -0.16 to 0.08), self-reported activity or weight. Overall, DayPAR increased in all participants by 0.11 (95%CI: 0.05 to 0.18), equivalent to 20 minutes brisk walking/day. Clinical variables showed no intervention effect. Functional status improved more in the combined intervention arms than in the advice arm; score differences for mental health, 7.71 (95%CI: 4.98 to 10.4), social functioning, 6.31 (95%CI: 3.19 to 9.43) change in health, 6.02 (95%CI: 2.44 to 9.61). **Conclusions:** This trial provided no evidence for efficacy of a theory-based, behavioural intervention, despite positive impact on social function. Physical activity increased in all three groups. Future studies should assess effects of measurement and intervention independently. Incorporation of costly behavioural approaches into preventive health care should remain cautious.

WOMEN'S HEALTH ISSUES/GYNECOLOGY (OO1-OO7)

CANYON SUITE IV

OO1-The Future of Maternity Care in British Columbia: Attitudes Toward Childbirth and Obstetrical Practices of Family Physicians Providing Intrapartum Care

Kovacevic, Vesna; Klein, Michael; Eftekhary Shirkoohy, Sahba

Context: This study is part of a series describing attitudes of family physicians, obstetricians, nurses, midwives, medical students, residents, and the women they serve about management of labor and /delivery, focussing on technology and intervention. It serves as a pilot for a national study.

Objective: We examine self-reported practices, attitudes, and beliefs of family physicians providing intrapartum maternity care in BC. **Design and Outcome Measures:** Questionnaire containing 59 five-point Likert Scale items (strongly agree to strongly disagree) addressing skills, procedures, and styles of practice. One mailing to randomly-selected community family physicians practicing intrapartum maternity care in BC. **Participants and Setting:** 118 family physicians (FPs) responded, one-third from an urban setting. **Results:** Half of the FPs surveyed did not see themselves still practicing obstetrics in 5 years, with on-call requirements and family commitments as the most frequently-sited reasons. 40% believed that the use of epidural analgesia is associated with the development of fetal malpositions. Less than 10% preferred to use continuous electronic fetal monitoring over intermittent

auscultation during an uncomplicated labor. Less than 5% routinely employed episiotomy. Over 90% preferred a trial of labor over repeat elective C-section. 17% felt that it is a woman's right to choose a C-section if there are no clear maternal or fetal indications. Non-urban FPs were twice as likely to want appropriately trained nurses to take on more responsibility for normal labor and delivery. **Conclusions:** Family physicians who practice obstetrics in BC are generally a low-intervention group. This survey reveals that an alarming number of family physicians are planning to quit obstetrics in the next five years, concerning for the future of maternity care in BC. The next step in this project is to compare self-reported attitudes and practices to actual hospital data to assess whether practice pattern and beliefs affect maternal and fetal outcomes.

OO2-Effectiveness of Gabapentin for the Treatment of Hot Flashes in Postmenopausal Women: A Randomized Controlled Trial

Butt, Debra, Scarborough Hospital; Lock, Michael; Lewis, Jacqueline; Ross, Sue; Moineddin, Rahim

Context: Hot flashes are a common distressing symptom for women experiencing the cessation of ovarian function. Hormone replacement therapy (HRT) is the standard treatment but women increasingly refuse HRT due to serious side effects. Gabapentin, a non-hormonal antiseizure medication that reduces hot flashes in breast cancer patients on chemotherapy has not been adequately studied in women who enter menopause naturally. **Objective:** To evaluate the effectiveness of gabapentin in the treatment of hot flashes in postmenopausal women. **Design:** Double-blind placebo randomized controlled trial. **Setting:** Community and primary care. **Participants:** 200 45-65 year old postmenopausal women (defined by the natural cessation of menses for 1 year) who complained of at least 14 hot flashes/week were eligible to enroll. Women excluded from this study were those: on HRT, tamoxifen, chemotherapy, radiation therapy, antidepressants (SSRIs and venlafaxine), antiseizure medications; with bilateral oophorectomy, renal function impairment, neurologic conditions, hypersensitivity to gabapentin; or unable to complete questionnaires for any reason including psychiatric disorders, hypothalamic dysfunction. **Intervention:** Gabapentin, 300 mg po 3x/d for 4 weeks. **Outcome Measures:** Each woman used a hot flash diary to record daily hot flashes. A "hot flash score" was calculated as: (number of mild hot flashes during the week)+(2x number of moderate hot flashes)+(3x number of severe hot flashes)+(4x number of very severe hot flashes), 1 week prior to the intervention and for each week on the intervention. **Results:** 196 women completed the study. Postmenopausal women on gabapentin were similar in age and BMI compared to those on placebo. Women on gabapentin (n=94) had a relative risk reduction of 46% in hot flash change score compared to placebo (n=95) from baseline versus week 4. **Conclusion:** Gabapentin at 900mg/d is an effective non-hormonal agent for the treatment of hot flashes in women who enter menopause naturally.

003-The Changing Care of Women During Pregnancy, Labor, and Birth in Ontario

Maaten, Sarah, Institute for Clinical Evaluative Sciences; Guttman, Astrid; Kopp, Alex; Handa, Manavi; Jaakkimainen, Liisa

Context: In the last decade there has been a change in the involvement of general practitioners/family physicians (GP/FP) in the care and delivery of pregnant women in Canada. In the same period in Ontario midwives have been granted licensure. **Objective:** To describe at a population-level in Ontario 1) which healthcare providers care for women during pregnancy and labor, and 2) how this varies over time, local health planning regions and by patient factors such as socio-economic status. **Design, Setting, and Participants:** We identified three cohorts of women who had given birth in hospital in Ontario in 1993/94, 1998/99 and 2003/04 using data from Canadian Institute for Health information (CIHI). We describe their prenatal and intrapartum care by using physician billing data from the Ontario Health Insurance Plan (OHIP) and CIHI hospital discharge abstracts. We describe the prenatal and intrapartum services provided by midwives between 2001 and 2004 using data from the Ontario Midwifery Program from the Ministry of Health and Long-Term Care. **Results:** Fewer women are receiving prenatal care exclusively from GP/FPs. The majority of deliveries are performed by obstetricians, and the trend is increasing over time. Midwives are providing an increasing amount of prenatal and delivery services over time although the numbers of births attended are proportionally small. GP/FPs and midwives provide a greater proportion of prenatal and intrapartum care in rural areas compared to urban areas. **Conclusions:** GP/FPs are providing less care on their own, opting instead for shared care arrangements with obstetricians. The number of registered midwives is increasing, and they are providing a small but increasing proportion of prenatal and intrapartum care. Primary care reform policy makers should consider how to incorporate these newer models of care into primary care practice to ensure continuity and coordination of care. This might include more formal arrangements for shared care or formal affiliations between obstetricians, family physicians and midwives.

004-Vaginal Vault Smears: A Systematic Literature Review and Analysis of Their Usage After Hysterectomy for Indications Other Than Invasive Cancer

Stokes-Lampard, Helen, University of Birmingham; Wilson, Sue; Waddell, Christine; Ryan, Angela; Holder, Roger; Grovesenor, Linda; Kehoe, Sean

Context: The vault smear Papanicolaou test is used post-hysterectomy as a test for cellular atypia. Current guidelines are largely based on expert opinion. The extent to which vault smears are undertaken, and the reasons for their use in primary care, is unknown, although recent research suggests

that too many are being undertaken. **Objective:** To establish the evidence base for use of the test, comment on current practice and to inform guidelines. **Design:** 1. Systematic review of the literature. 2. Retrospective review of routinely collected cyto-pathology records. **Setting:** Birmingham, UK. **Participants:** Patients of Birmingham Women's Hospital who had a hysterectomy performed 1995-2005. **Results:** 1. 441 publications identified; 19 relevant to the aims, spanning 37 years. Quality: mean score 5.5, out of 10 (range 3.5–9). The probability of subsequent vault smears being abnormal was positively associated with worsening histology at hysterectomy ($p < 0.0001$). Little good quality evidence exists and as such no meta-analysis was possible. 2. Approximately 850 vault smears processed per year in one laboratory. Majority were normal (0.1% = malignancy, 4.4% = evidence of VAIN). Almost half (45.7%) were taken in Primary Care. Of 4,137 hysterectomy operations, only 233 women subsequently had vault smears (5.6%). Frequency of taking vault smears has fallen over time (from 8% of laboratory workload in 1996 to 4% in 2004). Nevertheless, women were having twice as many smears as recommended by the guidelines. Primary Care physicians tended to do multiple vault smears when initiated by hospital based colleagues. **Conclusions:** Existing research evidence is insufficient to establish the value of follow-up after hysterectomy. The balance of costs (anxiety and financial) and benefits (detection of VAIN) is not known. Vault smears after hysterectomy for reasons other than malignancy are not justified by current literature and further high quality research evidence is required.

005-Cost-effectiveness of Domestic Violence Screening in Primary Care Settings

Chen, Ping-Hsin, UMDNJ; Rovi, Sue; Washington, Judy; Jacobs, Abbie; Vega, Marielos; Johnson, Mark

Context: Professional medical organizations recommend that physicians routinely screen for domestic violence (DV). No studies have examined the cost effectiveness of DV screening in primary care settings. **Objective:** To compare the cost effectiveness of brief screening tools used in self-report, nursing staff interview, and physician interview. **Design:** Cross-sectional study employing surveys. **Setting:** Four urban family medicine practices. **Participants:** Randomized trial of 474 female patients, aged 18 or older and currently involved with a partner. Most were black (72%) and Hispanic (13%). **Intervention/Instrument:** Two brief DV screening tools, HITS and WAST-Short, plus a post-screening survey. Patients completed a post-screening survey to assess time spent screening and number of visits. Data on provider salaries and training costs were also collected. **Outcome Measures:** The average cost to detect one DV victim by screening using self-report, nursing staff interview, and physician interview. The cost of screening included annual training and implementation costs. The annual implementation costs were calculated by multiplying the total implementation time with the hourly wage of the provider. Sensitivity analyses were conducted to

take into account provider salary, time spent screening, number of visits, screening rate, training cost, and detection rates. **Results:** Overall, 16% were identified as victims. Detection rates were similar among the three administration protocols. After adjusting for confounders, the costs to detect one DV case by screening using self report were \$1.41 to \$6.21. The costs were \$6.05 to \$13.49 for the nursing staff interview, and \$16.90 to \$30.68 for the physician interview. Universal screening (or 100% screening rate) using self-report was the most cost effective method, while selective screening (25%) with physician interview was the least cost effective method. **Conclusions:** Universal screening with patient self-report is more cost-effective than other screening methods. Plus, initial training costs will increase cost-effectiveness overtime. Physicians should routinely screen for DV.

OO6-Adherence with Bisphosphonates at One Year in Patients at Risk for Fracture in a County Health System
Slee, Barbara, John Peter Smith Hospital

Context: Osteoporosis is a debilitating disease associated with significant morbidity and mortality. Patients with osteoporosis can be treated with bisphosphonates, which will reduce their risk of fragility fracture by 40 to 50% (3, 4, 5). Despite the availability of effective treatment, the overall treatment adherence rate is known to be poor. Primary care physicians need to study what factors might improve patient adherence to treatment. **Objective:** The purpose of this study is to determine adherence rates of patients taking bisphosphonates prescribed for treatment of low bone density in a county healthcare system who are at risk for fracture who were prescribed bisphosphonates for treatment. **Design:** Retrospective, observational study. **Setting/Participants:** All patients who were sent to John Peter Smith Health Network (JPSHN) Osteoporosis Center between July, 2003 and October, 2004 by their Community Health Center physician for a bone density study and who were found to have low BMD warranting treatment were studied (n=1026). **Instrument:** Pharmacy records were examined for prescribed bisphosphonates (risedronate or alendronate). Patients were excluded if they did not have record of a prescription or if their JPSHN registration expired within one year of date of initial prescription. Medication adherence was the study outcome variable. Patients who had filled 75% of the expected medication doses for one year were considered adherent. Adherence rate of the population was calculated by dividing the number of adherent patients by total number of patients receiving prescriptions. In addition to medication information, data regarding each patient's age, gender, race and participation in patient education program was collected. **Results:** The adherence rate was 53%. There were no predictors for adherence detected (P=.078). **Conclusions:** Patients' adherence to treatment of osteoporosis is poor regardless of their age, race, gender or SES. Future research should focus

on finding ways to increase patients' adherence with treatment.

OO7-Can We Predict Which Women in General Practice Will Have Experienced Partner Abuse?

Hegarty, Kelsey, University of Melbourne, Australia; Gunn, Jane; Chondros, Patty; Taft, Angela; Small, Rhonda

Context: Domestic violence is the leading contributor to death, disability and illness for women (15-44 years). The annual cost of domestic violence in Australia has been estimated to be 8.1 billion.2 Partner abuse is common in women attending general practice and has significant emotional and physical health consequences. **Objectives:** To assess whether a proposed model of risk factors for abuse:-socio-demographic features (<35 years, separated/ divorced, private health insurance); psychosocial variables (low score on mental health dimension SF 36, alcohol abuse, suicide attempt); and physical symptoms (eg injuries, diarrhoea, vaginal discharge) predicts likelihood of partner abuse for women attending general practice. **Design:** Cross sectional survey. **Setting:** 30 Australian general practices. **Patients:** Consecutive women (N=1257, response rate 77.5%) aged 16-50 years. Instrument Self report questionnaire given by research assistants in waiting room. Outcomes Socio-demographic details, partner abuse history (Composite Abuse Scale), history of depression (BDI, EPDS); mental and physical health problems (SF 36 and physical symptoms). **Results:** Women who reported a greater number of physical symptoms were more likely to report experiencing partner abuse in the last 12 months. Many individual physical symptoms were associated with partner abuse on bivariate analysis. Multivariate analysis showed a different risk factor model of partner abuse which included the socio demographic features (age, separated/divorced), the psychosocial variables (depression, SF36 mental health score) and different physical symptoms (included chest pain). **Conclusion:** There is no current evidence to support screening for partner abuse in primary care. However, case finding for women who have mental and physical health consequences of abuse is important. Clinicians should be alert for current and past partner abuse in women who are separated/divorced; depressed or have multiple physical symptoms. Future research questions include what interventions would work for abused women once identified.

Tuesday, October 17
Special Session
4 – 5:45 pm

SS2-The Role of Family Medicine Departments in NIH Clinical Translational Science Award (CTSA)

Applications

WHITE DOVE

Ewigman, Bernard, MD, University of Chicago; Newton, Warren, MD; Davis, Ardis, MSW; Chen, Frederick, MD, MPH; Michener, Lloyd, MD

The US National Institutes of Health (NIH) intends to award up to \$30 million dollars to each of 50 to 60 medical schools in the next 10 years. This funding mechanism [called the Clinical Translational Science Award (CTSA)] is intended to transform the clinical research infrastructure to support more translational science, including the translation of basic science discoveries into clinical applications and the translation of clinical applications into effective clinical and community-based practice. This NAPCRG special session will provide a forum for family medicine department chairs, research leaders, and researchers to learn more about the CTSA, to hear about the results of the first round of applications (of the 10 rounds planned over 10 years), and to discuss the strengths, weaknesses, opportunities, and threats relevant to family medicine involvement (or lack of involvement) in their institutional applications for a CTSA program. Participants will briefly provide background information on the CTSA program, a case description of extensive family medicine department involvement in a successful CTSA application, the salient findings of a recent survey of US family medicine department involvement in CTSA applications, and the results of an informal analysis of the reviews (pink sheets) of CTSA applications, followed by discussion (50 minutes). The remaining time (55 minutes) will be devoted to informal discussion among the participants.

Wednesday, October 18
Forums
9:30 am – 12:30 pm

FR1-Researching Interdisciplinary Teams in Primary Care: Lessons Learned

CORONADO BALLROOM

Fortier, Michelle, University of Ottawa; Hogg, William; Chomienne, Marie-Hélène; Grenier, Jean; Liddy, Clare; Pottie, Kevin; Farrell, Barbara

Objectives: This session will examine the challenges of conducting research about interdisciplinary teams in primary care. In Canada, provincial governments have placed the creation of interdisciplinary primary health care teams at the forefront of efforts to modernize or reform

primary care. Having the most appropriate care delivered by the most appropriate provider, in the most effective manner has become the mantra of reform. The forum will be grounded in the experiences of six large research projects that have investigated different aspects of interdisciplinary teams in primary care. Attendees will hear about the successes and challenges encountered by the researchers leading these six projects and have the opportunity to discuss and develop recommendations for future research. The presenters are all researchers at the C.T. Lamont Primary Health Care Research Center and the projects all funded by the Ontario Primary Health Care Transition Fund. The projects represented are: PAC – The Physical Activity Counselling- Project; IPEM - Inclusion of Psychologists in Family medicine Teams; APTcare - Anticipatory and Preventive Team Care; I Care for Primary Care; IMPACT - Integrating Family Medicine and Pharmacy to Advance Primary Care Therapeutics and; Care Navigator Program for Family Medicine Practices. **Content:** The six projects are intervention trials examining the addition of social workers, psychologists, nurse practitioners, pharmacists, nurse facilitators, and physical activity counsellors into traditional community based primary care group practices. Challenges relating to obtaining ethics approval; implementing, measuring and evaluating; blinding; biases; facilitation; communication; politics; and new roles for existing providers will be discussed. **Method:** Each of the above issues will be addressed by one of the researchers who will relate the issue to their specific project. The other members of the panel will be invited to comment briefly then the audience will be asked for input on the issue. **Prerequisite Knowledge:** None.

FR2-International Forum on Primary Care Researchable Databases

CANYON SUITE I & II

Stewart, Moira, The University of Western Ontario; Dovey, Susan; Dahan, Rachel; Klinkman, Michael; Marshall, Neil; Terry, Amanda

This Forum was developed in order for NAPCRG members to learn about implementing electronic health records, creating primary care researchable databases from electronic health records, and conducting research with these databases. Presentations will be made by: Dr. Susan Dovey from New Zealand, Dr. Michael Klinkman from the United States, and Dr. Neil Marshall from Canada. Specifically, each presenter will discuss minimum requirements for primary care researchable databases and national issues regarding electronic health records. Following the presentations, a panel session will be held to further discuss methodological challenges and research opportunities associated with primary care databases. The panel discussion will facilitate audience participation and panel member responses to issues raised during the presentations. In addition, challenges and opportunities associated with primary health care researchable databases in each country will be compared and contrasted.

Wednesday, October 18

Workshops

9:30 – 11 am

WK13-The Role of Primary Health Care Research in Developing an Evidence Base for Primary Care Practitioners to Reduce Health Disparities in Their Communities and Countries

JOSHUA TREE

Harris, Mark, University of New South Wales; Furler, John; Kidd, Michael; Harris, Elizabeth

Objective: To identify researchers with an interest in developing an evidence base for primary care practitioners, professional and training organisations to reduce health inequalities in their countries. **Context:** There are significant disparities in the health of populations in western industrialised countries. There is evidence that comprehensive primary health care services can reduce health inequalities. However there is less evidence for the most effective role of family practitioners and their organisations in addressing these inequalities. Networks exist within some countries to support research and advocacy on these issues. **Program Overview:** The Forum will begin with an overview of health disparities in western industrialised countries and highlight evidence of the important role that primary care systems have in preventing health inequalities at practice and policy levels. A case study of action in Australia: An overview actions that are currently being taken to build an evidence base for effective interventions in primary care systems at practice and policy levels including the role of the profession of family practice and its professional organization. **Small Group Discussion:** Participants will then discuss in small groups their own interests and activities and present an overview of this material back to the larger to identify areas of common interest. **Conclusion:** Participants will then be asked to reflect on what potential there may be to establish links between researchers and research groups to share experiences and develop collaborative research programs.

WK14-From the BMJ: A Potpourri on Primary Care Research for Prospective Authors

AGAVE BALLROOM

Kamerow, Douglas, BMJ; Fletcher, John; Godlee, Fiona; Macauley, Domhnall

Objectives: To provide prospective authors information and tips about study design, peer review, conflicts of interest, and fraud, from BMJ editors. **Content:** (1) What the primary care editor of BMJ looks for in submissions: originality, an answerable question, appropriate methods, competent execution, useful results; (2) Pitfalls to avoid; (3) Peer review: how to be a good reviewer; (4) a few words on conflicts of interest and fraud; (5) Questions and discussion. **Methods for Audience Participation:** The presentation will include didactic material and case studies of actual

(disguised) submissions for discussion with the audience.

Questions and comments encouraged. **Prerequisite**

Knowledge: English language (American OK).

WK15-How Can We Make it Easier to Recruit Patients to Primary Care Trials?

TURQUOISE I

Treweek, Shaun, University of Dundee; Sullivan, Frank; Neville, Ron; Reed, Chris, for the Scottish Collaboration of Trialists Project

Objective: To explore practical and ethical issues related to 1) recruitment of patients to randomized controlled trials in primary care and 2) the use of electronic alerting systems to increase recruitment to such trials. **Content:** The session will begin with a short presentation outlining the consequences of poor trial recruitment including participants' experiences and what is known from systematic reviews of the barriers to and facilitators of effective trial recruitment. The use of electronic alerting multiagent systems installed on clinicians' computers to support trial recruitment will be described. The practical and ethical issues related to the use of such systems will be discussed and a summary of recent qualitative work with patients, family doctors and researchers in Scotland will be presented. Participants will be encouraged throughout the session to contribute their own experiences of recruiting patients to trials. **Audience Participation:** After the opening presentation participants will take part in a small factorial survey that uses three to six vignettes describing primary care consultations where it may be possible to recruit a patient to a trial. The vignettes will vary according to factors identified from the literature and from qualitative work as being relevant to trial recruitment. This survey will be followed by a discussion that will aim to identify additional factors not covered by the vignettes. The electronic alerting presentation will be followed by a brainstorming session to identify issues under the headings of patient, clinician, practice and trial factors that may affect the ability of these systems to achieve their aims. The session will end with an interactive session where participants prioritise factors and issues identified during the session. **Prerequisite Knowledge:** No prerequisite knowledge is required although an awareness of issues relevant to trial recruitment would be an advantage, as would previous participation in trials.

WK16-Technology and Practice Change to Support Patient-centered, Collaborative Care

TURQUOISE II

Wasson, John, Dartmouth Medical School/Dartmouth COOP Project; Moore, L. Gordon; Johnson, Deborah; Zettek, Judy

Objectives: Workshop attendees will be able to: 1. Understand much more than the jargon of "patient-centered" and "collaborative care." 2. Describe the practical implications of patient-centered, collaborative care for primary care practices. 3. Apply technologies and practice changes to support patient-centered, collaborative care. **Content:** In this interactive

workshop attendees will learn about available technology and feasible practice changes that bridge the gap between desirable goals and limited time. Our past research and that of many others reinforce the observation that only technology (such as hardware and software) and the way humans use the technology (called *techne*) can not overcome the many obstacles for patient-centered, collaborative care. Despite these limitations, the examples will demonstrate ways that significant progress toward patient-centered, collaborative care can be made. Agenda: 1. Definitions and data supporting patient-centered, collaborative care; 2. An illustration of resource planning for patient-centered, collaborative care; 3. Discussion of barriers and opportunities for resource planning; 4. Description of technologies and *techne*; 5. Implementing technologies and *techne* in practice; and 6. Discussion of implementation. Method: Interactive. Prerequisite Knowledge: None, for all levels.

Wednesday, October 18 International Special Session 9:30 – 11 am CANYON SUITE III

SS3- A China-US Collaboration to Foster Community-oriented Primary Care Research

Li, Li, Case Western Reserve University; Wang, Guang-Rong; Li, Zhe; Stange, Kurt; Gong, You-Long; Fu, Dong-Bo; Landers, Steven; Shi, Yong-Xin; Pan, Lian-Zhi; Graham, Antoinette; Fu, Hua

Content: This workshop will explore opportunities to learn from striking commonalities and stark differences between the Chinese and US health care systems, cultural context and disease and risk factor epidemiology. In addition, we will examine the process of developing cross-national collaboration for community-oriented primary care research.

Method: The workshop will have two components: didactic and interactive. The didactic component will begin with an introduction to the China-US health and health care contrasts and commonalities, followed by the brief presentation of 6 COPC-relevant studies from the Zhabei District Community Health Service in Shanghai. These studies use a variety of data sources to examine health behaviors, community health service delivery, community application of traditional Chinese medicine, chronic disease care for elderly in the community, cancer incidence and control, and an innovative community-based program for patient chronic disease self-management. The interactive component will begin with a brief case study of the Zhabei/Fudan-Case collaboration, followed by discussion of the process of developing a strong and sustainable international primary care research collaboration. Prerequisite Knowledge: None required.

Wednesday, October 18

Workshops 11 am – 12:30 pm

WK17-Applying Survey Design Guidelines to Web-based and Other Electronic Survey Tools

JOSHUA TREE

Passmore, Cindy, Waco Faculty Development Center

Objectives: After participation in this seminar, participants will be able to: 1. Recognize the role of survey instruments in research methodology, 2. Recognize the potential for misuse of electronic survey technology, 3. Recognize and properly apply the concepts of item format and construction to web-based and other electronic survey tools, and 4. Improve the quality of their existing survey instrument (if any). Content, Method, and Extent of Audience Participation: The principles of survey design are simple, practical and easily incorporated into every survey. This workshop demonstrates simple statistical survey design techniques and the increasingly important application of these guidelines to electronic surveys. The presenter and participants will introduce themselves and briefly describe their survey design experience. Didactic and interactive content will include: 1. Principles of the role and usefulness of survey instruments in research methodology, especially including when survey use is indicated will be discussed. 2. Presenter will discuss item format and item construction using good and bad examples. 3. Special focus will be placed on guidelines for matching questions / items to response format. This area is particularly important given the ready availability of pre-formatted electronic survey packages. 4. Participants will break into groups and complete an item writing / format matching exercise. 5. Participants will be encouraged to comment on what they have learned from the workshop, any points that are still unclear to them, how they have improved surveys they brought with them, and on future projects they plan to undertake using their new knowledge and skills. No prerequisite knowledge is required.

WK18-Implementation on a National Scale: Taking Facilitation to Decision Makers Across Canada

AGAVE BALLROOM

White, Heather, Office of Primary Health Care/Memorial University

Content: This session will explore a process of collaboration that was used to engage over 300 Canadian health practitioners, researchers and managers across the country. This collaboration used a participatory method designed to ground our work in a praxis orientation by facilitating the development of a Canadian manual that can be used in any province and by various health care practitioners. This document considers the use of facilitation and facilitation skills through evidence-based planning, prevention and promotion, teams, collaboration and scope of practice,

building community capacity, chronic disease management, communication, and information management. Both the process and the application are being evaluated via a web-based survey; thus, encouraging further refinement.

Objectives: 1) To explore the participatory research method which was used to engage over 300 health care providers in the writing and use of a Canadian manual that reflects their collective work and expertise in the area of facilitating health care changes; 2) To present an overview of the manual developed through this process and offer an opportunity to build facilitation skills to support the use of participatory research methods. **Method:** This is intended to be an interactive session that focuses on sharing information on the process of collaborative engagement used in this Canadian research project. The methods used to deliver this workshop will include: 1) Short presentations on the project, process used and challenges encountered; 2) Interactive demonstration of facilitation skills that can assist the audience in reproducing this research methodology; and 3) Small group discussion to demonstrate and explore the realities and challenges of using participatory methods. **Prerequisite Knowledge:** No particular prerequisite knowledge is assumed.

WK19-USPSTF Methods of Updating the Evidence for Clinical Preventive Services

TURQUOISE II

Wolff, Tracy, Agency for Healthcare Research and Quality; Yawn, Barbara

Objectives: 1) Review the methodological processes of the USPSTF; 2) Identify steps involved in updating systematic reviews and evidence-based guidelines; 3) Discuss the challenges in keeping evidence up-to-date; and 4) Understand differences in the methodology of updating evidence from guideline-making organizations and researchers who perform systematic reviews. **Content:** The USPSTF is the leading independent panel of nationally renowned, non-federal experts in evidence-based prevention. Its recommendations are considered the “gold standard” for clinical preventive services. There will be a brief review of the current USPSTF methodology of full review of the evidence on a preventive service. The primary focus will be in discussing the methods the USPSTF have developed in keeping recommendations up-to-date: updating the evidence in the systematic review and updating the recommendation. The updating methodology will be reviewed using examples from recent topics (ex, screening for skin cancer) and walking through the steps. The presenters will further discuss specific challenges in the updating recommendations and review how other organizations have addressed these challenges, including the Canadian Task Force and UK’s National Institute for Health

and Clinical Excellence (NICE). Lastly, the session will describe the resources available for primary care teachers and students to access the evidence-based USPSTF recommendations, including the AHRQ website, PDA and pocket guide. **Audience Participation:** Presenters will discuss the evidence found in each step of the updating process for a prevention topic and ask the audience: 1) to deliberate on how they would address challenges in the review, and 2) to share their interpretation of the evidence in each step of the process. Presenters will also discuss different guideline-making organizations’ processes for updating guidelines and the audience will be asked to identify differences in methodologies that may explain differences in the conclusions.

WK20-The IRB Made Plain and Simple

TURQUOISE III

Miser, W. Fred, The Ohio State University

Introduction: All research done on human subjects, including educational research, requires approval by an Institutional Review Board (IRB) prior to starting that research. Over the years IRB requirements have become increasingly more complex, and to some, more daunting, as new federal regulations are created. HIPAA regulations have also influenced the complexity of getting research approved. To some, this complexity provides a major roadblock to initiating a quality research project. **Objectives:** This workshop will provide participants a clear understanding of the major components of the IRB approval process, and will review the more common mistakes that delay research. By the end of the session, participants should be able to 1) identify the major components of the IRB submission process; 2) distinguish among the various types of IRB approval - exempt, expedited, full board review; 3) write an informed consent that includes the major required components; and 4) identify the major research requirements of HIPAA. **Relevance:** All research done on human subjects requires IRB approval. This seminar provides to the researcher an understanding of the IRB process. **Content:** The following subjects will be covered in this workshop: 1) historical introduction to the IRB; 2) the Belmont Report; 3) an overview of the IRB; 4) types of IRB approval (exempt, expedited, full board review); 5) informed consent; 6) HIPAA and what it has to do with research; and 7) lessons learned from the IRB. **Audience Participation:** This will be a mixture of lecture, discussion, and exercises using cases. The audience will be asked to critique portions of informed consent examples, and to share challenges they previously have encountered. Time will be allowed for questions and discussion. **Prerequisite Knowledge:** This workshop is geared toward the beginner and intermediate researcher.

Monday, October 16

Posters – Session I

9:30 – 10:45 am

Turquoise Ballroom

BEHAVIORAL/PSYCHOSOCIAL	PS100-PS113
CANCER RESEARCH	PS114-PS122
CARDIOLOGY	PS123-PS126
EPIDEMIOLOGY	PS127-PS138
HEALTH CARE DELIVERY/HEALTH SERVICES RESEARCH	PS140-PS171
OFFICE/PRACTICE MANAGEMENT	PS172-PS179
RESEARCH CAPACITY BUILDING	PS180-PS186
WOMEN'S HEALTH ISSUES/ GYNECOLOGY	PS187-PS206
OBESITY/EXERCISE/NUTRITION	PS207-PS211
MEDICAL INFORMATICS	PS212-PS216

PS100-Cognitive Impairment: Prevalence and Associated Factors With Medication Adherence in Urban Underserved Minorities

PS101-The Experiences of Caregivers of Patients With Alzheimer's Disease or a Related Dementia When Considering Accessing Formal Community Services

PS102-Feelings of Guilt Post Myocardial Infarction: The Impact of Past Lifestyle Choices

PS103-Health Psychology and Family Medicine: Partners in Health

PS104-Prayer for Health and Healthcare Utilization: Results from the National Health Interview Survey

PS105-A Systematic Review of Integrated Primary Care in the United States

PS106-Effect of Racial Concordance on Advice to Patients

PS107-Behavioral Recommendations: Your Patients Are Listening

PS108-Can Changing How Mom Eats Prevent Obesity in Toddlers?: Report on The Pilot Study and Baseline Data Results

PS109-Presence of Depression in Patients Who Present With Headache

PS110-Media Influence on Family Medicine Office Visits in a Large Metropolitan Community

PS111-The Impact of Hurricane Katrina on Levels of Depression and Anxiety

PS112-Identification and Management of Psychiatric Disorders Among Children and Adolescents by Family Physicians

PS113-Duloxetine in Practice-based Clinical Settings: Results from Lilly's Emotional and Physical Symptoms of Depression Study (LEAPS)

PS114-Cancer Screening Adherence Through Technology-enhanced Shared Decision Making (CSATS)

PS115-Perspectives of Japanese Men and Women on Cancer Screening

PS116-Quality of Life in Patients Undergoing Mistletoe and Chemotherapy Treatment

PS117-Colorectal Cancer Screening Test Preferences Among Three Racial/Ethnic Groups

PS119-Receipt of Non-cancer Care Among Colorectal Cancer Patients

PS120-Endoscopists' Recommendations on Repeat Colonoscopy: What Primary Care Doctors See

PS121-Prompting and Reminding at Encounters for Prevention (PREP): Impact of a Reminder System on Colorectal Cancer Screening in Diverse Practices

PS122-DOVE: Detecting Ovarian Cancer Earlier: A Meta-analysis to Produce a Triage Tool for Symptoms and Signs Suggestive of Ovarian Cancer

PS123-The Association of Self Reported "Readiness to Change Stage" and A1c Among Adult Diabetic Type 2 Patients

PS124-Peripheral Arterial Disease Screening of an Underserved High Risk Population

PS125-The Lipid Knowledge Assessment Study

PS126-Obstacles and Solutions to Implementing Point-of Care Lipid Testing in a Research Protocol

PS127-A Geographic Information System (GIS) Use in Public Health: Ambulance Pickups for Breathing Problems During a Waste Processing Facility Fire

PS128-Assessment of the Metabolic Syndrome in a Clinical Practice Within an Underserved Community

Monday Posters – Session I

PS129-Health Care Utilization Patterns Among African-American Women With Systemic Lupus Erythematosus Living in the Inner-city

PS130-Probing the Boundaries of Primary Care Interventions: Analyzing the Effectiveness of Intimate Partner and Sexual Violence in HIV/AIDS Patients

PS131-Parkinson's Disease and Markers of Traffic-derived and Environmental Manganese Air Pollution in Two Canadian Cities

PS132-Does it Make a Difference Where You Get Your Primary Medical Care?

PS133-Family Physicians' Expectations Regarding Their Involvement in the Follow-up of Cancer Patients: Preliminary Results

PS134-Chronic Illness Self-management and Multimorbidity in a Primary Care Unit

PS135-Blastomycosis in Indoor Cats: Suburban Chicago, Illinois

PS136-The Assessment of the Methodological Quality of Qualitative Meta-syntheses in Current Published Literature

PS137-Improved Binomial Confidence Intervals for a Single Proportion

PS138-Better Binomial Confidence Intervals for the Difference Between Two Independent Proportions

PS140-Quality of Acute Pediatric Asthma Care in Rural Emergency Departments

PS141-Self-reported Health Status as a Predictive Indicator in Consumer Assessments of Primary Care

PS142-Assessing the Needs and Issues Facing Family Physicians in Hamilton, Ontario

PS143-Accuracy of Perceived Changes in Income and Workload Over Time

PS144-South Carolina Mercury Proximity Study

PS145-Barriers to Self-management Reported by Seniors With Multiple Medical Conditions

PS146-The Challenges of Organizational Growth in Ontario Community Health Centers

PS147-Improving Primary Palliative Care: A Critical Discursive Research Project on Physicians' Affective Skills and Shared Decision Making

PS148-Usual Source of Care and Variation in Health Care Costs

PS149-Validation of a US Health Literacy Screening Tool and Development of Proxy Indicators of Low Health Literacy in the UK

PS150-Identifying Patients With Multiple Medical Conditions at Risk for Poor Health Outcomes

PS151-The Knowledge Work of Multi-disciplinary Primary Health Care Teams

PS152-The Economic Impact of Family Physicians on Their State Economy

PS153-The Validity of the INR to Albumin Ratio as a Rapid Prediction Rule in End State Liver Disease

PS154-Medication Error at the Physician-Pharmacist Interface

PS155-Geographic Information Systems to Enhance Healthcare Delivery to a Transitioning Ethnic Community

PS156-How Do Family Physicians as Providers of Primary Care Best Serve Patients, the Public, and Governments?

PS157-Passing the Torch in Quality Improvement Efforts

PS158-Why Do People Choose the Hospital Emergency Instead of Their Regular Source of Primary Care?

PS159-Out-of-hours Care: Standard Setting Using the Out-of-hours Patient Questionnaire

PS160-Use of Services for Health Emergencies by Patients Attending Family Health Networks, Family Health Groups, and Fee-for-service Practices in Thunder Bay, Ontario

PS161-Testing to Prevent Colon Cancer in Rural Colorado: Factors That Affect Being Tested

PS162-P-PROMPT: Provider and Patient Reminders in Ontario Using Multi-strategy Prevention Tools Demonstration Project

PS163-Rehabilitation in Primary Care: A Randomized Controlled Trial to Assess the Effectiveness and Costs of Rehabilitation Services on the Health Status of Adults With Chronic Illness

Monday Posters – Session I

PS164-Issues in the Development of Latent Variables for a Patient Safety Study

PS165-Development of a Lexicon to Best Describe Terms and Concepts in Primary Health Care

PS166-Community Care for Complex Illness

PS167-The RoadMAP Project: A Primary Care-based, Interprofessional, Chronic Disease Management Strategy

PS168-Nurses' Involvement in Quebec Family Medicine Clinics: Changes in the Care Experiences From the User's Perspective

PS169-Social Capital in Primary Care Practices and Implications for Patient Outcomes

PS170-Sustainability of Improved Preventive Services' Delivery Resulting From Outreach Facilitation

PS171-Following-up Infants Til One Year Old in a Family Medicine Outpatient Clinic

PS172-A Qualitative Needs Assessment of Preparation for Community Health Center Clinical Leadership

PS173-Physicians and Nurses in Collaborative Practice: Perceptions and Expectations of Patients With Multiple Chronic Conditions

PS174-Diabetes Care in Family Medicine Practices With Nurse Practitioners and Physician Assistants

PS175-Development of a Voluntary Assessment Program for Interprofessional Family Practices in Ontario

PS176-Building Knowledge and Skills for Effective Leadership for Change in Primary Care

PS178-Measures to Characterize Primary Care Practice - Part 1: Development, Issues, and Solutions

PS179-Measures to Characterize Primary Care Practice - Part 2: Results

PS180-Formation of Researchers in Family Medicine: The Relationship of Tutor- Resident in the Mentoring Process

PS181-The TAPS (Threats to Australian Patient Safety) Project- GP Registrars' Perspective

PS182-The RECAP Project: Improving Research Capacity and Dissemination in Primary Care Health Services Research in Canada

PS183-Development of an Interdisciplinary & Teaching Medical & Dental Clinic for Inner-city Street Youth

PS184- Frequency of Drug Interactions Among Primary Care Patients at a Family Medicine Residency Clinic

PS185-Building Research Capacity by Asking Healthcare Provider Organizations for Research Questions

PS186-Content and Context of a Research Registry For Primary Care

PS187-Integration of Early Abortion Services Into Primary Care: Acceptability Survey of Female Patients

PS188-A Longitudinal Study of Premenstrual Syndrome and Risk Factors in Nursing Graduates

PS189-The Impact of Liquid-based Pap Smears on Colposcopy Training

PS190-Recognition of Overweight Children Utilizing Electronic Medical Records

PS191-Evaluating a Three-hour Breastfeeding Course for Practicing Physicians

PS192-Seasonal Variation in Postpartum Depression

PS193-Doulas' Views Toward Birthing Practices, Their Profession, Interaction With, and Acceptance by Other Providers

PS194-Overcoming Barriers to Osteoporosis Follow-up for Patients After a Low-trauma Fracture: A Qualitative Study

PS195-Disease Burden of Women and Mental Health Utilization in the Veterans Health Administration

PS196-Analysis of Planned, Unplanned, and Teen Pregnancies at the Capital Region Family Health Center, August 2003 through December 2005

PS197-Vitamin D Deficiency in Elderly African-American Women

PS198-Vaginitis of Unknown Etiology

PS199-Transfer of Care in Ectopic Pregnancy

PS200-Are Reminder Letters Useful to Primary Care Patients Due or Overdue for Pap Test Screening?

PS201-Women's Perspectives on the Acceptability of Reminder Letters for Screening Mammography

Tuesday Posters – Session II

PS202-Evaluation of Clinical Decision Rules for the Need to Undergo Bone Mineral Density Testing in Non-Hispanic Black Women

PS203-See Me Now: An Obesity Prevention Project, Community Center of Excellence in Women's Health at Turley Family Health Center

PS204-Attitudes and Beliefs About Emergency Contraception in Patients at MUSC Family Medicine Clinics

PS205-The Use of Telephonic Case Management to Improve Screening Mammography Rates in Women With Mental Health and Substance Abuse Issues

PS206-The Botanica as Broker of Advice and Products for Vaginal Health

PS207-Access to a Home Bathroom Scale Among Participants in the Get Fit Maryland Project

PS208-Improving Weight Management Systems of Care at a Community Health Center

PS210-Recognition and Management of Obesity in Primary Care Practice in Southeastern New England

PS211-Downstream Revenue to an Academic Medical Center from a Primary Care Network

PS212-An FPIN Study: What is the Risk of Bowel Strangulation in an Active Adult Male With an Untreated Abdominal or Inguinal Hernia?

PS213-Gauging the Impact of Clinical Computer Mediated Communication: Validity of a New Assessment Method

PS214-Using GIS to Map the Community Benefits of a Family Residency Center

PS215-A Tablet-based Health Behavior Assessment in Primary Care: Acceptability With Patients and Clinical Staff

PS216-FMR:CCI: A New Perspective on Canadian Family Medicine Research

Tuesday, October 17 Posters – Session II

9:30 – 10:45 am

Turquoise III

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DIABETES	PS221-PS231
HEALTH CARE DISPARITIES	PS232-PS239
EDUCATION/TRAINING	PS240-PS261
GERIATRICS	PS262-PS267
PRESCRIBING PRACTICE/ MEDICATION MANAGEMENT	PS269-PS273
HEALTH PROMOTION/ DISEASE PREVENTION	PS274-PS290
HYPERTENSION	PS291-PS295
OBSTETRICS	PS296-PS303
PRACTICE-BASED RESEARCH	PS304-PS318
PULMONOLOGY	PS319-PS322
VULNERABLE POPULATIONS	PS323-PS331

PS217-Implementing a Medical Home Model in the Capital Region Family Health Center

PS218-Office-based Primary Care for Adults in Ontario, Canada

PS219-A Virtual Office of Synthesis and Information Reflecting the Complexity of PHC (VOSI)

PS220-Re-order: A Methodology for Engaging Stakeholders in Reorganizing the Response of Australian Primary Care to Depression

PS221-Managing Aboriginals' Type 2 Diabetes: Development of a Monitoring Tool

PS222-Incidence of Childhood Obesity Among Children of Obese Mothers at a Community Health Center

PS223-Using Podcasting to Deliver Diabetes Teaching to Family Medicine Residents

PS224-Impact of Point of Care HbA1C testing on Diabetes Management in an University Based Family Medicine Practice

PS225-Development of Improved Diabetes Screening Criteria from a Large National Health Information Database

PS226-Managing Uncontrolled Diabetes in an Underserved Latino Population: The Clinical Encounter

PS227-Prioritizing Care and Audit and Feedback to Improve Cholesterol Management in Diabetic Patients in Remote Aboriginal Settings

Tuesday Posters – Session II

PS228-Examining the Difference of Physician Inertia in Treatment Intensification Among Depressed Versus Non-depressed Patients With Diabetes Mellitus Type 2

PS229-A Descriptive Study of Type 2 Diabetic Patients Discharged From a Specialty Clinic Back to Their Primary Care Provider

PS230-Ways of Addressing Knowledge, Education, and Understanding in Pre-diabetes: The WAKEUP Study

PS231-Impact of Ambient Air Pollution on Diabetes Hospital Admission in California

PS232-Are Trust and Communication Predictors for Attrition From a Randomized Clinical Trial?

PS233-A Triple Threat: Is Depression Associated With Worse Glycemic Control in Diabetic Persons Infected With Hepatitis C?

PS234-A Meta-analysis of HIV Voluntary Counseling and Testing (VCT) in the Era of HAART

PS236-Evaluation of Project INHALE: A Program to Improve Asthma Outcomes Through the Reduction of In-home Triggers

PS237-Replicating a Successful Weight Control Program for African-American and Black Women: SisterTalk Hartford

PS238-Socioeconomic Differences in Processes of Mental Health Service Delivery Under Universal Health Coverage

PS239-Impact of Male Sexual Partner Relationships on Repeat Pregnancy

PS240-Using the Patient Enablement Instrument (PEI) as an Evaluation Tool in a Family Medicine Residency

PS241-Education in Complementary and Alternative Medicine in Japanese Medical Schools: Follow-up Study, 1999-2004

PS242-Attracting Family Physicians Back to Acute Care Hospitals

PS243-The Outcome of Graduates of A Family Medicine Residency Program

PS244-Readability Characteristics of Consumer Medication Information for Nasal Steroid Inhalers

PS245-Protected Time and Developing Research Skills in Primary Care Faculty

PS246-Symptoms to Diagnosis in Multiple Sclerosis

PS247-Teaching Residents Evidence Based Medicine in an Ambulatory Clinic

PS248-Assessing How Well Primary Care Residents Are Learning Dermatology

PS249-Effectiveness of a Provider Feedback System on Diabetes Outcomes in a Residency Practice

PS250-Interactive Genetic Counseling for Family Physicians

PS251-Learners' Attitudes Towards and Educational Experience of Interprofessional Maternity Care - Babies Can't Wait Project

PS252-Exploring Elderly Patients' Perceptions About Strategies to Improve Adherence to Medications: A Qualitative Study

PS253-Changes in Intended Scope of Practice by Family Medicine Residents: Comparison Between an Urban and Rural Training Program

PS254-Exploring Facilitator Impact During a Quality Improvement Process

PS255-Evaluation of Impact of a Family Medicine Training in Northern Mali

PS256-Holistic Approach to Patient Evaluation: Observable Behaviors

PS257-Family Practitioners' Roles in Care and Prevention of Fragility Fractures in Midlife Women

PS258-Rising to the Top: Predictors of Admission Success in the Alberta International Medical Graduate (AIMG) Program

PS259-Evaluation of one Primary Care / Family Medicine Research Web Site

PS260-Recommendations for "Best Practices" in Accessing Institutions for Interprofessional Collaboration Research in Multi-site Settings

PS261-Preschool Vision Screening: A Survey of Family Medicine Residents' Education Experiences and Practice Habits

Tuesday Posters – Session II

PS262-Use of Drug Interaction Software for Managing Polypharmacy and Predicting Adverse Drug Events in the Elderly

PS263-Practice Patterns in Evaluation and Management of Dementia Among Primary Care Residents, Primary Care Physicians, and Geriatricians

PS264-Analysis of End-of-life Care in Elderly Military Beneficiaries: A Pilot Study

PS265-Psychometric Analyses of the WHOQOL-Old Pilot Module: A Quantitative Stage in Instrument Development

PS266-A Study of Dizziness and Related Symptoms in Older Persons in Primary Care

PS267-Does Neuro-stimulants Use Improve Functionality in Patients With Decreased Level of Consciousness?

PS269-High Levels of Satisfaction Reported by Patients Receiving Services Provided by Pharmacists Integrated Into Family Medicine

PS270-Integrating a Clinical Pharmacist Into a Primary Care Network

PS271-Collaborative Working Relationships Between Family Physicians And Pharmacists: Changes Over Time As Pharmacists Integrated Into Family Medicine

PS272-Physician Communication About the Costs of Newly Prescribed Medications

PS273-Sildenafil Is Well Tolerated and Effective in Men With Both Erectile Dysfunction and Lower Urinary Tract Symptoms

PS274-There's No Way I Could Catch HIV: Examining HIV Perceptions in the United States Using a National Health Survey

PS275-Patient Perspectives on Reminder Letters for Influenza Vaccinations in an Older Primary Care Patient Population

PS276-Design of a Community-randomized Trial of the Cardiovascular Health Awareness Program (CHAP)

PS277-A Systematic Review of Colonoscopies Performed by Family Physicians

PS278-Rural Family Physicians and Local Public Health Departments

PS280-Exposure to a Community-based Colon Cancer Intervention: Is the Word Getting Out?

PS281-A Chart Review on the Use of Pneumococcal Vaccine in the Recommended Population at the UTMB Family Medicine Clinic

PS282-Family Diet, Exercise Behaviors, and Readiness to Change in an Urban Primary Care Population

PS283-HHS Quick Guide to Health Literacy

PS284-Perceptions of Patients With Multiple Chronic Conditions About a Collaborative Physician-Nurse Model for Promoting Physical Activity in Primary Care

PS285-Rapid Testing for HIV in the Primary Care Setting

PS286-Clinician, Staff, and Patient Perspectives on a Comprehensive Practice-Friendly Model for Promoting Healthy Behaviors

PS287-Evaluating Community Based Nutrition Education Programs: The Food Literacy Partners Program

PS288-A Comprehensive Practice-friendly Model for Promoting Healthy Behaviors

PS289-Privileging Criteria to be Able to Perform Colonoscopies and Esophagastroduodenoscopies (EGDs) in Healthcare Facilities

PS290-QuitLink: Partnering Clinical Practices and Telephone Quit Lines to Leverage an Improvement in the Quality of Tobacco Counseling in Primary Care

PS291-Conventional Versus Automated Measurement of Blood Pressure in the Office: The CAMBO Trial

PS292-Study of Some Plasma Level Cations in Dyslipidemia

PS293-Feasibility of a School-based Program to Raise Community Awareness of High Blood Pressure

PS294-Home Blood Pressure Monitoring - the Patient's View

PS295-An Intensive, Protocol-based Approach to Achieving Blood Pressure Target in Patients With Essential Hypertension in Primary Care

PS296-OB Trends at a Community Hospital

PS297-Differences in Psychosocial Risk Perception Between Providers and Women With Problematic Substance Use in Pregnancy Using the ALPHA Form

Tuesday Posters – Session II

PS298-Meeting in Strange Places: An Exploration of the Experience of Childbirth When Women Are Attended by an On-call Family Physician

PS299-Practitioners' Preferences of Models of Obstetrical Care in Ontario

PS300-Family Medicine Obstetric Fellowship Graduates: How Many Are Still Delivering Babies?

PS301-Family Medicine International Adoption Clinical Practice Survey

PS302-Predictive Value of the Thumb to Forearm Flex Test on Rates of Progression Through Labor in Nulliparous Women: A Pilot Study

PS303-Stepped Care Treatment of Postpartum Depression

PS304-Comparison of Small Group Versus Individual Learning Using a Case-based Module and Practice Reflection Tool: A Preliminary Study

PS305-Literacy in Primary Care: Comparison of Wisconsin to National Approaches and Attitudes

PS306-Using a Common Set of Measures to Combine Data Across PBRNs: A Report From Prescription for Health

PS307-Multimorbidity in Diabetic Patients and Adherence to Screening Guidelines in Primary Care

PS308-Recruitment for Practice-based Research Network Studies

PS309-Patient Satisfaction With Primary Care

PS310-Exploring Unmet Needs Among Urban Youth Seeking Health Care

PS311-Rehabilitation in Primary Care: Satisfaction of Patients and Team Members

PS312-Predictors of Successful Management of Opiate Addiction with Buprenorphine in a Rural Family Medicine

PS313-Uncomplicated Acute Bronchitis: How Uncomplicated Is It?

PS314-Will Frequent Provisions of Physicians' Hemoglobin A1C Profiles Improve Glycemic Control?

PS315-Primary Care Pathway to Improve Breast Diagnostic Care

PS316-Developing a Nurse Practitioner Practice Based Research Network

PS317-Assessing the Accuracy of a Physician Self-assessment (PSA) Tool for Quality Assurance

PS318-Does Pulse Rate Predict Severity of Acute Infection in Children?

PS319-GpiAG/Leicester Asthma and Dysfunctional breathing study (GLAD)

PS320-AZMATICS: Azithromycin Asthma Trial in Community Settings

PS321-Step-up and Step-down in Management of Asthma

PS322-Evaluation of the Adherence to Diagnosis and Management Guidelines for COPD in the Outpatient Setting

PS323-Understanding 'In-system' Access to Primary Care: Results From the Comparison of Models of Primary Care Project

PS324-Die Another Day: Hmong Decision Making for Kidney Stones

PS325-Patients' Functional Health Literacy Skills and Quality of Patient-Physician Communication during Family Medicine Encounters

PS326-Using Volunteer Bilingual Hospital Employees as Dual-rolled Medical Interpreters

PS327-Maintaining Medical Student Interest in Working With Underserved Populations Through the Clinical Clerkships

PS328-Effect of Financial Incentives on Improvement in Medical Quality Indicators for Primary Care

PS329-Integrating Mental Health Services for Homeless Mothers and Children in Primary Care

PS330-Connecting Youth With Care: Mental Health and Addictions Navigation

PS331-Photography as Empowering for Aboriginal Breast Cancer Survivors: Suggestions for Primary Health Care

Monday, October 16
Poster Abstracts – Session I
9:30 – 10:45 am

Turquoise Ballroom

BEHAVIORAL/PSYCHOSOCIAL (PS100-PS113)

PS100-Cognitive Impairment: Prevalence and Associated Factors With Medication Adherence in Urban Underserved Minorities

Mouton, Charles; Hunter, Finie, Howard University

Context: Recognizing the need to improve the understanding of health disparities in urban minorities, The Department of Community and Family Medicine (CFM) at Howard University College of Medicine established a primary care practice-based research network called DC PrimCaRe. Well documented studies estimate up to sixty percent of the minority population does not comply with the prescribed drug regimen. Although the reasons for lack of compliance may vary, the role of cognitive impairment has not been explored. **Objective:** 1) To estimate the prevalence of cognitive impairment and low health literacy; 2) To estimate the association of cognitive impairment with self-reported medication adherence. **Design:** Cross-sectional pilot study conducted during a randomly selected two week period at each practice site. Patients are screened for cognitive impairment utilizing an executive clock drawing test (CLOX) and the Rapid Estimate of Adult Literacy in Medicine (REALM) test to measure health literacy. **Setting:** The Howard University Provider Network consists of 25 primary care practices located in the Washington DC Metropolitan area. **Patients or Other Participants:** All adults, 50 years of age are approached, given written consent and the three assessments are administered while each patient is waiting to see their physician. **Outcome Measures:** 1) CLOX 1 score, 2) CLOX 2 score, 3) REALM score; and 4) self reported medication adherence as the number of medications taken as prescribed. **Results:** With an alpha of 0.05 and a moderate interclass correlation in the individual member practices of 0.1, we will need to survey 20 patients from each of the 25 practices (total study N=340) to have at least 80% power to detect a 20% difference in the % medication adherence score. **Conclusions:** Our methodology will provide an understanding of the contribution that cognitive impairment and low health literacy has on medication adherence in urban minorities.

PS101-The Experiences of Caregivers of Patients With Alzheimer's Disease or a Related Dementia When Considering Accessing Formal Community Services

Brown, Judith, University of Western Ontario; Vreugdenhil, Lisa

Context: Often patients with Alzheimer's disease or a related dementia (ADRD) are cared for by informal family caregivers who tend to experience substantial physical and

psychological morbidity due to the demands of their caregiving responsibilities. Previous research studies have shown that caregivers who use formal community services to assist with their responsibilities experience increased quality of life. Research also indicate caregivers tend to utilize community services late in the caregiving experience. There is little qualitative research about the experience of caregivers when considering using community services. It is useful for primary health care clinicians to understand caregivers' experiences in order to provide family centered care and encourage health promoting interventions. **Objective:** To describe the experiences of caregivers of patients with ADRD when considering accessing formal community services. Secondary objectives include identifying service gaps, barriers and facilitators. **Design:** Qualitative in-depth semi-structured interviews using an interpretive, iterative approach continuing until saturation is achieved. **Setting:** Primary health care teaching center in London, Ontario, Canada. **Participants:** 10 caregivers were purposefully selected (8 female, 2 male). Inclusion criteria included caregivers who had provided care for at least six months to a patient with ADRD. Age range was 44-78 and relationship to patient were spouse, child, and volunteer caregiver. **Results:** Themes emerged including the disease process, instrumental caregiving tasks, emotional caregiving tasks, loss, and service system experience. Gaps, barriers, and facilitators were identified. Notably, participants described the role of the family physician valuing the family physician-patient relationship and continuity. They also described concerns about the driving habits of care recipients. **Conclusions:** It is important for primary care clinicians to understand caregivers' experiences when accessing services, including gaps, benefits and barriers. Also, the role of the family physician is described in detail from the perspective of the caregivers. This knowledge contributes to patient and caregiver-centered care.

PS102-Feelings of Guilt Post Myocardial Infarction: The Impact of Past Lifestyle Choices

MacNeil-Covin, Lisa, Queen's University; Sylvester, Mike; Godwin, Marshall

Context: A quantitative and qualitative study exploring whether patients have feelings of guilt post myocardial infarction in an effort to help direct counseling and ease suffering post MI. Guilt is healthy when it governs behavior and facilitates social interaction, but when it is excessive it may contribute to anxiety and depression. **Objective:** The main objective is to determine whether there are feelings of guilt post MI, and compare guilt in patients post MI and patients at high MI risk. What is the cause of guilt, if present and how and why does it differ between high risk and post MI groups. **Design:** A questionnaire based study supplemented by focus groups. **Participants:** Post first MI group and high risk factor group as identified and randomly selected by participating family physicians. **Outcome Measures:** Scores on Guilt Inventory Scale and Beck Depression Scale. Quantitative analysis of focus group data. **Results:** It is anticipated that the

post MI group will suffer significantly more guilt than the risk factor group as a result of life style choices, age, and sex. **Conclusions:** This preliminary study will show if guilt is elevated post MI, and if there are specific causes of the guilt, in order to facilitate counseling post MI and avoid the negative consequences of excessive or suppressed feelings of guilt.

PS103-Health Psychology and Family Medicine: Partners in Health

Morton, Kelly, Loma Linda University; Testerman, John; Yu, Irene

Context: Mental health services are an essential component of a comprehensive and cost-efficient primary care system. As 75% of presenting problems have a psychosocial or behavioral component, patient-centered primary care must address biological, cognitive, affective, and sociocultural aspects of health. **Intervention:** A health psychology liaison with a clinical psychology doctoral program was developed. Psychology doctoral students provided no-fee psychotherapy for physician-referred patients in family medicine clinics while working in close collaboration with the physicians. The clinic incurred a minimal cost for the students' supervision. **Objective:** To evaluate and describe the psychology service as well as determine the clinic population's need for services: (1) determine if psychotherapy patients are demographically similar to the clinic population, (2) determine the psychological needs of the clinic population, and, (3) determine whether emotional distress decreases post-psychotherapy. **Patients and Design:** A random sample of 399 patients was assessed on satisfaction; 34 (9.7%) were seen by health psychologists in the past year. **Setting:** Faculty and residency family medicine clinics in an academic medical center. **Outcome Measures and Results:** The patients seen for psychotherapy did not differ from those not seen on age, ethnicity, gender, having a regular physician, or clinic type (faculty vs. residency). Psychotherapy patients had more emotional distress, poorer physical health ratings and rated overall visit satisfaction and physician's personal manner lower than non-psychotherapy patients. The service significantly improved psychotherapy patients' emotional state (overall; relationships; coping; enjoying life). However, psychotherapy patients desired more assistance with depression, anxiety, weight loss, chronic pain and familial/relationships than non-psychotherapy patients; the clinic population sampled also indicated a significant need for assistance with weight loss (17.3%), exercise (8.2%), depression (7.6%) and anxiety (7.6%). **Conclusion:** Family medicine patients have a significant need for psychological and behavioral change services that can be addressed by psychology graduate students embedded in primary care clinics.

PS104-Prayer for Health and Healthcare Utilization: Results from the National Health Interview Survey

Wilkinson, Joanne, Boston University School of Medicine; Saper, Robert; Rosen, Amy; Culpepper, Larry

Context: Numerous studies have linked religion and health, but the exact nature of the association is not well understood. This study examines the health behavior of US adults who pray for their health. **Objective:** To compare a large sample of US adults who have and have not prayed for their health in the past year on two preventive health measures. **Design:** Cross-sectional secondary data analysis of the 2002 National Health Interview Survey. The statistical design includes multiple bivariate analyses and logistic regression models. **Setting:** Community, home-based, in-person interviews, self-reported data including supplementary questions about complementary/alternative medicine. **Subjects:** 30,144 adults (18 and over) with deliberate oversampling of Hispanic and African-American subjects. The sample is diverse and nationally representative. **Outcome Measures:** Independent variable – prayer for health in the past year. Dependent variables – primary care physician visit in the past year and flu shot in the past year, adjusted for indication (age >65, diabetes, lung disease/COPD/asthma). **Results:** 45% of the sample prayed for their health in the past year. After adjusting for demographic (gender, race, region, age, education, marital status) and health (illness burden, alcohol use, smoking) covariates, prayer for health was associated with increased likelihood of PCP visit (OR=1.34, 95%CI 1.24-1.45) and flu shot (OR=1.28, 95% CI 1.10-1.38) within the past year. **Conclusions:** Prayer for health was associated with modestly increased likelihood of preventive care. This relationship adds to the literature linking religion and prayer with health outcomes.

PS105-A Systematic Review of Integrated Primary Care in the United States

Smucny, John, SUNY Upstate; Epling, John

Context: The integration of mental health services into primary care has been advocated as a means of improving the care provided to patients presenting to primary care clinicians, particularly regarding mental health interventions. It is believed that such integration is superior to the traditional practice of primary care clinicians' providing mental health care on their own and/or referring patients in need to external mental health providers. Because most patients with mental health conditions are currently cared for solely by primary care clinicians, an integrated model has the capability of dramatically altering the context in which care is provided in the United States. Integrated models have been developed in various settings, but to date no systematic review has been conducted regarding their effectiveness across the entire spectrum of primary care. **Objective:** The primary objective is to determine the effectiveness of integrated primary care compared with usual care. A secondary objective is to compare the relative effectiveness of different models of integrated primary care. **Design:** Systematic review of

controlled trials. Databases will include MEDLINE, Psycinfo, CINAHL, and CENTRAL. Two authors will independently identify, appraise, and extract data from included studies. A meta-analysis will be conducted if studies are sufficiently homogeneous. If not, a narrative systematic review will be conducted. Setting: Any setting within the United States. Patients: Patients presenting to primary care offices with any complaint. Although it is anticipated that most studies will be limited to patients with mental health conditions, this will not be an inclusion criterion. Intervention: Any model of integrated primary care vs. usual care or vs. an alternative model of integrated primary care. Outcome Measures: The main outcome measure will be improvement in the clinical condition under study. Secondary outcomes include patient and provider satisfaction and cost. Results and Conclusions: To be presented.

PS106-Effect of Racial Concordance on Advice to Patients

Boatright, Amy, Medical College of Georgia; Wagner, Peggy; Lambert, Jerry; Kenrick, Jennifer; Gillies, Ralph
Context: Physician/patient racial concordance appears to positively influence patient satisfaction. Objective: To investigate how racial concordance effects physician advice about health promotion/prevention topics, as reported by patients. Design: As part of a study of the relationship between physician activity levels and activity advice to patients, we administered a patient exit survey. Setting: Five HamesNet PBRN Family medicine sites. Patients: Convenience sample of adult patients (n=276; 55% female; 64% White, 33% Black; mean age=52), seen by 13 physicians (85% male; 69% White, 15% Asian, 15% Black). Intervention/ Instrument: Fourteen-item patient survey (4 demographic questions, 10 questions asking if topics were addressed during visit) administered at end of office visit over 4-week period. Outcome Measures: Frequency of topics discussed, analyzed by patient race (White or Minority) and then by racial concordance for two largest groups (White and Black). Results: Comparing physician interactions with White patients to physician interactions with Minority patients, we found significant differences in percentages of patients reporting their physician spoke to them about a) “Being physically active” (P=.003; White=59.6% yes, Minority=39.8% yes), b) “Discussing future screenings” (P=.029; White=53.8% yes, Minority=39.2% yes), and c) “Making a follow up appointment” (P=.002; White=79.6% yes, Minority=92.8% yes). “Adhering to your medication,” approached significance (P=.083; White=63.7% yes, Minority=52.1% yes). Comparison of Black and White concordant and discordant interactions revealed significance on “Making a follow-up appointment” (P=.047; concordance=76.3% yes, discordant=90.4% yes). Conclusions: On a positive note, 7 out of 10 topics were reported by Minority and White patients as being addressed by their physicians in a fairly

equivalent manner. Of the 3 topics that differed by patient race, two are very important health promotion/disease prevention items (physical activity and screenings). Physicians are reminded to address health promotion/prevention topics with all patients.

PS107-Behavioral Recommendations: Your Patients Are Listening

Wagner, Peggy, Medical College of Georgia; Boatright, Amy; Lambert, Jerry; Kenrick, Jennifer; Gillies, Ralph

Context: Primary care physicians have frequent opportunities to discuss activity level and other health promotion behaviors with patients, important in light of rising obesity rates.

Objective: 1) To determine if giving physicians pedometers raises awareness about their own activity level and increases frequency of discussion about activity with patients. 2) To obtain patient survey data on frequency of physician/patient interaction on behavioral topics. Design: 1) Randomized, controlled intervention. 2) Pre-post physician survey. 3) Patient exit survey. Setting: Five HamesNet PBRN Family

medicine sites. Patients or Other Participants: 13 physicians (85% male; 69% White, 15% Asian, 15% Black).

Convenience sample of 276 adult patients after office visit (55% female; 64% White, 33 % Black; mean age=52).

Intervention/Instrument: Physician survey of activity level pre-post and physicians’ estimated steps over 2 weeks.

Intervention physicians logged actual steps over 2 weeks with pedometers. Patient survey 2 weeks prior to physician intervention and 2 weeks post physician intervention.

Outcome Measures: Physician activity level and patient-reported frequency of physician discussion of patient behaviors.

Results: Intervention physicians underestimated steps (n=5; mean estimated steps=6950; mean actual steps=8471; P=.008). Control and intervention physicians did not differ on estimated steps (n=10; mean estimated steps of control group=7889; mean estimated steps of experimental group=6950; P=.068), and physician activity level did not change pre-post (n=11; P=.531). Pre-post patient surveys were combined for analysis (n=276). “Being physically active” was addressed in 52.8% of encounters. Patients reported physicians addressing other topics in 14.8% (“Limiting sun exposure”) to 82.8% (“Making a follow-up appointment”) of encounters. Conclusions: Physician knowledge of actual daily steps taken did not increase physician activity levels, nor did it increase frequency of talking to patients about activity level. The fact that patients recall that physicians are addressing behavioral/prevention issues reinforces the importance of physician recommendations in these areas.

PS108-Can Changing How Mom Eats Prevent Obesity in Toddlers?: Report on The Pilot Study and Baseline Data Results

Schwirian, Pat , Ohio State University; Groner, Judith; French, Gina; Murray-Johnson, Lisa; Skybo, Theresa; Nicholson, Lisa; Cunningham, Anna

Context: Overweight among children—particularly low-income children, has been increasing at an alarming rate. Within Columbus, Ohio, 62% of the people in Franklin County are overweight, with higher rates in the lower income areas served by the Children’s Hospital Primary Care Network (PCN). Disorganized eating habits are a primary contributor to childhood overweight. **Objective:** To establish focused eating behaviors with moms over 18 months using Bright Futures, Bright Futures Enhanced, or Focused eating protocols during well-child visits. **Co-variables:** sweetened beverages, nutritional intake; TV watching, snacking, and meal planning among others. **Design:** A three-group interventional study assessing implementation of nutritional anticipatory guidance interventions aimed at “new” moms with time series measures at baseline, 6 months, 1 year and 15 months. **Setting:** Three of eleven “Close-to-Home” clinics in Children’s PCN. **Participants:** Moms of infants less than 3 months of age with a family history of Diabetes or Heart disease. Infants younger than 36 weeks gestation or diagnosed with a metabolic disorder were excluded. On average, pilot respondents were: African-American (88%); received Medicaid (84%); had a high school education (76%); and were overweight or obese (80%). **Intervention:** Pilot moms completed the nutritional questionnaire before their infant’s well-baby examination. In the main study, moms will be given that questionnaire, receive information during the well-baby examination, receive take-home information, and be provided with feedback via exit interview. **Outcome Measures:** Baseline measures include: Meal Planning, Eating Behavior Patterns Questionnaire, Snacking Index, Emotional Eating, Mom’s BMI, Infant height/weight, Daily Nutritional Intake, Depression Scale (CES-D 10), Behavioral Risk Factor Surveillance System Survey (BRFSS), and Lifestyle Survey. **Results:** Pilot data indicated: 1) moms lacked adequate nutritional behavior patterns: eg, most snacked while watching television (90%), and 35% skipped meals; 2) Eating behaviors were not inherently linked to post-partum depression or meal planning skills.

PS109-Presence of Depression in Patients Who Present With Headache

Marlow, Robert, Scottsdale Healthcare; Kegowicz, Cynthia; Starkey, Kimberly

Context: Headache is a common reason for outpatients to seek medical care. Patients with pain syndromes, especially chronic pain syndromes, have a significant prevalence of depression. Therefore, outpatients who present with a complaint of headache to primary care physicians may well

have a significant prevalence of depression. **Objective:** To determine whether adults who present to a primary care office with a complaint of headache have a higher prevalence of depression than adults presenting with other complaints. **Design:** Case control. **Setting:** Ambulatory care (community residency family medicine center). **Patients:** Adult outpatients presenting with a complaint of headache were matched to adult patients of comparable age and gender presenting with non-headache complaints. Patients were at least 18 years of age, English speaking, and able to reliably complete a simple written questionnaire. **Instrument:** All participants completed the PRIME-MD Patient Health Questionnaire (PHQ-9). The instrument gives information about severity as well as diagnostic criteria for depression. **Outcome Measure:** Presence of symptoms of depression on the PHQ-9. **Results:** A total of 200 patients entered this study, 100 in the headache group and 100 in the non-headache group. The mean age of participants in the study was 43.8 years with a range of 18 to 87 years. Females constituted 84 percent of the participants. Those patients who presented with headache had a 63 percent prevalence of at least mild depression compared to a 29 percent prevalence in the non-headache patients. **Conclusions:** Almost two-thirds of adult patients who present to a primary care office with a complaint of headache have at least a mild depression as compared to less than one-third of patients presenting with a non-headache complaint. Given such a high prevalence of depression in these patients, primary care physicians should screen all adult patients who present with headache for depression.

PS110-Media Influence on Family Medicine Office Visits in a Large Metropolitan Community

Kalcich, Damon; Shelton, Trent; Stadheim, Chad; Cooper, Kimbal; Middleton, Donald; Stadheim, Chad, Midwestern University

Context: Media influence on the general public correlating with an increase in family medicine office visits has not been well established in the literature. With the rising costs of healthcare in the US, analysis of the reasons patients seek medical care is of primary importance in evaluating healthcare costs and projecting future healthcare expenditures. **Objective:** Our study attempted to explain the influence that media coverage (ie television, radio, newspaper, magazine, internet, other) had on the decision of a patient to seek care from their family physician. **Design:** Upon arrival to the clinic, a voluntary one-page survey was given to the patient or caregiver. All subjects were sampled over a period from September 2005 to January 2006. **Setting:** University based family medicine clinic in Glendale, Arizona. **Patients:** All patients at Family Medicine Clinic. **Outcome Measures:** Thirty patients (8.8%) responded positive to remembering a media report regarding their condition. **Results:** 340 survey questionnaires were completed, 331 were used in the final analysis. Patient ages ranged from birth to 70+. Out of the 331 surveyed, 30 (20 males, 10 females) responded positive to remembering a media report regarding their condition, prior to

seeking care from their family practitioner. This corresponds to a 95% confidence interval between 6% - 12% with a mean of 9%. Of the 30 positives, 12 reported that the media influenced their visit directly. The confidence interval is between 22.5% - 57.5% with a mean of 40%.

Conclusions: Our findings suggest that the media influence on the general population prompts a significant number of individuals to visit their primary care physicians.

PS111-The Impact of Hurricane Katrina on Levels of Depression and Anxiety

Collings, Linda, East Jefferson General Hosp; Magonet, Gordon

Context: As doctors at a family medicine clinic in an area directly hit by Hurricane Katrina, it has proven difficult to reliably predict which patients are most in need of psychological intervention. It is unclear whether a clear correlation exists between level of personal disruption by Katrina and levels of depression and anxiety. Some individuals who were most dramatically affected have presented without anxiety or depressive symptoms; others who emerged relatively unscathed by the hurricane are exhibiting clinical levels of both. **Objective:** In order to determine how to identify patients most at risk, and to help other health care professionals who may face treating patients in the wake of a natural disaster, this study is aims to explore the relationship between level of direct impact from Katrina, and levels of depression and anxiety. **Design:** Correlational study. **Setting:** Community Family Medicine Clinic. **Patients or Other Participants:** Two hundred adult patients of the East Jefferson Family Medicine Center are being recruited for the study. **Participants** must have been residents of the Katrina-affected area when Katrina hit. **Intervention/Instrument:** Patients are administered the Zung Depression Scale, the Zung Anxiety Scale, and a questionnaire assessing demographic information and areas of patients' lives affected by Katrina (eg, home, job, children's schooling, etc.). **Outcome Measures:** Spearman correlation coefficients will be computed to assess the relationship between level of direct impact from Hurricane Katrina and levels of depression and anxiety. Further analyses will focus on which areas of disruption correlate most reliably with development of depressive and anxious symptomatology (eg, loss of personal property, job etc.) **Results:** Individuals with the longest and most significant levels of disruption from Hurricane Katrina are expected to have the highest levels of depression and anxiety. There is no prediction regarding which areas of disruption will significantly correlate with depression and anxiety.

PS112-Identification and Management of Psychiatric Disorders Among Children and Adolescents by Family Physicians

Wen, Frances, University of Oklahoma, Tulsa; Romasanta, Tara; Henley, Charles

Context: Primary care physicians are significant providers of psychiatric care across the age span of patients. While there is a growing literature on the prevalence, identification, and treatment of psychiatric disorders in adults in primary care, the occurrence and management of psychiatric disorders in children and adolescents is less well understood, particularly within family medicine. **Objective:** The aim of this study was to examine family physicians' diagnosis and management of common psychiatric disorders in children and adolescents. **Design:** A retrospective chart review of electronic medical records (EMRs) was conducted. **Setting:** The study took place at a university-based family medicine clinic. **Patients:** 4,662 patients between the ages of 4 and 17 years were seen from November 2003 to May 2005. **Outcome Measures:** Age, gender, race, psychiatric diagnoses, medications, and referrals made were queried from the EMRs. **Results:** A psychiatric diagnosis was documented for 12.4% (576) of patients seen. The mean age of the diagnosed patients was 13.8 years (SD=1.38); 65.5% were males and 34.5% were females. Attention-Deficit/Hyperactivity Disorder (ADHD) was most commonly diagnosed at 7.7%, with depressive disorders next most commonly diagnosed (1.5%). Medication was given to 83.9% of patients with ADHD; 7.7% received referrals for additional evaluation and treatment. Patients with depressive disorders received medication 76.4% of the time; 33.3% received referrals for additional evaluation and treatment. **Conclusion:** The rates of ADHD and depression based on diagnostic data in a family medicine setting are congruent with prevalence rates reported in other primary care office settings and community-based settings. Medication management was the treatment of choice for patients. Referrals for additional care were made for one-third of patients with depression, but infrequently for those with ADHD.

PS113-Duloxetine in Practice-based Clinical Settings: Results from Lilly's Emotional and Physical Symptoms of Depression Study (LEAPS)

Wohlreich, Madelaine, Eli Lilly and Company; Wiltse, Curtis; Desaiah, Durisala; Robinson, Michael; Greist, John

Context: The results of placebo-controlled, double-blind, randomized clinical trials have shown that duloxetine is effective and safe in patients with major depressive disorder (MDD). However, patients in these trials may not be representative of patients in actual clinical practice. **Objective:** This trial was conducted to better assess the effectiveness and safety of duloxetine in diverse populations of outpatients with MDD. **Design:** This was a phase 4, open-label study. **Settings:** Practice-based primary care or psychiatric clinical settings. **Patients:** Outpatients with MDD and ? 18 years of age with sufficient understanding to communicate were included. Patients with current substance dependence or with unstable

medical or psychiatric illness were excluded. Intervention: Duloxetine 60 mg/day, given orally once a day for 7 weeks. Outcome Measures: Primary outcome measures were 1) physician-rated CGI-S, 2) patient-rated SSI 28-Item Average, and 3) patient-rated QIDS-SR16. Secondary efficacy measures were the CGI-S Physical and PGI-Improvement, Emotional and Physical scales. Quality of life was assessed by the Q-LES-Q-SF; Disability was assessed by the SDS. Safety assessment consisted of evaluation of adverse events (AEs), discontinuations due to AEs, and vital signs. Results: Of 3543 outpatients enrolled in the study, 3431 received at least 1 dose of duloxetine. Most patients were Caucasian (90.80%) and female (75.43%); Median age was 48 years. 59.55% of patients were seen in primary care and 40.45% in psychiatric care settings. Duloxetine significantly ($P<.001$) improved all efficacy measures regardless of origin, gender, age, or patient care setting. The mean changes from baseline to endpoint in Caucasian, Hispanic, and African patients, respectively, were -1.43, -1.45, and -1.36 for CGI-S; -4.66, -5.56, and -4.63 for QIDS-SR16; and -0.25, -0.49, and -0.28 for SSI 28-Item Average. Conclusion: Duloxetine 60 mg QD in this phase 4 open-label study was effective, well tolerated, and safe regardless of ethnicity, age, gender, or practice setting.

CANCER RESEARCH (PS114-PS122)

PS114-Cancer Screening Adherence Through Technology-enhanced Shared Decision Making (CSATS)

Jimbo, Masahito, University of Michigan; Ruffin, Mack; Nease, Donald; Fetters, Michael; Saunders, Edward; Strecher, Vic

Context: Physician and patient reminder systems modestly increase CRC screening. Decision aids and tailored behavioral interventions have had variable success, but generally have not been delivered by the patient's primary care physician (PCP), not capitalizing on the evidence that physician recommendation changes patient behavior. Objective: To develop and test the feasibility of Cancer Screening Adherence through Technology-enhanced Shared Decision Making (CSATS), a behavioral intervention model to improve CRC screening that links a computer prompt/reminder system, a behavioral intervention that combines decision aid and risk assessment, and a physician recommendation to enhance Shared Decision Making (SDM) between the patient and the physician. Design: First, CRC risk assessment and screening preference tools will be incorporated into Colorectal Web, a web-based decision aid. Second, Colorectal Web will be linked to ClinfoTracker, a computerized prompt/reminder system already incorporated into the study practices, to generate a tailored patient preference/risk prompt to physicians. Third, the feasibility of using CSATS in PCP practices will be pilot-tested. Setting: Two university-affiliated family medicine practices. Patients: Twenty patients aged 50 to 64 years. Intervention: Before the planned health maintenance visit (HNV),

consenting patients identified by ClinfoTracker as due for CRC screening will securely log in to Colorectal Web and complete interactive surveys on their CRC risk and screening preference. When the patients arrive at the practice, CRC screening reminder and risk/preference survey results will be made available to the physicians through ClinfoTracker, who will use this information to facilitate CRC screening discussion. Main and Secondary Outcome Measures: Descriptive process outcomes, including the utility of Colorectal Web, the effect of CSATS on the workflow of PCP practices and the process of SDM regarding CRC screening, and actual CRC screening rate will be evaluated through both quantitative and qualitative data obtained from tracking by ClinfoTracker, HNV audiotapes, and patient and physician questionnaires.

PS115-Perspectives of Japanese Men and Women on Cancer Screening

Jimbo, Masahito, University of Michigan; Fetters, Michael; Motohara, Satoko; Asei, Shoko; Yeo, SeonAe

Context: Cancer screening rate in Japan is much lower than in other developed countries. It is not clear what behavioral and sociocultural factors lead to the lower cancer screening rate among the Japanese. In particular, no qualitative studies have been done to address their experiences, knowledge, attitudes, beliefs and values about cancer screening. Objective: To understand Japanese adults' experiences, knowledge, attitudes, beliefs and values regarding cancer screening and to generate a theoretical model from the developed themes. Design: A qualitative study utilizing individual in-depth interviews. Setting: University-affiliated practice specializing in the care of the Japanese living in southeastern Michigan, most of who are here on a temporary basis. Patients: Twenty each of Japanese men and women who are patients of the practice. Instrument: Semi-structured in-depth interview conducted in Japanese by a native-speaking study team member knowledgeable in interview methodology. The interview will cover the participants' past experiences, knowledge, attitudes, beliefs, and values regarding cancer screening. The effect of moving to the United States on these factors will also be addressed. The specific cancers covered will be the cancers of colon and stomach for men and the cancers of breast, cervix, colon and stomach for women. Outcome Measures: Iterative analysis of the interviews by code and retrieval method. From the theme data, theoretical models will be generated for (a) men (b) women and (c) all participants that display experience, knowledge, attitudes, beliefs and values toward cancer screening. Anticipated Results: The findings from this study will identify the behavioral, social and cultural factors that facilitate or hinder the cancer-screening behavior among Japanese adults, and lead to the development of a new culturally appropriate model that could be utilized to facilitate cancer screening among the Japanese people.

PS116-Quality of Life in Patients Undergoing Mistletoe and Chemotherapy Treatment

Mohr, Birgit, University Hospital Benjamin Franklin; Anton, Karin; Mitznegg, Peter

Context: An increasing number of patients with malignant disorders are treated additive. Objective: To evaluate the overall benefit of care and treatment, Quality of Life (QoL) assessment becomes mostly important. Do complementary treatments with extracts of mistletoe improve QoL? Design and Setting: The aim of this investigation was to study QoL in patients undergoing treatment of mistletoe (n=18) by General practitioner or exclusive chemotherapy (n= 25) led by Oncologist. The SF-36, an international standardized QoL measuring instrument was used. Patients or Other Participants: 43 treated patients with malignant disorders, aged 36 to 75, suffering from solid tumors were observed at two assessment points (before treatment and eight weeks in course of treatment). Results: After treatment with mistletoe QoL was significantly better in the psychological sum scale index and in dimensions of General Health, Social functioning and Emotional role functioning than before. After treatment with only chemotherapy QoL was the same as before. Patients in therapy with mistletoe compared with patients exclusively treated with chemotherapy, demonstrated in course a significantly better QoL in dimensions of social functioning (P=0.03), General Health (P=0.02), Vitality (P=0.04), and psychological sum scale index (P=0.03). The group of mistletoe therapy patients reaches in body pain, mental health, vitality, physical, and psychological sum scale score the same level as the normal population. Conclusion: During the whole observation period the physical sum scale index was found to be lowered as compared to the normal population. This may reflect the influences of the underlying disease as well as toxic effects of therapy. The additive therapy of mistletoe shows no serious toxic effects and indicates an overall beneficial effect. Notably, the psychological sum scale index showed the same level as the normal population. Additive regimen of therapy by general practitioners, in malignant disorders support patients and complete the additive benefit of QoL. Improvement of QoL always was the main concern of general practice.

PS117-Colorectal Cancer Screening Test Preferences Among Three Racial/Ethnic Groups

Shokar, Navkiran, University of Texas Medical Branch; Shokar, Gurjeet; Weller, Susan

Context: Colorectal cancer (CRC) is the second leading cause of cancer deaths in the US. Screening is widely recommended, but remains underutilized. Currently, four tests are recommended for screening in five combinations, and this makes discussions with patients complex and challenging. An enhanced understanding of test preferences among diverse groups will allow physicians to better target their discussions with patients. Objective: To describe test preferences for CRC screening among three racial/ethnic

groups and to determine which test characteristics are important for decision making. Design: Cross-sectional study. Participants: African-American, Hispanic, or white subjects aged 50 or above. Setting: University based family medicine clinic. Instrument: Statements of 13 test characteristics (eg accuracy, discomfort, etc.) have been developed specific to each screening test. Full descriptions of each test have also been developed. Baseline socio-demographic measures are included. Procedure: 1). Statements about each characteristic (eg accuracy) are read aloud sequentially for each of the four the tests. Participants then arrange each characteristic in order of importance (eg cost v accuracy) by using a feeling thermometer. 2) Full descriptions of each test are then presented in pairs and participants rank these in order of preference. Outcome Measures: 1) Relative rank for each test characteristic. 2) Test Preferences. Analysis: A non-parametric version of a repeated measure ANOVA and the cultural consensus model will be utilized to identify if there is homogeneity in patterns of preferences across subjects or whether preference patterns are different among subgroups such as racial/ethnic groups. The sample size estimate comes directly from the Spearman-Brown Prophecy Formula. Results: 151 patients recruited (target=180): African-American (n=57) Hispanic (n=34) and white (n=60). Mean age 62 years, males 49%. Conclusion: An enhanced understanding of patient decision making about CRC screening among diverse groups will enable physicians to more effectively encourage their patients to complete screening.

PS119-Receipt of Non-cancer Care Among Colorectal Cancer Patients

Baldwin, Laura-Mae, University of Washington; Cai, Yong; Saver, Barry; Dobie, Sharon; Wang, Ching-Yun

Context: Cancer survivors have identified non-cancer comorbidity as the strongest predictor of quality of life, yet little is known about whether cancer care overshadows care for non-cancer conditions. Primary care providers can help ensure that cancer survivors receive needed non-cancer care. Objective: To examine whether cancer patients in the treatment, post-treatment, and long-term survival care phases receive non-cancer care at the same rate as patients without cancer. Design/Setting: Retrospective cohort study using Surveillance, Epidemiology, and End Results (SEER) program data and 1991-2001 Medicare claims data for colorectal cancer (CRC) patients reported to 11 SEER cancer registries between 1992 and 1999 and their non-cancer counterparts in the 5% Medicare sample. Patients: 71,841 stage 0-III CRC patients and 207,738 non-cancer patients ages 66 and older. Outcome Measures: Receipt of influenza vaccination, mammography, HgbA1c tests (among diabetics), and cataract surgery. Results: CRC diagnosis influenced preventive care receipt and care for diabetes, but not elective surgery. Two years pre-diagnosis, CRC patients (45.4%) had a slightly higher rate of influenza vaccination than controls (43.8%). This difference increased for five years after diagnosis (eg,

year 2 post-diagnosis, 50.8% cancer patients, 46.8% controls). CRC patients (32.4%) had lower rates of mammography than controls (36.2%) before diagnosis, but significantly higher rates than controls for seven years post-diagnosis (eg, year 2 post-diagnosis, 44.5% cancer patients, 30.9% controls). Unlike preventive services, CRC diagnosis was associated with decline in diabetes care relative to controls. Despite comparable hemoglobin A1c testing pre-diagnosis, diabetic CRC patients were less likely than non-cancer patients to receive HgbA1c in the few years after diagnosis (year 2 post-diagnosis: 50.8% cancer patients, 54.3% controls). **Conclusions:** Individuals with a colorectal cancer diagnosis increase attention to preventive services, especially mammography, but decrease use of recommended diabetes care post-diagnosis. This decreased attention to diabetes care may be related to competing medical care demands, physician lack of attention to chronic disease care, fatalism on the part of patients and/or their physicians, and/or patient fatigue with the medical system. Primary care physicians must highlight the importance of non-cancer care receipt to their cancer patients to ensure that all of their health care needs are met.

PS120-Endoscopists' Recommendations on Repeat Colonoscopy: What Primary Care Doctors See

Woessner, Sarah; Krist, Alex; Kerns, J William; Merenstein, Daniel; Jones, Resa; Woessner, Sarah, Virginia Commonwealth University

Context: Although colonoscopy may have the greatest sensitivity for detecting colorectal cancer (CRC) and precancerous polyps, the procedure also has greater risk than other screening methods. Repeat colonoscopy at inappropriately short intervals may expose patients to unnecessary harms with little or no added benefit. This is a key reason for organizations who issue screening guidelines to not recommend colonoscopy above other screening methods. **Objective:** To evaluate the appropriateness of endoscopists' recommendations for repeat colonoscopy, ascertained from correspondences by endoscopist to the primary care clinician, as compared with guidelines issued by the American Gastroenterological Association. **Design:** Retrospective cohort design with medical record abstraction. **Setting:** Six practices located throughout Virginia and Washington, DC: four family medicine residency programs within Virginia Commonwealth University/Ambulatory Care Outcomes Network (ACORN) and two private practices within the Capital Area Primary Care Research Network (CAPRICORN). **Patients:** A total of 1,800 randomly selected men and women (300 per practice) between the ages of 50 and 70 years seen in the participating practices within the past year. Of these patients, those with a record of at least one colonoscopy will be considered in the final sample population. **Instrument:** Patient records are reviewed at each practice site. Information is collected on the patients' risks for CRC, prior CRC screening history, why the most recent colonoscopy was performed,

colonoscopy results, and the endoscopist's recommendation for future follow-up and testing. **Outcome Measures:** The main outcome is whether the endoscopists' recommendations for future testing are consistent with national guidelines. Factors contributing to potential variations in recommendations will also be explored such as geographic location, individual patient risk, and reason for performing the colonoscopy. **Results and Conclusions:** A comparison of endoscopists' recommendations with national guidelines will be presented and the implications of any disparities will be discussed.

PS121-Prompting and Reminding at Encounters for Prevention (PREP): Impact of a Reminder System on Colorectal Cancer Screening in Diverse Practices

Nease, Donald, University of Michigan; Green, Lee; Gorenflo, Daniel; Underwood, Jennifer; Ruffin, Mack

Context: Computerized reminder systems (CRS) have shown promise for improving adherence to preventive services guidelines such as those for colorectal cancer screening. However, prior research has not evaluated the implementation and impact of a generalizable CRS across multiple types and settings of primary care practices. **Objective:** Determine whether a generalizable CRS, ClinfoTracker, can successfully improve rates of screening for colorectal cancer in diverse practice-based research network practices. **Design:** Prospective trial using historical control data from each practice. **Setting:** The Great Lakes Research In Practice Network (GRIN). **Participants:** 12 community-based, primary care practices distributed from Southeast to Upper Peninsula Michigan. **Intervention:** ClinfoTracker was installed and implemented in each practice. ClinfoTracker printed clinician-targeted, visit-based reminders for each patient presenting for care who were not current for colorectal cancer screening according to National Cancer Institute guidelines. ClinfoTracker recorded information on how each reminder was addressed by clinicians, and when screening tests were ordered and/or completed. **Outcome Measures:** Pre- and post-study colorectal cancer screening rates among patients seen in each practice were measured during a 9-month study period. **Results:** Comparing pre- and post-study, 11 out of 12 practices showed increases in their colorectal cancer screening rates, ranging from 6.0 – 59.2% improvement. Repeated measures t-test showed significant improvement in screening rates across all 12 practices, 42.7 – 52.3%, P=0.010. **Conclusions:** Implementing a generalizable CRS, such as ClinfoTracker, in diverse community primary care practices results in significant improvements in colorectal cancer screening rates. Future work will analyze the other quantitative and qualitative data gathered in this trial to develop hypotheses to explain the wide range in improvement among practices. These hypotheses will be used to develop a larger trial focused on implementation and dissemination methods.

PS122-DOVE: Detecting Ovarian Cancer Earlier: A Meta-analysis to Produce a Triage Tool for Symptoms and Signs Suggestive of Ovarian Cancer

Duarte-Franco, Eliane, McGill University; Gilbert, Lucy; Dawes, Martin; Parent, Marie-Elise; Hanley, James; Tremblay, Michel; Roy, Michel; Bessette, Paul; Ghatage, Praful; Krishnamurth, Srinivasan

Context: Ovarian cancer (OC) is the deadliest of all gynecologic malignancies; overall survival is 90% are diagnosed in later stages but for stage 1a it is >95% thus, early detection is crucial. Currently there is no suitable test for population-based screening of asymptomatic women. However some S&S clusters seem to identify earlier cases but previous studies suffer from important flaws and an S&S triage tool has never been validated and tested prospectively. **Objective:** We propose to develop and test an S&S-based triage/prediction tool to improve management of suspected OC cases. This study summarizes the published evidence. **Design:** Meta-analysis using original data and/or data abstracted from articles. **Setting:** Studies identified through search of electronic databases such as PubMed, Cochrane Library; articles bibliographies; use of citation indexes; and "manual" search of relevant journals given a priori selection criteria. **Observations:** Observations are data collected from selected studies. **Intervention/Instrument:** Original data from published studies will be requested to obtain information on individual S&S (and their clusters) that has been previously examined. An abstraction template will be used when such request will be denied; two independent reviewers will abstract the data; disagreements will be solved by consensus after involvement of a 3rd investigator. **Outcome Measures:** Data will be examined for clinical and statistical homogeneity. Where this is demonstrated meta-analysis will be undertaken to produce odds ratios of the presence or absence of recorded S&S likely to predict or exclude OC. From this preliminary algorithms will be developed and a final version of the tool should include a set of S&S that will efficiently and accurately be used to rule in and rule out disease. **Results:** The meta-analysis is currently being undertaken. **Conclusions:** We will identify the individual and/or clusters of S&S that have been found as clinically significant in other populations.

CARDIOLOGY (PS123-PS126)

PS123-The Association of Self Reported "Readiness to Change Stage" and A1c Among Adult Diabetic Type 2 Patients

Islam, Jamal, University of Texas Medical Branch; Olson, Michael; Trevino, Dorothy

Context: The transtheoretical model (TTM), has been used to assess patients' stage of readiness to change behavior. Smokers, alcoholics, and overweight patients in the maintenance stage have shown sustained ability to quit smoking, drinking and lose weight respectively. Behavioral

change is essential to decrease A1c in diabetics. Depression, hostility, and expressed emotion (over involvement and/or critical comments by committed partner) were also explored as potential barriers to achieve the maintenance stage.

Objective: Primary: To determine difference in mean A1c between maintenance stage (MS) versus pre-maintenance stage (PMS) groups. Secondary: To determine difference in mean scores on depression, hostility and EE between the two groups. **Design:** Convenience cross-sectional sample (n=70). **Setting:** University based family medicine clinic. **Patients:** Inclusion criteria; 1) Age 30-80 yrs; 2) in a marital or long-term relationship; 3) Diabetic > one year. **Outcome Measures:** Depression (PHQ-9/BSI), hostility (BSI), and EE (FEICS). **Results:** Thirty-seven were female patients. Sample mean age 56 years. Race: White, Black or African-American, Hispanic and Asian were 40.6, 24.6, 33.3 and 1.3 respectively. Stage of change and A1c: 50.7% of the patients were in the MS-group and had a mean A1C of 6.6 mg/dl (1.3 SD); PMS-group mean was 8.3 mg/dl (1.4 SD); (P<.000). Depression, hostility and EE: PMS-group had higher depression (P=.006) and hostility (P=.017) than MS-group. No significant group differences were found on EE, gender, race or duration of having diabetes. **Conclusion:** Stage of change was significantly associated with A1C, depression and hostility. Potential implication for practice: Interventions to decrease levels of depression and hostility may help shift patients to maintenance stage and improve A1c.

PS124-Peripheral Arterial Disease Screening of an Underserved High Risk Population

Triola, Laura, University of North Florida

Context: Underserved populations with limited access to appropriate health screening and therapeutic interventions often present with increased risks for peripheral arterial disease. The prevalence of peripheral arterial disease has been extensively studied in the elderly population but the prevalence in the high-risk underserved population is unknown. **Objective:** The purpose of the study was to identify the prevalence of peripheral arterial disease in an underserved, high-risk, predominantly African-American population. **Design:** Cross sectional descriptive study. **Setting:** The setting was the medical clinic at a local shelter which is a faith-based, recovery residence for the homeless and needy in Northeast Florida. **Participants:** A non-probability convenience sample of patients at a local shelter was used. Confirmed diagnoses of diabetes, hypertension, hyperlipidemia or history of cigarette/crack cocaine smoking, regardless of age, were the inclusion criteria. **Instruments:** History and physical examination, the San Diego Claudication Questionnaire, and an ankle-brachial index (ABI) was assessed. **Outcome Measures:** Ankle-brachial index is the ratio of the ankle systolic pressure to the brachial systolic pressure. This objective test measures the lower extremity arterial perfusion using a hand-held 5-10 MHz vascular Doppler. **Results:** The mean age of the sample was 46.03. Sample was 70% male and 67.5% African-American (n=40). The prevalence of lower

extremity PAD, indicated by an ABI \geq 0.90 was 22.5% all of whom had a history of crack cocaine use. **Conclusions:** Risk factors in an underserved high risk population identify a significant percentage of individuals with peripheral arterial disease. The importance of this study is the unique view provided professionals of an infrequently studied population since health status analysis of the homeless is complex and rarely reported. National disease prevalence of PAD has been established predominantly through studies with elderly **Participants.** Screening should be targeted to those with diabetes, hypertension, hyperlipidemia, a history of smoking and illicit drug use.

PS125-The Lipid Knowledge Assessment Study

Jimenez, Jose, University of Texas at Tyler

Context: Patients being treated for dyslipidemia historically have a very poor long term adherence to therapy. Deficient fund of knowledge and treatment misconceptions have been postulated to affect patient adherence to therapy. **Objective:** This study aims to determine the level of knowledge and presence of misconceptions about dyslipidemia therapy among patients at an outpatient family medicine clinic.

Design: Descriptive cross-sectional survey.

Setting/Participants: Patients identified as dyslipidemic in a residency family medicine clinic who agreed to participate.

Instrument: Anonymous questionnaire asking demographic questions, length of illness duration and dyslipidemia therapy related questions and common therapy misconceptions using a 5 point Likert scale. Main **Outcome Measures:** Responses to each of the dyslipidemia therapy and dyslipidemia therapy misconception questions were tabulated and Mean and Standard Deviation were determined.

Results: 164 questionnaires were completed during sampling period showing low scores consistent with deficient knowledge and misconceptions present among the clinic patients. **Conclusion:** The fund of knowledge about therapy in dyslipidemic patients is low and there are common therapy misconceptions present in the patients. Determining and addressing the fund of knowledge and focusing on the misconceptions present in our dyslipidemic patients can help improve their awareness of their condition and hopefully improve their long term adherence to therapy.

PS126-Obstacles and Solutions to Implementing Point-of-Care Lipid Testing in a Research Protocol

Parnes, Bennett, University of Colorado; Zittleman, Linda; Quintela, Javan

Context: Point-of-care lab testing in primary care is well-established, such as for urinalyses, pregnancy tests, etc. It may (1) improve efficiency by managing lab **Results** during clinic visits, (2) increase patient safety by eliminating lost results, (3) increase patient satisfaction, and (4) improve outcomes. In investigating these potential benefits, little is known about the barriers to implementing point-of-care research protocols. **Objective:** In an ongoing randomized-controlled trial (randomization at the clinic level), point-of-

care lipid testing is one of two components of the intervention. Describe barriers and solutions to the implementation of the point-of-care technology. **Design:** The aim of the larger study is to decrease cardiovascular risk (blood pressure and lipids) in subjects with type 2 diabetes. The lipid component of the intervention consists of point-of-care lipid testing on all subjects at clinic visits; the results are made available for clinician review during the clinical encounter. Unanticipated obstacles, their course and resolution (if any) will be described. **Setting:** Eight clinics in CaReNet and HPRN, two PBRNs in Colorado. **Patients:** Four clinics with approximately 100 total consented subjects are receiving the intervention. **Results:** Multiple barriers have been identified, including (1) the need to retrain clinic staff due to staff turnover, (2) concern by a hospital-owned clinic over loss of hospital lab business, (3) requirement for excessive verification of the CLIA-waived instrument, (4) requiring the study to pay for the time to perform test, (5) requiring the on-site lab to perform the test instead of Medical Assistants (leading to clinic bottlenecks), and (6) a 12-month delay in approval of the instrument in a large health care system. Thus far, there has been mixed success in overcoming the barriers. **Conclusions:** These identified obstacles and potential solutions may be helpful for other studies that involve point-of-care technologies, including both research and QI projects.

EPIDEMIOLOGY (PS127-PS139)

PS127-A Geographic Information System (GIS) Use in Public Health: Ambulance Pickups for Breathing Problems During a Waste Processing Facility Fire

Hughes, Susan, University of California, San Francisco-Fresno

Context: In January and February 2003, Fresno, California experienced a spontaneous fire at a waste processing facility.

Objective: Assess the impact of this month-long fire on residents' breathing using a geospatial analysis of ambulance response data. **Design:** Observation of natural experiment.

Compare the same time frame for the previous year and subsequent year's ambulance pickup information to the fire year using latitude, longitude, problem, response code, and census tract demographics. **Setting:** General community.

Participants: People requesting emergency ambulance response for breathing problems during study time frame from the only ambulance company serving Fresno County, California. **Outcome Measures:** Rates of ambulance pickup were determined by ambulance zone. Geospatial software will be used to create buffer zones, defined as concentric rings surrounding the fire site, in one kilometer increments. For the five zones and each month of the study period, the number of patients picked up with breathing problems will be determined. In addition, the percentage of these patients who needed immediate treatment with medications will be calculated. **Results:** There was a 10% absolute increase (100% relative increase) in ambulance calls for breathing problems in residents living within the two ambulance zones closest to the

fire location in 2003 when compared with 2002 and 2004. No differences were seen in the zones farther away. Analysis continues for the geospatial buffers and patient treatment. **Conclusions:** GIS can be a useful tool for analyzing temporal and spatial distribution of medical problems in a community.

PS128-Assessment of the Metabolic Syndrome in a Clinical Practice Within an Underserved Community

Meng, Yuan-Xiang, Morehouse; Gibbons, Garry; Strayhorn, Gregory

Context: The metabolic syndrome (MetS) is a clustering of risk factors that greatly increase the risk of cardiovascular disease (CVD) and type 2 diabetes mellitus. People with MetS are three times more likely to have a heart attack or stroke compared with people without the syndrome and twice as likely to die from these CVD events. Therefore, it is imperative to identify those individuals with MetS early and initiate lifestyle interventions and treatment to prevent or delay the development of diabetes and/or cardiovascular disease. **Objective:** 1) to evaluate whether clinicians in the 'real world' routinely establish the necessary record in which the metabolic syndrome (MetS) could be diagnosed, 2) to assess the clinical utility of the current diagnostic criteria for the diagnosis of the MetS in the primary care setting, and 3) to define the prevalence of the MetS in a primary care practice within an urban, underserved, minority community. **Design and Setting:** This study will conduct an EHR review to determine the prevalence of MetS among adult patients in the family medicine clinics before and after an educational intervention for the clinicians. **Participants:** This study will include all adult patients, 18 years of age and older, from family medicine clinics of Morehouse Medical Associate (MMA). **Outcome Measures:** Prevalence rates of MetS based on ATP III criteria, the new definition of MetS from the International Diabetes Federation (IDF), or a clinical practice modification of the ATP III criteria will be calculated. **Results:** The study is in progress.

PS129-Health Care Utilization Patterns Among African-American Women With Systemic Lupus Erythematosus Living in the Inner-city

Tumiel-Berhalter, Laurene, SUNY at Buffalo; Murekeyisoni, Christine; Anderson, Judith

Context: Guidelines for the diagnosis and management of Systemic Lupus Erythematosus (SLE) recommend coordination of care of the multiple providers treating the signs and symptoms associated with SLE. Little is known about the utilization of health care, particularly among African-American patients. **Objective:** To describe health care utilization patterns among African-American women with SLE living in an urban inner city community and to assess differences in these patterns by employment and educational attainment. **Design:** Cross-sectional. **Setting:** Predominately low-income African-American community

defined by two zip codes in Buffalo, New York. **Participants:** 52 African-American women with self-reported doctor-diagnosed SLE who have ever lived in the targeted zip codes and are enrolled in a city-wide lupus and autoimmune registry. **Outcome Measures:** 1) Number of specialists ever seen for SLE, 2) Types of specialists seen for treating signs and symptoms of SLE 3) Differences in distribution due to education level and employment status.

Intervention/Instrument: Face-to-face surveys were conducted that assessed demographics information, diagnosing physician, types of specialists seen for SLE, and regular source of care.

Results: 96.2% of participants reported having a regular source of care and the majority saw a private physician (80.0%). On average, lupus patients saw 3.5 different physicians, with Rheumatologists and Dermatologists seen by 84.6% and 55.8% of the respondents, respectively. Individuals not employed were more likely to have seen a cardiologist than employed participants. Unemployed participants saw on average one provider more than employed participants. There was no difference in utilization by education level.

Conclusions: The findings from this study document the complexity of health care patterns among patients with SLE supporting the need for coordination to best manage care.

PS130-Probing the Boundaries of Primary Care Interventions: Analyzing the Effectiveness of Intimate Partner and Sexual Violence in HIV/AIDS Patients

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Context: Because of the possible impact on a patient's physical-emotional health, intimate partner and sexual violence (IPV/SV) among HIV/AIDS patients is of increasing concern to clinicians. **Objective:** To document the broad social context of an IPV/SV patient's life. To use this description to develop a conceptual framework and a statistical approach to assess the effectiveness of a primary care IPV/SV intervention among HIV/AIDS patients. **Design:** Repeated measures quasi-experimental design with two sequential cohorts of HIV/AIDS patients. **Setting:** Two comprehensive HIV/AIDS treatment centers in Manhattan, New York. **Patients or Other**

Participants: Patients who screen positive on a domestic violence screen. N=84: 58% women; 71% heterosexual; 57% Black (non-Hispanic); 36% Hispanic. **Intervention:** After a positive screen patients were referred to either an on-site or off-site provider. **Outcome Measures:** Homeless, substances use, criminal justice system, psychological problems, family support, and community resources and violence. **Results:** Patient level: 24% homeless; 76% arrested, 54% in jail; 48% alcohol dependence; 43% cocaine dependence, 31% crack dependence; 54% considered suicide, 57% Major Depression, 71% PTSD. Family Level: 45% think expectation too high, 35% feel blamed for family problems, 64% differ from their family views regarding sexuality. Neighborhood Level: Serious neighborhood issues -drug dealing (57%), groups of kids hanging out (50%), organized gangs (30%), gunshots (36%). Future research will examine how these factors

contribute to IPV/SV risk. Conclusions: We argue that primary care interventions that deal with problems that “leak” into non-health factors or other delivery systems, and that ignore this broader context—eg family, community—may misestimate an intervention’s effectiveness. We suggest that primary care IPV/SV interventions require a social epidemiological (ecological) theory, and a statistical approach, such as multilevel analysis, to (1) assess how these “non-health” factors influence IPV/SV, and (2) to develop more precise estimates of the effectiveness of primary care interventions.

PS131-Parkinson's Disease and Markers of Traffic-derived and Environmental Manganese Air Pollution in Two Canadian Cities

Finkelstein, Murray, University of Toronto; Jerrett, Michael

Context: Manganese is an essential trace element, but may be toxic in amounts beyond dietary requirements. Excessive Mn exposure is associated with a Parkinsonian syndrome. In Canada, MMT, an organic derivative of Mn has been used in gasoline as an antiknock agent for 25 years. Objective: To search for an association between exposure to vehicular emissions and PD. Design: This is a case-control study of Parkinson’s Disease (PD) in Hamilton and Toronto, Ontario. Physicians diagnoses of PD and prescriptions for L-Dopa were ascertained by linkage to governmental databases. Environmental measurements of Mn were provided by the Ministry of Environment and measurements of NO₂, a surrogate for vehicle emissions, were made by the investigators. Setting: The study is nested in a cohort study of 110,000 subjects from 5 family medicine and 2 respiratory disease clinics. Outcome Measures: Odds Ratios for PD in relation to residential proximity to major roads and interpolated values of NO₂ and Mn. Results: For subjects residing in Toronto, we found no association between PD and residence location close to traffic or interpolated levels of NO₂ at the residence location. The overall Odds Ratios were close to 1.0 for both exposure markers and there was no evidence of heterogeneity among the three Toronto clinics. In Hamilton, there was no association between PD and residence near traffic, but the ORs for PD in relation to levels of NO₂ at the residence location were elevated and of borderline statistical significance, OR: 1.034 (0.99 - 1.08). For Mn, the OR was (non-significantly) elevated, OR: 1.14 (0.88 - 1.48), but there was substantial heterogeneity (P= 0.03), as yet unexplained, between the clinics. Conclusions: We found no evidence for an association between PD and traffic emissions in Toronto. There was no association between residence close to traffic and PD in Hamilton, but the suggestion of an association between PD and levels of NO₂ in that city. This latter association might be reflective of occupational exposures or an effect of industrial emissions of Mn. Further investigation is warranted.

PS132-Does it Make a Difference Where You Get Your Primary Medical Care?

Schultz, Susan, Institute for Clinical Evaluative Sciences; Jaakkimainen, Liisa

Context: The province of Ontario, Canada has a publicly-funded, universal health care system that covers hospital and most physician services. As part of its primary care reform emphasis, the government is currently encouraging family physicians to move from solo private practice to one of the new group practices that it is facilitating across the province. Underlying this strategy is an assumption that group practice is different and probably ‘better’ than solo practice. Objective: The purpose of the study is to determine whether and how primary care service delivery varies across practice venues (ie solo vs. various types of group practice). Design: The study is an analysis of secondary administrative data for the period April 1, 2002 to March 31, 2003. Data sources include the Ontario Health Insurance Plan (OHIP) database of physician billings, the Registered Persons Database, which includes demographic information on everyone eligible for OHIP coverage and the Ontario Physician Human Resources Data Center (OPHRDC) database of physician practice location, specialty and demographics. Information from all sources is linkable using encrypted identifiers for patients and physicians. Setting and Participants: Approximately 12 million individuals were eligible for OHIP in 2002/03. During the same period, there were approximately 10,000 general practitioners/family physicians in active practice. Outcome Measures: To answer the question posed in the title, the study will compare physician practices in several ways: demographics of the patient population (ie who are they seeing?), utilization rates for services such as preventive care and annual health exams, and possibly patient health outcome measures such as mortality, emergency department utilization, and hospital admissions. Results: None yet. Conclusions: The results of this study will be useful for both primary care providers and planners/policy-makers.

PS133-Family Physicians' Expectations Regarding Their Involvement in the Follow-up of Cancer Patients: Preliminary Results

Aubin, Michele, Laval University; Vezina, Lucie; Verreault, Rene; Leduc, Yvan; Fillion, Lise; Bergeron, Renald; Reinharz, Daniel; Lehmann, François; Hudon, Eveline; Castel, Josette; Misson, Lucie

Context: The Quebec Cancer Program recommends the development of specialized interdisciplinary teams in oncology linked with family physicians, to ensure continuity of care. Before implementing this structure of care, it is important to take into consideration the actual and expected role of the different professionals involved. Objective: To describe family physicians’ expectations regarding their role in the follow-up of patients with lung cancer at different phases of their disease. Design: Postal survey. Participants: 73 community-based family physicians from Quebec City, Montreal, and Rimouski who have, in their clientele, one or

more patients recently diagnosed with lung cancer. **Outcome Measures:** Actual and desired involvement of family physicians at the different phases of cancer regarding coordination of care, patient's emotional support, information transmission and relief of symptoms. **Results:** Family physicians report they are less frequently involved during the active treatment phase compared to the diagnostic ($P<0.0001$) and the advanced/terminal ($P=0.0009$) phases. At these last two phases, more than two thirds of family physicians consider they are active in all aspects of cancer care, but this proportion drops to 50% for information transmission and to 21.9% for coordination of care, during the treatment phase when patients are seeing the oncology team. Most family physicians would like to be more involved during that phase, mainly in patients' emotional support and symptom relief. At all phases of cancer care, a smaller proportion of family physicians wish to play a role in the coordination of care than in other aspects of cancer care. **Conclusions:** Involved in the diagnostic and terminal phases of cancer, family physicians wish to increase their role during the treatment phase of care managed by the oncology team, but they do not necessarily want to be responsible of the coordination of care.

PS134-Chronic Illness Self-management and Multimorbidity in a Primary Care Unit

Soubhi, Hassan, Universite de Sherbrooke; Fortin, Martin; Hudon, Catherine

Context: What multimorbid patients do to manage their illness is important for both research and primary care practice. However, most chronic care research is single disease oriented and little attention is given to the linkages between Chronic Illness Self-Management (CISM) and multimorbidity. **Objective:** This study examined the differences in CISM across groupings of chronically ill patients and helped identify the CISM variables that differentiated the groups. **Design:** Cross-sectional. **Setting:** Family medicine unit in Saguenay, Quebec. **Participants:** The sample comprised 234 adult chronically ill patients from a random sample of consecutive users. **Instruments:** CISM included behavioral and illness status dimensions. Behavioral variables included the number of visits to the specialist, the generalist, and other health professionals. Illness status variables included 8 dimensions from the SF-36 scales including Physical Activity, Physical Limitations, Bodily Pain, Perceived Health, Vitality, Mental Health, Social Life, and Psychological Limitations. The Cumulative Illness Rating Scale (CIRS) was used to classify patients into four categories of multimorbidity, the higher the CIRS score the higher the category and the more complex the multimorbidity. MANCOVA on the CISM variables were conducted with age, sex, and socio-economic status as covariates. **Results:** The multivariate analyses revealed significant main effects for the CIRS groupings of multimorbidity. The univariate analyses revealed grouping-specific patterns of CISM variables with no significant

differences on Social Life and Mental Health between the third and fourth group which had the worst scores on these variables. There were no differences in the number of consultations to the specialist among the groups, but significantly higher number of consultations to the generalist in the 4th group compared to the other groups. Finally, the third and fourth groups did not differ in the number of consultations to other health professionals. **Conclusions:** This study suggests the usefulness of the groupings of chronically ill patients according to their CIRS scores. The data also indicates variations in the patterns of relationships between the CIRS groupings and the CISM variables.

PS135-Blastomycosis in Indoor Cats: Suburban Chicago, Illinois

Baumgardner, Dennis, University of Wisconsin; Blondin, Nancy; Moore, George; Glickman, Lawrence

Context: Blastomyces dermatitidis is the etiologic agent of Blastomycosis, a potentially life-threatening systemic mycosis of humans and animals. It is acquired from a yet incompletely defined environmental niche. There is controversy regarding the potential for contact with the fungus in or near one's home, particularly in urban areas. **Objective:** To investigate an outbreak of Blastomycosis among five urban, indoor cats. **Design:** Owner interviews, site visits, environmental cultures for B. dermatitidis, GIS analysis, analysis of local weather data. **Setting:** Suburban Chicago, Illinois. **Participants:** Five cats diagnosed at three veterinary clinics March 3-July 13, 2005. **Results:** There were no environmental exposures common to the five cats that lived a median of 300 m from nearest body of water, in homes on a loam soil. Closest and farthest case home sites were 3.4 and 26.1 km respectively. All cats were confined indoors except one cat that averaged 15 minutes/week in his backyard and was exposed to excavation. B. dermatitidis was not isolated from any of 60 environmental samples (soil, debris, potting soil, cat litter). The annualized incidence rate March through July 2005 among 6,761 cats in these practices was 178/100,000, compared to none in the previous four years, and 0.14/100,000 cat visits from a nationwide animal hospital registry. Precipitation January through June 2005 was 9.30 versus period mean of 14.05 +/- 1.69 inches the previous four years ($P=0.01$). **Conclusions:** Circumstantial evidence suggests acquisition of B. dermatitidis from the home site in five cats. Relative drought may have contributed to an apparent outbreak of Blastomycosis in this urban locale.

PS136-The Assessment of the Methodological Quality of Qualitative Meta-syntheses in Current Published Literature

Nair, Kalpana, Center for Evaluation of Medicines; Dolovich, Lisa

Context: Meta-synthesis is a generic term that encapsulates a number of qualitative research synthesis approaches where multiple qualitative studies are integrated and synthesized. Unlike quantitative data syntheses, where well established

procedures and criteria for quality assessment and presentation of Results exist, it is only recently that meta-synthesis researchers have attempted to establish such standards. Objective: This study sought to answer three research questions: 1) what are the primary criteria for assessing the quality of meta-syntheses, 2) how are meta-synthesis quality criteria similar and different from those used to assess single qualitative studies, systematic reviews and meta-analyses, and 3) what is the quality of current meta-syntheses? Design: Critical review of methodological literature related to meta-synthesis and quality assessment of all primary care meta-syntheses published between January 2003 and August 2005. A systematic approach was used to locate studies for this exercise. Results: Four general criteria were defined for assessing the quality of meta-syntheses: 1) clear research question, 2) clear description of data collection & sampling, 3) clear description of analysis, and 4) reflexivity. These criteria were similar to that of single qualitative studies and quantitative reviews. However, reflexivity is not a quality criteria in quantitative reviews and reproducibility is not a criteria used in qualitative meta-syntheses. Twenty-eight meta-syntheses were found. Over 50% were published in nursing journals (n=17). Six studies (21%) utilized a hybrid or non-traditional meta-synthesis approach. Almost all meta-syntheses presented a clear research question, clear description of data collection methods, and clear description of data analysis methods. Only 2 meta-syntheses described how sampling occurred in each study. Overall, reflexivity was not well described. Conclusion: Clear reporting of rationale and steps taken in meta-syntheses is critical for ascertainment of quality. Understanding why methodological decisions are made is as important as knowing that a methodologic step was taken.

PS137-Improved Binomial Confidence Intervals for a Single Proportion

Reed, James, St. Luke's Hospital

Context: The construction of a confidence interval for a binomial parameter is one of the most basic analyses in statistical inference. Despite the known poor performance of the Wald (W) and Wald with continuity correction (WCC) confidence intervals, they continue to dominate in textbooks and in published literature. Objective: To provide a review of alternatives and provide tractable and better methods of constructing binomial confidence intervals for a single proportion. Design: Two standard measures of confidence interval performance are the coverage probability, $C(?|n,?)$ and mean width, $M(?|n,?)$ for the W, WCC, Clopper-Pearson, Blythe-Still, Score, Score with continuity correction, Agresti-Coull, and Borkowf-z methods are compared. Results: Coverage probability plots demonstrate that the W, WCC, and Blythe-Still methods are poor performers as they seldom reach the nominal level. The Clopper-Pearson and Score with continuity correction methods are overly conservative as they generally exceed the nominal level. The Score and Agresti-Coull coverage

methods are nearly nominal for $?? [0,1]$. The Wald and Wald CC methods both behave poorly in terms of zero width intervals and overshoot. The Clopper-Pearson "exact" method is the most conservative. Conclusion: The Clopper-Pearson and the Score methods are better binomial confidence intervals than either W or WCC. Other better alternatives include Wilson's Score with continuity correction, the Agresti-Coull, and the Borkowf-z methods. The Clopper-Pearson is easily programmed as are Wilson's Score, Agresti-Coull method, and the Borkowf SAIFS-z.

PS138-Better Binomial Confidence Intervals for the Difference Between Two Independent Proportions

Reed, James, St. Luke's Hospital

Context: The construction of a confidence interval for the difference between two independent proportions is one of the most basic analyses in statistical inference. The Wald asymptotic methods, with and without a continuity correction have less than nominal coverage probability characteristics but continue to be used in spite of this known poor behavior.

Objective: To review a set of better alternatives to the traditional Wald method for computing the difference between two independent proportions. Design: The coverage probability and mean width functions for equal and unequal sample sizes for the difference between two independent proportions using the Wald (W), Wald with continuity correction (WCC), Newcombe's hybrid score, and the Agresti-Caffo methods are demonstrated. Results: For the equal sample size case, the Wald coverage probability is subnominal overall. The WCC coverage probability always exceeds the nominal level and has interval width larger than W. For the unequal sample size case, W is always subnominal while WCC exceeds the nominal level. Newcombe's hybrid method and the Agresti-Caffo methods have coverage probabilities that are near nominal for either the equal or unequal sample sizes. Conclusion: In the case of differences between two independent proportions the Wald confidence interval behaves poorly with coverage probabilities well below nominal values. Considering the coverage probability criterion, Newcombe's hybrid method and Agresti-Caffo method demonstrate superior coverage properties.

HEALTH CARE DELIVERY/HEALTH SERVICES RESEARCH (PS140-PS171)

PS140-Quality of Acute Pediatric Asthma Care in Rural Emergency Departments

Szafran, Olga, University of Alberta; Spooner, Richard; Read, Dan; Bilous, Cheryl; Olson, Odell

Context: Emergency departments (ER) in rural settings often provide much of the acute asthma care for pediatric patients. Assessment of care based on accepted guidelines provides useful information on the quality of patient care provided.

Objective: To assess the quality of acute pediatric asthma care provided in rural ER. Design: Retrospective chart review.

Setting: Twelve acute care sites located in the East Central

Health Region in rural Alberta, Canada. Patients: 229 pediatric patients, aged 6-17 years, who presented in the ER with acute asthma during the period April 1, 2002 - March 31, 2003. Intervention/Instrument: The quality of patient assessment, treatment, education, follow-up, and outcome were assessed based on the Canadian Association of Emergency Physicians Guidelines for Emergency Management of Pediatric Asthma and the Alberta Medical Association Guidelines for the Management of Acute Asthma in Children. Outcome Measures: Patient assessment (signs/symptoms, heart/respiratory rate, temperature, blood pressure, SpO₂, PEFR, chest x-ray); treatment (O₂, B-agonist, corticosteroids, anticholinergics, antibiotics). Results: The mean age of the study sample was 10.5 years, with 51.5% being males. In terms of asthma severity, 63.8% presented with mild asthma, 23.1% had moderate and 12.7% had severe asthma. Assessment of patient signs and symptoms, taking heart rate, temperature, SpO₂, and providing B-agonists and corticosteroids both in the ER and at discharge were all performed at high rates in compliance with the guidelines. Antibiotics and chest X-rays were provided at low rates, in accordance with the guidelines. Care was less than desired in the areas of: obtaining blood pressure, respiratory rate, and peak expiratory flow rate; providing supplemental oxygen; educating the patient; and arranging follow-up. Anticholinergics were given in the ER to 54.9% of eligible patients. Within the following year, 37.1% of patients had a repeat ER visit for acute asthma. Older pediatric patients, previous asthmatics, and those with higher asthma severity were treated more aggressively. Conclusion: While the quality of care for rural pediatric acute asthma cases was relatively high for most guideline elements, there is a need to develop strategies to improve selected aspects of acute pediatric asthma care in rural Alberta.

PS141-Self-reported Health Status as a Predictive Indicator in Consumer Assessments of Primary Care
Lawson, Beverley, Dalhousie University; Burge, Fred
Context: Primary health care reform is a hot topic both nationally in Canada and around the world. As reforms are considered and implemented, it is important to assess the primary care experience before and after changes are made from the viewpoint of the consumer. Some consumer factors may significantly influence assessment values. It is therefore important to identify these factors in order to control for their influence. Objective: To examine the predictive value of self reported health status on assessments of Primary Care (PC). Design: Telephone administered population survey. Quota sampling to ensure population representativeness by gender, seniors oversampled. Analyses weighted to represent population distribution. Setting: Capital District Health Authority, Halifax, Nova Scotia, Canada. Participants: 1,607 adult residents. Instrument: The Primary Care Practice Survey (PCPS), a Canadian adaptation of the General practice

Assessment Questionnaire (GPAQ, 2003) augmented with items from the former General practice Assessment Survey (GPAS) and questions relevant to primary care in Canada and Nova Scotia. It includes 49 'PC' type items, and 11 demographic and health status items. Outcome Measures: Scale scores pertaining to 5 PC domains (access, communication, continuity, enablement, patient-provider relationship) plus overall satisfaction. Primary predictor: self-reported health status. Covariates in multivariate ordinal logistic regression analyses included gender, age, geography, education, total visits, patient years, income, minority status. Results: For all outcomes, greater self-reported health was associated with a higher assessment of PC. For example, compared to respondents reporting poor/fair health those with good health were 83% more likely to score access higher (adjusted rate ratio[RR] 1.83; 95%CI 1.30, 2.57); those with excellent health scored even higher (adjusted RR 2.72; 95%CI 1.81, 4.07). Conclusion: Although age is often included as a covariate in consumer PC assessments, self-reported health status exerts even greater influence on assessment scores. Greater efforts should therefore be made to collect this information and adjustments made.

PS142-Assessing the Needs and Issues Facing Family Physicians in Hamilton, Ontario

Copps, Brenda; Levitt, Cheryl; Idenouye, Patti; McMullan, Colin; Freeman-Collins, Lois; McMullan, Colin, McMaster University

Context: Family doctors in Hamilton have expressed concern that traditional organizational structures (eg, membership within hospital departments) have not kept pace with their needs in an ever-changing environment of care delivery. As the focus of most family practices continues to shift from the hospitals to the community, family doctors must develop new community-based linkages in order to improve the provision of primary health care for patients. Objective: To identify the key local issues and needs facing family doctors in Hamilton. Design: Mailed survey to all family doctors. Setting: Hamilton, Canada, a city of approximately 490,000 in southern Ontario. Participants: All family doctors identified in the city (n=316) were eligible for participation in the study. One hundred and ninety-one (191) surveys were returned for a response rate of 60.4%. Outcome Measures: Participants were asked to rate their access to twenty specialties (on a five-point Likert scale) and identify what they considered to be the top five issues currently facing family physicians in Hamilton. Results: Family physicians reported that they had the greatest difficulties accessing ophthalmology, psychiatry, orthopedic surgery, gastroenterology, rehabilitation, endocrinology, rheumatology and geriatrics. Overall, female family physicians and physicians under 50 years of age reported poorer access to the specialties (P<0.05). The top five issues identified were: the management of paperwork (73.9%), access to urgent specialist consults (57.1%), information transfer from hospitals (50%), information technology (33.2%) and locum coverage (32.6%). Family physicians

under the age of 50 were more likely to report access to urgent specialist consults as a top issue and family physicians belonging to one of the alternate models of remuneration were more likely to report information transfer from hospitals as a top issue ($P < 0.05$). **Conclusion:** Family physicians identified a number of local “grass-roots” issues that will need to be addressed to improve the delivery of primary care in Hamilton.

PS143-Accuracy of Perceived Changes in Income and Workload Over Time

Green, Michael, Queen's University; Gray, David; Manuel, Doug; Sharma, Sisir; Maaten, Sarah; Koller, Michelle; Viner, Gary; Rosser, Walter; Soto, Enrique; Shortt, Sam; Hogg, William

Context: Primary care reform has been an ongoing process for the past several years in Ontario. Successive provincial governments have introduced alternatives to traditional fee for service billing which use a combination of financial incentives and payment structures as well as rostering of patients to identify those patients affiliated with a particular physician or practice. Governments have promised family physicians that participation in such reforms would be financially as well as professionally rewarding. **Objective:** To determine whether the perceptions of family physicians in Ontario regarding changes in income and workload were concordant with objective measures of income and workload determined through the use of tax records and administrative billing data. **Design:** Retrospective longitudinal observational study. A random sample of physicians from each model of care was selected for recruitment. Participating physicians gave consent for a nationally recognized accounting firm to access 5 years of income data directly from the Canada Revenue Agency and corresponding billing data from the OHIP database at the Institute for Clinical Evaluative Sciences in Toronto. They also provided other information in a short survey which included questions about work hours, model of practice and (if applicable) the date they entered a new model of practice. **Setting:** Ontario, Canada **Participants:** All practicing physicians whose primary practice was identified as family or general practice were eligible for selection. **Instrument:** A short questionnaire with questions on primary care reform, hours worked, model of work, and demographics as well as consent to obtain income data from the CRA and billing data from ICES. **Outcome Measures:** Correlation between self reported perceptions of income and workload change over 5 years vs income change over the same period (as determined by review of tax records submitted to the Canada Revenue Agency) and work load changes (as measured by summary measures of work derived from a large administrative database). **Results and Conclusions:** Over 300 physicians in five models of care participated in the study. All data has been collected and analysis will be complete in July 2006.

PS144-South Carolina Mercury Proximity Study

Frithsen, Ivar, Medical University of South Carolina; Hill, Elizabeth

Context: Heart disease is the leading cause of death in the United States and South Carolina and fish has long been touted as an important source of omega-3 fatty acids which have a role in preventing heart disease. Currently there is a debate about whether deleterious effects of mercury found in fish could offset cardioprotective effects, but little is known about the relationship between proximity to mercury sources or density of fish consumption advisories and incidence of heart disease. **Objectives:** To determine if the number of fish consumption advisories or distance to a coal burning power plant is associated with cardiovascular outcomes on a county level. **Design:** Publicly available, state-wide, county level, population based data was obtained from the South Carolina Department of Research and Statistics, South Carolina Department of Health and Environmental Control, United States Census Bureau and the Environmental Protection Agency. **Setting:** Pre-existing data. **Participants:** South Carolina residents included in pre-existing data sets. **Instrument:** SAS software was used to determine Poisson regression models with distance from a power plant or number of fish consumption advisories as exposures. Three different emergency room, acute cardiovascular discharge codes and three similar inpatient discharge codes were used as outcomes. These models controlled for gender, ethnicity, age, education and poverty. **Outcome Measures:** Results of Poisson regression models. **Results:** Relative risk of most cardiovascular outcomes studied showed a statistically significant increase as the distance to a power plant decreased and showed a statistically significant increase as the number of fish consumption advisories increased. **Conclusions:** This preliminary study provides significant results that will be used to design a more comprehensive study to examine the health effects associated with mercury dispersion sources. Effects of mercury-associated fish advisories on health outcomes will also be studied.

PS145-Barriers to Self-management Reported by Seniors With Multiple Medical Conditions

Bayliss, Elizabeth, Kaiser Permanente/University of Colorado; Ellis, Jenn; Pearson, Marilyn; Strahl, Jennifer; Kershner, Mary

Context: Health outcomes for persons with multiple medical conditions depend heavily on self-management. Potential barriers to the self-management process may interfere with health outcomes. Although many of these potential barriers have been reported, they have not been well quantified in a multimorbid population. **Objective:** To assess reported barriers to the self-management process for persons with three chronic medical conditions (diabetes, osteoarthritis and depression) that require disparate management strategies. **Design:** Cross-sectional telephone survey. **Setting:** A not-for-profit HMO in the US. **Participants:** Ninety (out of a total anticipated 400) community-dwelling seniors with diagnoses of diabetes,

depression and osteoarthritis. About 60% of the respondents were female; 58% were ages 65-74, and 38% ages 75-84. A majority had completed a high school education; half were married; and most were Caucasian. They had a variety of chronic medical conditions in addition to the three conditions of interest. **Instrument:** We used a previously validated instrument to assess report of multiple potential barriers to the self-care process. **Results:** Participants reported the following barriers to self-management processes: Low levels of patient activation, limitations in physical activity, depressive symptoms, insufficient knowledge of medical conditions, compound effects of medications, compound effects of conditions (treatments and symptoms interfere with each other), financial constraints, social isolation, and low self-efficacy. Few in this sample reported barriers of decreased medication adherence, inadequate knowledge of medications, and inadequate patient-provider communication. **Conclusion:** Community dwelling seniors who have conditions that require disparate treatment strategies report a variety of barriers to their self-management process. It behooves providers who care for these common populations to be aware of such factors that may affect patients' abilities to achieve maximal health outcomes.

PS146-The Challenges of Organizational Growth in Ontario Community Health Centers

Moss, Karen, Association of Ontario Health Centers; Brown, Judith Belle; Bickford, Julia; Gillis, Loreale
Context: Community health centers (CHCs) are non-profit, community-governed organizations that provide interprofessional team based care in the areas of primary health care, health promotion and community development services. **Objective:** This paper explores the impact of the rapid growth in size of Ontario CHCs. **Design:** Phenomenological qualitative study that conducted 91 semi-structured interviews. **Setting:** 13 CHCs (10 urban and 3 rural sites) in Ontario, Canada. **Patients or Other Participants:** Various health care professionals, managers, and executive directors at the 13 participating CHCs. A maximum variation sample of participants included, for example, family physicians, nurse practitioners, health promoters, managers, administrative staff, social workers, and dietitians. **Outcome Measures:** Participants experiences and perceptions of growth and size of CHCs. **Results:** The analysis of the data revealed a rapid growth in the size of the CHC study sites. This has resulted in new forms of accountability and managerial levels to address these changes and has created a tension in the organizations. The participants described how their CHCs had initially developed from grass-roots organizations responding to local community needs that were grounded in their core beliefs and values that include equity, access and social justice. As these CHCs have grown in size they are now struggling with how to integrate their espoused values into organizations that are by necessity larger, more bureaucratic

and more hierarchical. **Conclusions:** The organizational tension experienced by these CHCs presents numerous challenges for CHC team members as well as administrators as they attempt to address this shift in the organization's culture. A proactive response on the part of the CHCs will require an openness and willingness to examine their fundamental beliefs and current reality as they design their future direction and role in primary health care renewal.

PS147-Improving Primary Palliative Care: A Critical Discursive Research Project on Physicians' Affective Skills and Shared Decision Making

Rodriguez, Charo, McGill University; Pereiro-Berenguer, Inmaculada; Marchand, Robert

Context: Physicians require both adequate cognitive competencies and affective skills, involving communication and emotional support, in order to provide high-quality palliative care. Further, a paternalistic model is giving way to a more egalitarian patient-physician relationship. Moreover, the context within which the patient-physician interaction takes place appears strongly related to the quality of palliative care delivered. **Objective:** To explore how family physicians acquire and display affective skills suited to palliative care delivery, as well as how patients and physicians discursively construct shared-decision making processes about palliative care options. **Design:** A 9-month critical ethnography. **Setting:** The palliative unit of the Verdun Community Hospital (Montreal, Canada) and the home hospitalization unit of the Valencia University Hospital (Valencia, Spain). **Participants:** Family physicians providing palliative care, and palliative patients and their families. **Interventions:** Concerning data gathering, a wide range of texts will be collected over the period of investigation through participant and non-participant observations of consultations and clinical team sessions; face-to-face interviews and focus-groups carried out with patients, their relatives and physicians at different points of the inquiry; and material such as minutes, formal agreements, media articles, government reports, and other documents relative to palliative care in each site's organizational, institutional and societal context. For textual analysis, Fairclough's three dimensional critical discourse analytical method will be adopted, followed by a narrative strategy used to construct a detailed portrait of each site. **Results:** This investigation will enrich the scarce literature on empirical research about primary palliative care delivery. A second contribution concerns the adoption of a non-traditional theoretical and methodological critical discursive approach. The study will ultimately enhance physicians' clinical practice and dying patients' well-being. Finally, its results will be used for training purposes both at the McGill Department of Family Medicine, and in Spain by the Valencia Society of Family Physicians.

PS148-Usual Source of Care and Variation in Health Care Costs

Phillips, Robert, Robert Graham Center; Dodoo, Martey; Pettersen, Stephen; Green, Larry; Bazemore, Andrew
Context: Past healthcare expenditure variation studies focused on regional or hospital comparisons. We examined variation by specialty of peoples' usual source of care, with research and policy implications relevant to primary care, particularly about training, practice, and how care is financed. Objective: Are there important healthcare expenditure differences associated with the specialty of peoples' usual source of care? Design: 2002 and 2003 Medical Expenditure Panel Survey data were used to compare expenditure estimates based on the specialty of self-reported USC. A logistic regression model was used to analyze expenditure probability determinants. After a log transformation of the dependent variable, a regression model was used to analyze the expenditure determinants for persons with any expenditure (controlling for sex, race, ethnicity, marital status, income, education, insurance status, age and health status). Setting: All settings. Participants: All non-institutionalized, civilian US citizens. Outcome Measures: Total expenditures on healthcare; expenditures on office-based physician services; and expenditures on prescription drugs. Results: Adults with a general internist as their USC spent \$1,139 more on annual total healthcare ($P<0.05$), \$234 more on office-based physician services ($P<0.05$), and \$226 more on prescription drugs ($P<0.05$), compared to adults with a family physician/general practitioner as their USC. Children with a pediatrician as their USC spent \$129 more on annual total healthcare ($P<0.05$), \$49 more on office-based physician services ($P<0.05$), and \$31 more on prescription drugs ($P<0.05$), compared to children with a family physician/general practitioner as their USC. Conclusions: There is significant variation in healthcare expenditures associated with physician specialty that is not explained by differences in self-rated physical or mental health or personal characteristics. These variations suggest further research on reasons for differences, and may have implications for training and healthcare financing. Uncontrolled or unmeasured patient attributes, rather than the specialty of the USC, may explain these variations.

PS149-Validation of a US Health Literacy Screening Tool and Development of Proxy Indicators of Low Health Literacy in the UK

Rowlands, Gillian, London South Bank University; Chesnokov, Melanie; Gomez, Gabriela; Reid, Fiona; Shaw, Adrienne; Ussher, Michael
Context: Inadequate health literacy (HL) has been identified as a major public health problem. The Rapid Estimate of Adult Literacy in Medicine (REALM) is a US-developed HL screening tool for use in a community setting. Objectives: (1) To validate the REALM against a UK-developed and validated general literacy assessment tool

(the Basic Skills Agency Initial Assessment Test: BSAIAT); (2) To investigate the sensitivity and specificity of proxy indicators of HL (employment status, whether the patients' job includes reading, receipt of state benefits and frequency of reading a book for pleasure) that could be applied across larger populations. Design: Cross-sectional study. Assuming a prevalence of low literacy of 22%, our recruitment target of 300 patients will enable us to demonstrate sensitivity and specificity of the REALM of 90% (95% CI of 81-97% and 86-94% respectively). Setting: Cardiology day-case wards in a UK hospital. Participants: Patients undergoing routine planned admission for cardiological investigation with exclusion of those too unwell to participate. Intervention: (1) Patient completion of the BSAIAT, the REALM, and proxy indicators of low literacy. Outcome Measures: (1) Correlation coefficient (Spearman's Rho) between the REALM and BSAIT; (2) sensitivity and specificity of proxy indicators of low literacy. Results: To date 74 patients have been recruited. Preliminary analysis shows (1) a correlation of 0.615 ($P<0.001$), and (2) the proxy indicators show a range of sensitivity (28% - 82%) and specificity (35% - 67%) for low HL. Conclusion: Preliminary results suggest that (1) the REALM may be valid for use in a UK setting; and (2) that proxy indicators, either alone or in combination, may be useful to determine prevalence of low HL across larger populations. Study recruitment is on target for completion by Fall 2006, enabling us to present more detailed findings.

PS150-Identifying Patients With Multiple Medical Conditions at Risk for Poor Health Outcomes

Bayliss, Elizabeth, Kaiser Permanente/University of Colorado; Ellis, Jenn; Pearson, Marilyn; Strahl, Jennifer; Kershner, Mary; Steiner, John
Context: General health status and physical functioning are important health outcomes for persons with multiple chronic medical conditions. These can be affected by both the conditions themselves and success of self-management practices in caring for these conditions. Objective: To determine whether self-report of potential barriers to self-management and disease burden may identify patients at risk for low levels of these health outcomes. Design: Cross-sectional telephone survey. Setting: A not-for-profit HMO. Participants: Ninety (out of a total anticipated 400) community-dwelling seniors with diagnoses of diabetes, depression and osteoarthritis. 59% of the respondents were female; 58% ages 65-74, 38% ages 75-84. Most had completed a high school education; half were married; and most were Caucasian. They had a variety of chronic medical conditions in addition to the three conditions of interest. Instruments: We used previously validated instruments to assess report of potential barriers to self-management and perceived total 'disease burden' (disease count coupled with a subjective assessment from 1 to 5 of perceived limitation due to each condition). Outcome Measures: General health status and physical functioning. Results: In bivariate analyses, health status was significantly associated with fewer financial

constraints and compound effects of conditions (treatments and symptoms interfere with each other); greater medication knowledge and self efficacy; less depression; and lower disease count and disease burden. Physical functioning was significantly associated with fewer compound effects of conditions, less depression, and lower disease count and disease burden. In multivariate analyses, disease burden along with gender, accounted for all of the measured variance for each of these outcomes ($R^2 = 0.34$).

Conclusions: Use of a short subjective instrument to assess 'disease burden' may help identify patients with multimorbidities at risk for poor health outcomes. They can then receive additional evaluation to address specific care needs including assessing specific barriers to their self-management processes.

PS151-The Knowledge Work of Multi-disciplinary Primary Health Care Teams

Quinlan, Elizabeth, University of Saskatchewan

Context: The establishment of multi-disciplinary primary health care teams is the one of most common initiatives in Canada to improve the coordination and integration of primary health care. The application of professional knowledge to clinical decision-making within this new form of work organization is not yet understood. The study will further our understanding of how primary health care clinicians, working in multi-disciplinary teams, mobilize knowledge to improve their delivery of frontline services to urban, rural, and remote populations. The results will be useful to guide the implementation of Canada's primary health reform agenda, in particular the development of multi-disciplinary teams. **Objective:** To investigate the social processes that coordinate the knowledge work of emerging primary health care teams. **Conceptual Problem:** Despite the limited success of the evidence-based practice movement, the application of explicit, codified knowledge to clinical decision-making is still seen as the principal form of knowledge work in health care. This study conceptualizes knowledge work as the application of both tacit, practice-based and explicit, codified knowledge to teams' shared diagnostic and treatment decisions. **Design:** Institutional Ethnography (Smith, 2005), a sociological theory-method frame, is used to analyze the structure of the intra-team discursive knowledge-translation behaviours. The research strategy involves shadowing members of the professional group widely recognized as the cornerstone of Saskatchewan's emerging primary health teams, nurse practitioners. Three nurse practitioners are selected on the basis of their location, one from each of urban, rural, and remote settings, and observed for extended periods of time as they carry out their normal work activities and interact with fellow team members. In accordance with institutional ethnography's inductive procedure, the data collected through shadowing provides the 'standpoint' from which the evolving institutional order of the primary health care system is elucidated.

PS152-The Economic Impact of Family Physicians on Their State Economy

Narasimhan, Krishnan, The Robert Graham Center; Dodoo, Martey; Philips, Robert

Context: Family physicians have long been potent generators of economic activity in their local communities. They produce income through their practices, employ large amounts of staff, and interact with many other industries. An accurate understanding of the economic impact produced by family physicians at the state level would provide important data to consider in making workforce decisions. **Objective:** To quantify the economic impact that family physicians have on their state economies. **Design:** Secondary data analysis of Area Resource File. Number of office-based family physicians per state for the year 2003 was obtained. A multiplier of five FTE staff/physician (2002 MGMA) was applied. These inputs were placed into the IMPLAN engine (2002), a validated aggregator of economic changes that result from additions to specific industries, to generate economic impacts. This process was applied to each of the fifty states and the District of Columbia. **Outcome Measures:** Economic impact in dollars per office-based family physician and total economic impact of all office-based family physicians in each state. **Results:** The economic impact per office-based family physician ranges from \$682,597 per FP for Alaska to \$1,259,838 in Mississippi based on partial preliminary analysis of 18 states. The total impact of family physicians per state ranges from \$89,956,253 in the District of Columbia for 115 physicians to \$8,286,328,413 in California for 8405 physicians. **Conclusions:** Family physicians appear to have a significant economic impact on their states. This analysis provides economic information that could be utilized by physicians, hospital executives, business leaders, and local and state government officials in physician workforce determinations.

PS153-The Validity of the INR to Albumin Ratio as a Rapid Prediction Rule in End State Liver Disease

Crichlow, Renee, University of Washington WAMI, Montana Family Medicine Residency Program; James, Tom; McNamer, Deidre; Stewart, Sarah; Lininger, Rob

Context: Both the Model of end stage liver disease (MELD) and Childs-Pugh score are well validated in aiding decision-making regarding liver transplant prioritization and likelihood of survival post procedure. We are evaluating the validity of using just two components of these clinical decision making tools for late stage prognosis prediction for patients with end stage liver disease (ESLD). This rapid prediction model for short term and medium term survival could be helpful for the community primary care provider making prognostic recommendations eg regarding patient end of life decision making. **Objective:** To determine whether the INR and albumin ratio as a rapid prediction rule in ESLD will be predictive in evaluating short term and medium term survival. **Design:** A large retrospective cohort analysis of 2 years of all patients admitted with the diagnosis of ESLD. There will be a 1-year follow up of the cohort to evaluate survival at 6 months

and 12 months. Setting: Two community hospitals. Patients or Other Participants: To best reflect the real world community hospital setting inclusion criteria will be admission diagnosis mentioning ESLD and therefore not necessarily a tissue based diagnosis. Initial analysis will be performed on the entire cohort and subgroup analysis on Childs-Pugh Class B and C. Intervention/Instrument: Chart review using Child-Pugh and the ratio of the INR to the Albumin. Outcome Measures: The hypothesis is that that patient with an INR/Albumin ratio greater than one is at greatest risk of mortality within six to 12 months. Results: The results of this work in progress will evaluate the short and medium term prognostic ability of the INR and albumin ratio compared with the Child-Pugh score in a cohort from two community hospitals followed for at least 12 months. Conclusions: This study will help determine the diagnostic accuracy of the INR Albumin flip for predicting six and 12-month mortality in ESLD.

PS154-Medication Error at the Physician-Pharmacist Interface

O'Beirne, Maeve, University of Calgary; Meadows, Lynn; Norton, Peter; Drummond, Neil; Carrie, Anita

Context: Medication errors cause a significant proportion of adverse medical events. It has been estimated that one in 20 hospital admissions in the US can be attributed to medication errors. Medication errors in community based primary care include prescribing errors as well as dispensing errors. Objectives: To collect experiences of community based pharmacists related to medical error at the physician-pharmacist interface. Design: Qualitative study using semistructured telephone interviews and theme analysis. Setting: Community based pharmacies in both rural and urban settings in Alberta and Ontario. Participants: Inclusion: pharmacists registered with the college of pharmacy in Ontario and Alberta, actively practicing in a community based practice. Results: Forty one pharmacists were interviewed. Six themes on the cause of medication errors at the physician-pharmacist interface in the community were identified. These themes illustrate the complexity of the prescription process, the importance of clarity and communication among health care professionals in caring for patients and the need for attention to detail needed as part of the process of avoiding medical errors. The themes were: illegible or unclear prescription, incorrect prescriptions, computer based prescribing, communication difficulties between health care professionals, incomplete patient information, and incomplete physician charting. Themes on solutions to the errors also emerged. These were: dealing with / rectifying errors at the physician-pharmacist interface, reporting errors at the physician-pharmacist interface, and suggestions for increased safety at the physician-pharmacist interface. Conclusions: Pharmacists can and do catch errors originating in the physician's office. They would be able to improve patient safety even further if family physicians as a profession embraced the idea that the

pharmacist is part of the team providing care to our patients. Pharmacists, like us, are dedicated to ensuring that the patient ends up with the end effect intended by the prescriber.

PS155-Geographic Information Systems to Enhance Healthcare Delivery to a Transitioning Ethnic Community

Dulin, Michael, Carolinas Medical Center; Smith, Heather; Furuseth, Owen; Blackwell, Joshua

Context: Unprecedented growth of the Hispanic population in Charlotte, NC has challenged the ability of local healthcare providers to serve and support this population. An ambulatory clinic system containing three family medicine clinics has been created to provide healthcare services for disadvantaged patients in this urban community, including Hispanic immigrants. The patterns of healthcare utilization for these clinics and nearby acute care centers first needed to be delineated in order to provide adequate services for the current population and to prepare for future growth. Objectives: (1) Define the communities served by the ambulatory clinics and nearby acute care facilities; (2) Compare clinic GIS and census data to look for potential gaps in service coverage; and (3) Determine if access to primary care services can decrease the need for acute care services. Design: Geographic information systems (GIS) were employed to evaluate patterns of healthcare access and explore potential inequalities in utilization of healthcare services. A geographic retrofitting model was used to define the clinic and acute care facility service areas. Differences in acute care utilization were identified based on patient's ability to access primary care services. Results: Marked disparities in healthcare access were revealed; specifically, under-representation of the Hispanic population within the clinic system when compared to the surrounding community. Maps of the study area showed 20 census tracts with proportional Hispanic populations greater than average. Only 5 of these 20 tracts were part of an identified service community. Conclusions: Disparities in healthcare access for our community's rapidly changing Hispanic population have been identified. Increasing the ability of these community members to access primary care services may improve community health and reduce demand on acute care facilities. This data will serve as the foundation for a Community Oriented Primary Care project designed to improve healthcare access for the Hispanic population in Charlotte.

PS156-How Do Family Physicians as Providers of Primary Care Best Serve Patients, the Public, and Governments?

Sturmberg, Joachim; Martin, Carmel, Northern Ontario School of Medicine

Context: Governments see primary care both as a strategy to respond to changing disease burdens, and in particular to bring health systems under financial control. The 'industry model' of Primary Care has discouraged new graduates from choosing family medicine as a career choice, and has undermined the physician healers' role. Objective: A scoping review of literature and a working (realist) syntheses to better

understand the state of evidence about the potential of the role of the FP in Primary Care. Design: Initially we searched and mapped perspectives and approaches from electronic databases and “snowball” methods (references of references). We identified key conceptual papers of history, philosophy, complexity, health services and inequalities related to the role of the physician in health, health perceptions, healing, therapeutic relationships and primary (health) care. We evaluated these by quality criteria, then identified relevant empirical papers and reports. We conducted synthesis by conceptual modelling of key patterns, structures and processes using metaphors describing the multi-dimensional and interconnected phenomena of complex systems. Results: A scoping review identified improving personal health as the key role of the physician throughout time. The effective personal therapeutic relationship is central to healing and embedded in all societies despite the scientific and technological advances of disease-based care. The ‘want and need’ for receiving ‘physician’ care when feeling ill is a constant feature of human society, as is the need to have an ongoing trusting and personal relationship with the physician, and the need to make sense out of the illness experience. Our synthesis places the FP role, mechanisms and outcomes in a complex adaptive system of health care to enable an integrated understanding of the evidence. Conclusions: The family physician’s role should be centered on the improvement of personal health through an ongoing personal healing relationship with their patients, the key value inherent and constant since the beginnings of medicine.

PS157-Passing the Torch in Quality Improvement Efforts

Looney, J. Anna, UMDNJ- Robert Wood Johnson Medical School; Shaw, Eric; Chase, Sabrina; Stello, Brian; Crabtree, Benjamin

Context: Studies incorporating quality improvement (QI) interventions frequently use external facilitators to guide the change process. However, little evidence from the “front lines” for facilitating change in health care settings has been published. What tools do facilitators need to work effectively with a practice staff? How can facilitators prepare the practice for sustaining positive change? We examine the process of handing off the facilitation role to an apprentice facilitator. Objective: To detail the facilitator training for a QI trial to identify effective techniques for “passing the torch” to the apprentice facilitator in family medicine practices to sustain change efforts. Design: Data were collected as part of an NHLBI-funded QI trial (Using Learning Teams for Reflective Adaptation – ULTRA). In this project, a trained facilitator guides the RAP (Reflective Adaptive Process) team through change efforts over a 12-week period. The majority of meetings were recorded and had written fieldnotes. Twelve practices were selected (from a total of 56) that had completed RAP meetings and had

complete sets of data. We listened to recordings and read fieldnotes to document both the process and outcomes of “passing the torch.” We present two contrasting case studies of the apprentice facilitator role (viz. a “good” and a “poor” hand-off). Setting: The facilitator training and 12 family medicine practices in New Jersey. Results: Facilitators benefit from understanding their role as mentors to apprentice facilitators. Facilitator training requires a balance of didactic knowledge transfer and practical skill development, as well as bonding and ongoing support structure. Conclusions: External facilitation is integral for guiding QI teams through change. Transitioning from the external facilitator to an apprentice facilitator requires time and planning which can be scarce commodities in busy practices. Future studies incorporating QI interventions should build in semi-structured processes to “pass the torch.”

PS158-Why Do People Choose the Hospital Emergency Instead of Their Regular Source of Primary Care?

Roberge, Daniele, Université de Sherbrooke; Larouche, Danielle; Pineault, Raynald; Lévesque, Jean-Frédéric

Context: Reasons why patients decide to seek medical care in a PHC setting (medical clinic or community health center) or at a hospital emergency room (ER) for a health problem are not very well known, available research being generally limited to one type of settings. It is believed that the perception of accessibility to the regular PHC source of care plays an important role in that decision. A population-based survey offers the opportunity of a comparison of patients and their perception, according to the type of care setting they choose. Objective: To understand the role of perceived PHC accessibility in the choice to seek care in a PHC setting or at an ER. Design: Population-based telephone survey. Setting: Montréal and Montérégie regions, Québec, Canada, in 2005. Participants: 9206 adults 18 years and older living in the community, able to complete the interview in French or English. Outcome Measures: Utilization of a PHC setting or an ER source of care for a perceived important health problem in the last six months. Results: Choice of a care setting is related to perceived pain, gravity and potential consequences of the health problem, perceived accessibility to the regular PHC source of care and individual characteristics (age, education, perceived economic and health status, and declared co-morbidities). Conclusions: When patients choose where to seek health care, their decision is based on what they know of the gravity of their problem and what services are available to them. As such, they behave as well-informed consumers.

PS159-Out-of-hours Care: Standard Setting Using the Out-of-hours Patient Questionnaire

Campbell, John, Peninsula Medical School; Dickens, Andy; Richards, Suzanne; Pound, Pandora; Greco, Michael; Bower, Peter; Roland, Martin

Context: Provision of out-of-hours care within the UK has recently undergone radical reformation. General practitioners no longer have 24-hour responsibility for the care of their

patients. National standards have been established for out-of-hours service providers. **Objective:** To explore the utility of the out-of-hours patient questionnaire (OPQ) in standard **Setting** in relation to out-of-hours care. **Design:** Postal survey. **Setting:** UK out of hours primary care services. **Participants:** 1,250 patients who had recently received out-of-hours care. Scale scores were calculated for each subject in respect of satisfaction with the consultation, and satisfaction with “entry access” arrangements. Users’ views on standards in these key elements of out-of-hours service provision were investigated using a derivation of a previously-reported method for undertaking this assessment. **Results:** The survey was carried out in three areas which were predominantly inner city, urban, or rural. Following one reminder, 570 usable responses were obtained from 1,250 individuals surveyed (46% response rate, comparable with similar studies). A range of experience of out-of-hours care was reported, which was dependent on the area surveyed, and on the management experienced by the user. Reported service provision did not meet users’ expectations of care in respect of any of four national assessment standards (delay in answering the initial call, length of time to health professional calling back, delay in home visiting, delay following treatment center attendance) when a standard of “excellent” reported by at least 75% of the user population was applied. Applying less stringent criteria, accepting either “good” or “excellent” reports of service provision, higher levels of standard attainment were evident. **Conclusion:** The OPQ proved a useful measure in evaluating users’ experiences of contact with out-of-hours healthcare providers. Users expressed extremely exacting standards for service provision. Responding to such high expectations might prove both difficult and costly for the UK NHS to attain.

PS160-Use of Services for Health Emergencies by Patients Attending Family Health Networks, Family Health Groups, and Fee-for-service Practices in Thunder Bay, Ontario

Howard, Michelle, McMaster University; Goertzen, James; Kaczorowski, Janusz; Morris, Kelly; Hutchison, Brian
Context: Family Health Networks (FHN) and Family Health Groups (FHG) are new models of primary health care delivery recently implemented in Ontario that are designed to provide accessible, and comprehensive care to patients. **Objectives:** To compare health services used by patients in 8 FHNs, 16 FHGs, and 12 non-FHN/FHG practices for self-defined urgent health problems: personal family physician, after-hours clinic, walk-in clinic, emergency department, and telephone advisory service. **Design:** Cross-sectional observational study. **Setting:** Thunder Bay, Ontario **Participants:** Patients over 1 year of age who had visited a participating practice in the previous 12 months were randomly selected from electronic billing data or rosters. **Instrument:** A mailed survey asked about urgent health problems in the previous six months and use of health

services for the most recent problem. **Outcome Measures:** Rates of use of personal family physician, after-hours clinic, walk-in clinic, emergency department, and telephone advisory service. **Results:** The response rate was 62.3% (5884/9373), two-thirds (60.2%) of respondents were female, and the mean age was 43.8 years. Prevalence of a self-reported urgent health problem in the previous six months was 23.4%. A similar proportion of patients that reported an urgent health problem from all three practice models called their family physician first (30.3-34.3% $P=n.s.$) Overall prevalence of use of the emergency department was 11.4% (199/1753) among FHN respondents, 15.7% (347/2209) among FHG respondents, and 14.3% (252/1779) among non-FHN/FHG respondents (FHN vs FHG $P=.006$, FHN vs non-FHN/FHG $P=.02$). There were no significant differences in use of after-hour/walk-in clinics or telephone advisory service between the three groups. Analyses adjusted for patient and provider characteristics will be presented. **Conclusions:** Different primary care practice models may affect the services patients use for their self-defined urgent health problems.

PS161-Testing to Prevent Colon Cancer in Rural Colorado: Factors That Affect Being Tested

Overholser, Linda, University of Colorado Health Sciences Center; Zittleman, Linda; Araya, Rodrigo; Bublit, Carolyn; Bailey, Desiree; Main, Deborah; Westfall, Jack
Context: Colorectal cancer (CRC) remains the second leading cause of death from cancer in the state of Colorado. Studies have demonstrated that people living in rural areas are less likely to be up to date with screening guidelines for CRC. Many of the sociodemographic features prevalent in rural populations and patient perceptions regarding CRC screening can act as barriers to being screened. **Objective:** 1) To determine if sociodemographic factors and patient perceptions among rural Colorado patients visiting a healthcare provider are associated with being up to date with CRC screening. 2) To determine if patients’ health beliefs are associated with intentions to get screened for CRC. **Design:** Cross sectional survey study using community participation. **Setting:** The High Plains Research Network (HPRN), a network of primary care clinics in rural Northeastern Colorado. **Patients:** All patients over the age of 50 who visited a healthcare provider during the study period. Approximately 750 participants from 22 rural primary care clinics were asked to participate. **Instrument:** Self-administered survey adapted from 2 previous CRC questionnaires. **Outcome Measures:** The main outcome variables were: 1) Being up to date for CRC screening and 2) Intention to get screened for CRC. Chi-square analysis was used to determine the association between sociodemographic and health belief variables with these outcomes. **Results:** Preliminary survey response rate is 86%. Data collection and analysis will be complete by October 2006. It is anticipated that both sociodemographic factors and health beliefs will be associated with being up to date with CRC screening and with the intention to get screened. **Conclusions:** Identifying factors associated with plans to get screened or being up to date with

CRC screening can be useful in directing educational and outreach interventions to increase CRC screening in rural areas.

PS162-P-PROMPT: Provider and Patient Reminders in Ontario Using Multi-strategy Prevention Tools Demonstration Project

Kaczorowski, Janusz, McMaster University; Sebaldt, Rolf; Lohfeld, Lynne; Donald, Faith; Burgess, Kenneth; Goeree, Ron

Context: The Primary Care Network (PCN) and Family Health Network (FHN) delivery models in Ontario offer a number of practice enhancements, including annual performance bonus payments that are based on increasing the delivery rates of selected preventive services. **Objective:** Provider and Patient Reminders in Ontario using Multi-strategy Prevention Tools (P-PROMPT) is a demonstration project aimed to increase the delivery of four preventive care services. **Design:** P-PROMPT acquires, integrates, and organizes data for preventive care services from internal and external sources to establish lists of eligible due and overdue patients to generate provider prompts and patient-specific reminder letters. **Setting:** 24 PCN/FHN networks (249 family physicians and 350,000 patients) across Ontario. **Patients or Other Participants:** In 2005, over 69,000 reminder letters were sent to eligible patients due or overdue for pap smears, mammograms and flu shots. Interim (at 8 months) rates of delivery of pap smears and mammograms were compared using before-and-after analysis. **Intervention:** A multi-strategy reminder and recall system for preventive care services. **Results:** Using the first 8 months of partial data, the overall rate of time-appropriate (< 24 months) pap screening for eligible women 35-69 years of age increased from 61.5% (47,601/77,406) to 66.4% (50,202/75,560). The overall rate of time-appropriate (< 24 months) mammography screening for eligible women 50-69 years of age increased from 63.8% (26,017/40,801) to 65.3% (26,643/40,813). 12-month results based on full data that includes 20,000 patient reminder letters sent in 2006 will be presented and compared with baseline rates and with rates in concurrent non-participating FHN/PCN practices. **Conclusions:** A multi-strategy reminder and recall system for preventive care services that is based on a data integration and feedback approach can be successfully implemented on a large scale in family practices and can significantly increase rates of delivery of preventive services.

PS163-Rehabilitation in Primary Care: A Randomized Controlled Trial to Assess the Effectiveness and Costs of Rehabilitation Services on the Health Status of Adults With Chronic Illness

Richardson, Julie, McMaster University; Letts, Lori; Chan, David; Baptiste, Susan; Edwards, Mary; Coman, Liliana; Price, David; Hilts, Linda; Stratford, Paul; Law, Mary

Context: Canada is undergoing primary care renewal.

Transformation priorities include the integration and evaluation of rehabilitation into primary care, and issues of chronic disease management. **Objective:** To determine whether adults with a chronic illness receiving care in a primary care setting show greater improvement in health status, fewer hospital admissions and emergency room visits as a result of a rehabilitation intervention compared with adults in the primary care setting who do not receive the intervention. **Design:** A single blinded randomized controlled design, assessments at baseline, 9, 18, and 24 months. **Setting:** Stonechurch Family Health Center, Hamilton, Ontario. It is affiliated with the Department of Family medicine at McMaster University and services 15,000 patients. **Participants:** N= Sample 303 (Intervention=152, control =151). Participants were 44 years of age and older, with a chronic disease, who had attended their physician's office at least 4 times in the previous year. Intervention. Patients at risk, screening for falls, functional decline and hospital admission, received priority. A case management approach with, individualized assessment and goal based treatments, a 6week chronic disease self-management group intervention, a web-based rehabilitation information site www.iamable.ca. **Outcome Measures:** The Short Form -36, the Late-Life Function and Disability Instrument, Physical Self Maintenance Scale, Instrumental Activities of Daily Living Scale, 2 minute walk test, Lower Extremity Performance Test, grip strength, home safety assessment, self management and self efficacy measures. **Results:** We anticipate that the intervention group will show improved health status, less functional decline, higher scores on the performance measures, fewer hospital, emergency room and physician visits than the control group. **Conclusions:** This study will assess whether rehabilitation services delivered in a primary care setting improves the health status of persons with chronic illness and decreases hospital and visits to family physicians.

PS164-Issues in the Development of Latent Variables for a Patient Safety Study

Longo, Daniel, Univ of Missouri-Columbia; Hewett, John

Context: In survey research that involves a large number of variables, to adequately study the research question, difficulties arise both conceptually and analytically in determining the most vital variables of interest. **Objective:** To reduce 91 survey questions to those most conceptually meaningful and analytically powerful. **Design:** Surveyed acute care hospitals in Missouri and Utah at two points in time, using a 91-item comprehensive questionnaire. **Setting:** Utah and Missouri acute care hospitals participating in a patient

safety study. Participants: Cohort of 107 Missouri and Utah hospitals. Instrument: Survey instrument variables and latent variable development. Outcome Measures: The development of seven latent variables and a summary measure. Results: Seven latent variables were developed: computerized physician order entry (CPOE) systems, computerized test results, and assessments of adverse events; specific patient safety policies; use of data in patient safety programs; drug storage, administration, and safety procedures; manner of handling adverse event/error reporting; prevention policies; and root cause analysis. The coefficients for the seven latent variables were comparable, permitting us to create the summary variable by summing the latent variables. We then sought correlates with performance using Spearman's correlation coefficients. Coefficient alphas were computed for the newly created variables. Conclusions: Latent variable analysis is vital in dealing with extremely large data sets.

PS165-Development of a Lexicon to Best Describe Terms and Concepts in Primary Health Care

Schmelzle, Jason, Queen's University; Rosser, Walter; Godwin, Marshall; Birtwhistle, Richard

Context: Primary health care reform in Ontario is driving the progression towards collaborative primary health care delivery. This climate of increasing interdisciplinary care delivery, and the broad range of health care providers who work in such a capacity, necessitates tools which promote a common language between providers. Objective: Develop a lexicon of terms and concepts, which best describes primary health care principally in the Context of Ontario, Canada. Provide descriptions of current primary health care delivery models in Ontario. Design: Mixed methods: postal and web-based surveys, focus group and feedback from key stakeholders. Participants: 1) Questionnaire distributed to 250 primary health care providers in Canada and internationally; 2) family physician, registered nurse, nurse practitioner, psychologist, physiotherapist, occupational therapist, pharmacist, chiropractor, nutritionist and midwife participated in focus group; and 3) primary health care associations and the Actively Building Capacity in Primary Health Care Research project team members provided feedback during multiple phases of lexicon development. Results: A document was created which contains more than 200 primary health care terms and concepts that were selected by completing a literature review and acquiring extensive feedback. Terms and concepts are relevant to research, health services delivery, policy and clinical care. Descriptions of several models of primary health care delivery in Ontario are presented. Conclusions: This task made apparent the difficulties in achieving consensus on terms and concepts relevant to primary health care in the context of Ontario and generally. However, the lexicon has proven to be an effective tool in eliciting discussion between individuals, which may prompt progression towards consensus of a common language between providers.

PS166-Community Care for Complex Illness

Lukas, Lou, Lehigh Valley Hospital; Dostal, Julie; Letcher, Abby; Rockwell, Elke

Context: "Advanced complex illness" (ACI), or eventually fatal illness refer to the 1-3% of the American population who are in the late, life-threatening stages of chronic, malignant or degenerative disease, yet who may not be seen as "terminally ill" or "hospice appropriate." While small in number, they consume 30-50% of health care resources, yet often fail to receive assessment or treatment for emotional, spiritual, social and moral suffering that is common for very ill people. Their indolent course progresses relentlessly but so gradually they often die "suddenly" leaving their families unprepared. Many of these people are seen in primary care office, but their medical home is uncertain because of multiple sources of care. Objective: Evaluate the effectiveness of a primary-care, practice-based intervention to provide increased medical and social support, "Community Care for Complex Illness," on patient and health systems outcomes. Design/Measures: Practices are paired in a delayed intervention control study. Baseline and periodic measures include health related quality of life, social connections, spiritual assessment, satisfaction, hospital admission, ED use, length of stay, palliative care referral, hospice referral, advanced care planning documentation, and qualitative assessment. Process measures include office adoption of intervention methods. Setting: Primary care offices in one geographic area who are variously affiliated with one hospital system in Pennsylvania. Participants: Patients are selected based on illness severity based on age, disease(s), health care utilization and physician judgment. Intervention: 16 week facilitated change program that introduces key concepts, skills and services for the care of people with ACI. These include recognizing ACI, using disease registries, choosing a medical home, team care using a palliative care nurse practitioner, Community Exchange for social connection, and initiating and updating advanced care planning. Results: This intervention is currently being piloted for feasibility. Preliminary process data will be available for presentation.

PS167-The RoadMAP Project: A Primary Care-based, Interprofessional, Chronic Disease Management Strategy *Tranmer, Joan; Godwin, Marshall; Seguin, Rachelle, Queen's University*

Objectives: To determine the effectiveness of a primary care based, interprofessional chronic disease management strategy for persons with symptomatic heart failure (HF) and chronic obstructive pulmonary disease (COPD) on: (1) adherence to clinical practice guidelines (CPG's) by family physicians and (2) quality of patient care. Design: A demonstration project that utilized a cluster, randomized trial design. Physician practices were randomized to either a control group (who received CPG information only) or the intervention group. Intervention: The multicomponent intervention consisted of: (1) a nurse specialist (NS) with advanced knowledge and skill in the care of persons with COPD and HF who interacted and

met with family physicians, as needed; (2) the development and implementation of patient specific management action plans (MAP), based on CPG's and individual patient needs; and (3) accessible and available nurse and physician specialist, professional to professional consultation support from the COPD and HF specialists. **Outcome Measures:** The primary outcome was the degree of adherence to CPG's at 6 months post-enrollment. Secondary outcomes included patient satisfaction with primary care, patient HRQL, self-care capacity, community and acute care resource utilization and physician satisfaction. **Results:** 29 physician practices were randomized (15 intervention, 14 control) and 132 patients were enrolled. Interim feedback suggests that physicians and patients in the intervention group are benefiting from the program. **Conclusion:** Optimal, evidence informed, cost-effective primary care management of persons with advanced chronic diseases is a desired health goal that, at times, is difficult to achieve. The RoadMAP program is an innovative model of care that builds upon existing resources and evidence to optimize linkages between health care sectors, which is particularly applicable to the evolving, family health care team models.

PS168-Nurses' Involvement in Quebec Family Medicine Clinics: Changes in the Care Experiences From the User's Perspective

Beaulieu, Marie-Dominique, CHUM - University of Montreal; Goudreau, Johanne

Context: It is essential that we track changes in the perceptions of clientele who are consulting in care settings undergoing structural change. This paper reports on the experience of users registered in a new type of care services organization in Québec: the family medicine group (FMG). **Design:** Two surveys conducted two years apart (in 2003 and 2005). **Setting:** Five community-based primary care clinics. **Participants:** Patients (T0, N=1,430; T2, N=1,325) who would be followed by an FMG physician or would be users of an FMG point of service (at least three visits per year). They were recruited in waiting rooms. **Outcome Measures:** The nine primary-care dimensions of the "Primary Care Assessment Tool." Multivariate analyses (linear regression), controlling for socio-demographic variables and perception of state of health. **Results:** The patients were favorable to nurses having an expanded role in their FMG. Statistically significant improvements were found for the entire patient population in the following dimensions (from most to least significant): accessibility outside of regular working hours (score: 4.1 vs. 5.42; $p < 0.0001$); accessibility during working hours (score: 6.97 vs. 7.38; $P < 0.0001$); physician-nurse coordination (score: 6.07 vs. 7.35; $P = 0.04$); comprehensiveness of care (score: 6.11 vs. 6.36; $P = 0.01$); and knowledge of the patient (score: 6.91 vs. 7.06; $P = 0.03$). The experience of care is comparable for users who were also followed by a nurse, independent of the fact that these users had an even more favorable perception of accessibility during working hours

($f = 5.01$; $P = 0.02$). **Conclusion:** After two years of registration with an FMG, patients perceived changes in the services they were receiving, independent of whether or not they had seen the nurse, except for accessibility of services, which was perceived even more favorably.

PS169-Social Capital in Primary Care Practices and Implications for Patient Outcomes

DiCicco-Bloom, Barbara, UMDNJ; Frederickson, Keville; O'Malley, Dena; Ohman-Strickland, Pamela; Shaw, Eric; Crosson, Jesse; Looney, Anna

Context: Social capital is a resource that emerges from trusting relationships in which individuals can openly share their knowledge. This resource has the potential to improve primary care practice performance by enhancing practice level knowledge that can contribute to better patient outcomes. Although primary care research has explored team development using the chronic care model, this approach tends to support the pre-eminence of certain roles and titles while diminishing the potential contributions of other practice members. Consequently, the chronic care model may undermine the emergence of relationships that strengthen practice performance. Our work suggests that improved patient outcomes are associated with specific social capital attributes that allow practices to harness the resources of all practice members. **Objective:** To identify specific attributes of social capital among nurses, physicians and other primary care practice members, to determine their association with patient outcomes. **Setting:** Twenty family medicine practices in New Jersey and Pennsylvania. **Design:** A secondary data analysis of comparative case study data. **Participants:** Members of family medicine practices participating in ULTRA ("Using Learning Teams for Reflective Adaptation"): a practice improvement trial. **Design:** A template analysis of social capital attributes that determines their association with adherence to chronic illness guidelines. The data sources for qualitative analysis of social capital include observational data, in-depth interviews, and practice information forms. Data sources for quantitative analysis of patient care outcomes include chart reviews. **Results:** Findings suggest that the presence of first level outcomes such as bonding, bridging, cooperating and reciprocating among practice members contribute to second level outcomes such as fluid alliances and trust and ultimately to transformative shared understandings that result in increasingly higher levels of practice performance. **Conclusion:** Understanding the processes that support social capital in primary care practice settings enhance a practice's ability to maximize practice function and improve patient care.

PS170-Sustainability of Improved Preventive Services' Delivery Resulting From Outreach Facilitation

Hogg, William, University of Ottawa; Lemelin, Jacques; Soto, Enrique; Moroz, Isabella

Context: There is research evidence showing that outreach facilitation leads to improvements in family physicians' practice patterns and preventive care performance. However,

information on the long term sustainability of facilitation's effects is limited, some suggesting that it may depend on the provision of continued assistance. **Objective:** To assess the extent to which gains in preventive performance achieved through outreach facilitation could be maintained overtime when the focus and attention of the practice physician and staff was purposefully redirected away from preventive care onto chronic illness care. **Design:** Uncontrolled before-and-after trial of sustainability of an outreach facilitation program. **Setting:** 30 Primary Care Network (PCN) or Family Health Network (FHN) family physician practices in Ontario, Canada. **Participants:** 58 family physicians from all Ontario PCNs and five Eastern Ontario FHNs enrolled in the study. **Intervention:** Outreach facilitators (specially trained nurses) provide prevention performance feedback to practices, build consensus on improvement goals and deploy through regular visits during the first 12 months of the study, a systems strategy tailored to the practice needs and characteristics. **Outcome Measures:** Primary: Change from baseline (January 2004) to end of intervention (December 2005) in preventive performance index, defined as the number of appropriate preventive maneuvers done minus number of inappropriate maneuvers done, divided by the number of eligible preventive maneuvers, as determined by a chart audit. Secondary: Same as the primary outcome but as determined by a patient questionnaire. **Results:** Data analysis is ongoing; results will be ready before the 2006 annual meeting. **Conclusions:** The study seeks to determine whether or not the benefits of outreach facilitation can be sustained over time.

PS171-Following-up Infants Til One Year Old in a Family Medicine Outpatient Clinic

Burgut, Erhan; Saatci, Esra; Bozdemir, Nafiz, Cukurova University

The objective of this study is to find out the most diagnosed diseases and the most prescribed drugs to the children till one year old who applied at the first three months of their life in The Family medicine Outpatient Clinic where primary care service offered. The data was collected from 607 children three months old, who applied Outpatient Clinic between 01.01.2003 and 30.09.2004. These children's medical records till one year old were examined. The average age of the children in the first application is 52.10 ± 22.19 days. It is found that only 48.68 % of children applied once. Totally 1247 records are seen. Children's insurances affect the number of the applications. It is found that the most common complaints seen in both sexes are cough, fever and restless baby. The most diagnosed diseases are 'healthy child', 'upper respiratory tract infection' and 'otitis media'. On the other hand the most recommended drug in antibacterial group is beta-lactams and in symptomatic group is D vitamin and analogs. As a result we should principally improve ourselves in following up healthy child. Also we have to warn the families about not only smoking

cigarettes especially at home but also the unnecessary antibiotic usage.

OFFICE/PRACTICE MANAGEMENT (PS172-PS179)

PS172-A Qualitative Needs Assessment of Preparation for Community Health Center Clinical Leadership

Markuns, Jeff, Boston University

Context: Community health centers (CHCs) are facing a shortage of primary care physicians at a time when government plans call for expansion of the number of CHCs. To accomplish this expansion, CHCs will require additional well-trained physician leadership. **Objective:** To ascertain knowledge and leadership skills important to CHC medical directors, where and how they learn these skills, and preferred methods and venues for future training programs. **Design:** Up to 15 individual interviews and focus groups using open-ended interviews until data saturation. Qualitative methods were used to identify patterns and themes through cross-case content analysis of transcripts. **Participants:** Medical directors of CHCs in the northeastern United States. **Outcome Measures:** 1) Identification of desirable future educational interventions; 2) Identification of necessary skills and cataloguing of previous training experiences. **Results:** Initial findings revealed that CHC medical directors believe interpersonal and human resource issues are among the most important skills needed for success as a CHC leader. Other significant skills specific to CHC practice related to communication, collaboration, finance, and clinical care. Medical directors often felt unprepared in these areas, except for clinical care, with some participants reporting no formal leadership training. Leadership training experiences included 1 to 5 day programs specific to medical directors in the initial years after their appointment, mentorship, and peer networking opportunities. With additional data, we plan to further clarify the relative importance of identified skills and a preferred training curriculum. **Conclusions:** There are limited training opportunities specifically for medical directors of CHCs. The development of a hierarchy of needed skills and identification of desirable training mechanisms will allow us to design and deliver targeted forms of CHC leadership education. Additional training opportunities for early and mid career CHC medical directors are needed to supply effective physician leadership for CHC expansion.

PS173-Physicians and Nurses in Collaborative Practice: Perceptions and Expectations of Patients With Multiple Chronic Conditions

Fortin, Martin, University of Sherbrooke; Hudon, Catherine; Soubhi, Hassan; Ntetu, Antoine L; Maltais, Danielle; Provencher, Christine; Almirall, José

Context: Patients with multiple chronic conditions (multimorbidity) represent an important part of the primary care population. Their complexity justifies testing new models of care involving shared responsibilities between physicians and nurses. The subject of physician-nurse collaboration is

abundant in the literature, but studies addressing patients' points of view are scarce. **Objective:** To evaluate perceptions and expectations of patients with multimorbidity about the functioning of a new model of collaboration physician-nurse. **Design:** Qualitative methodology. Individual in-depth interviews were transcribed, coded and analyzed thematically. **Setting and Participants:** Eighteen ambulatory adult patients with 5 or more chronic conditions from family physicians' practices in the Saguenay region, province of Quebec. **Results:** Preliminary analyses of the first four interviews show that among the conditions of success of collaborative practice, good communication between family doctor s and nurses is a central issue. Patients reported a lack of knowledge of the role of the nurses in a collaborative model. They tend to rely on a classical definition of the role with clear power imbalance. The nurses' field of competence and expertise is not known and often questioned. They express some reticence at the idea of including the nurse between them and their doctors but are also willing to give it a chance as long as the respective roles are well defined. **Results** presented here are just preliminary and come from patients with a long history being cared for by doctors alone. Complete results will be presented at the NAPCRG. **Conclusions:** Interventions involving shared responsibilities between physicians and nurses should take into account patients' perceptions. Patients should also be informed about nurses' competences.

PS174-Diabetes Care in Family Medicine Practices With Nurse Practitioners and Physician Assistants

Ohman Strickland, Pamela, University of Medicine and Dentistry of New Jersey; Orzano, John; Tallia, Al; Hudson, Shawna; Balasubramanian, Bijal; Crabtree, Benjamin
Context: Nurse practitioners (NPs) and Physician Assistants (PAs) provide care to patients with chronic illnesses, such as diabetes. These practitioners' skills in counseling and education should complement those of other clinicians and enhance patient care. However, their impact on the overall quality of care in the context of the typical family practice has not been fully explored. **Objective:** To determine whether family medicine practices employing NPs/PAs provide better care to diabetic patients and what practice characteristics affect the potential impact of NPs/PAs. **Design:** Cross-sectional practice surveys and medical record reviews. **Setting:** 48 New Jersey and Pennsylvania family medicine practices. **Participants:** 779 men and women with diabetes. **Outcome Measures:** Adherence to NHLBI diabetes guidelines related to assessment, treatment, and achievement of intermediate outcomes. Practice characteristics including practice members' perception of workplace chaos and share decision-making. **Results:** Practices employing NPs/PAs were not significantly more likely to provide care according to guidelines relative to other practices (Assessment P=0.3243; Treatment P=0.4620; Intermediate outcomes P=0.589). Practices with

NPs/PAs were significantly less likely to share decision-making among staff within the practice (16.7% versus 59.1%; Fisher's exact P=0.0097) and were more likely to be very chaotic (65.0% versus 31.8%; Fisher's exact P=0.0248). In addition, practices employing NPs/PAs were no more likely to provide behavioral counseling of any kind through nurses or health educators (28.6% versus 29.6%; Fisher's exact P=1.000). **Conclusions:** Diabetic patients in family practices with NPs/PAs do not necessarily experience better quality of care and are not more likely to achieve target lab values. Due to their chaotic environments, practices may not be taking advantage of the opportunity to have these skilled practitioners focus on providing effective behavioral counseling, education and other preventive services. Thus, NPs and PAs within family practices may be duplicating rather than supplementing the contributions of the traditional physician.

PS175-Development of a Voluntary Assessment Program for Interprofessional Family Practices in Ontario

Levitt, Cheryl; Price, David; Hiltz, Linda; McMullan, Colin; Barbara, Angela, McMaster University

Context: Programs for assessing quality in family practice settings have been developed internationally, but are not fully generalizable to interdisciplinary practices in Ontario. **Objective:** To develop a voluntary, collaborative assessment tool and program for celebrating excellence and improving quality in interprofessional family practices in Ontario. **Design:** Mixed qualitative methods including: international literature review and environmental scan, 13 interprofessional focus groups, teleconferences with experts, and site visits to international quality programs. **Setting:** Urban and rural communities in Ontario **Participants:** Patients; interdisciplinary primary care professionals who work in the family practice including family physicians, nurse practitioners, family practice nurses, licensed practical nurses, social workers, dietitians and pharmacists; family practice staff members including receptionists, office managers and medical secretaries. **Outcome Measures:** A list of proposed recommendations for a quality assessment program in Ontario; the Quality Assessment Tool; Quality Assessor Training Workshop. **Results/Conclusions:** The Quality program involves a practice self-assessment (facilitated by the Assessment Tool) and an external assessment to validate the family practice's progress. The Assessment Tool incorporates indicators from New Zealand, Australia, the United Kingdom, Europe, the United States and other Canadian projects. Canadian legal and ethical guiding documents established the foundation. The Assessment Tool includes the key areas for accessible, safe, effective family practice care: (1) factors affecting patients; (2) physical factors affecting the practice; (3) clinical practice systems; (4) practice and patient information management; and (5) continuous quality improvement and continuing professional development and quality of work life. During the training workshop, interdisciplinary health professionals, family practice staff and

patient representatives were trained as Quality Assessors to undertake the external assessments.

PS176-Building Knowledge and Skills for Effective Leadership for Change in Primary Care

Barnsley, Jan, University of Toronto; Baker, Ross; Berta, Whitney; Austin, Zubin; Talbot, Yves; Takeda, Silvia; Tirel, Clarys

Context: A team from the University of Toronto developed and delivered a curriculum on leadership for change in primary care. The project targeted four areas that are critical for the improved delivery of primary care: 1. greater collaboration and integration among primary care providers and between primary care providers and other health care providers; 2. improved use of information and information technology; 3. redesign of work practices; and 4. performance monitoring and improvement. **Objectives:** To evaluate the curriculum and identify barriers, facilitators and motivators that influence the change process in primary care settings. **Design:** Curriculum evaluation and a multiple-case study to examine the change processes that lead to improvements in team functioning, information management, and performance measurement. **Setting:** Primary care practices from a range of geographic location and with a range of organizational characteristics. **Participants:** Twelve teams participating in the Leadership for Change program. **Instrument:** Evaluation questionnaires for the assessment of the curriculum, individual structured interviews conducted with project team and primary care group members, and practice site visits. **Outcome Measures:** Participant assessment of the curriculum content, format and delivery. Identification of factors that limit or promote change in primary care practices. **Results:** The evaluation of the curriculum highlighted some of the strengths of the program such as the action learning model, the PDSA rapid cycle methodology and the focus on practice-specific improvement projects. Participants requested more emphasis on interdisciplinary team work and more discussion on the environmental context for primary health care. The case study identified organizational commitment, leadership, the presence of an information management system, and previous experience managing change as key facilitators for change. **Conclusion:** Key success factors that enable changes in primary care settings can be identified. These factors are crucial in determining readiness for change, the potential for success and for sustainability. These factors must be considered in the development of curriculum content and delivery.

PS178-Measures to Characterize Primary Care Practice - Part 1: Development, Issues, and Solutions

Giles, Gavin, University of Western Ontario; Chevendra, Vijaya; Terry, Amanda; Thind, Amardeep; Stewart, Moira; Marshall, J. Neil

Context: This study was based on the process of creating the Deliver Primary Healthcare Information Project (DELPHI

Project), a researchable database built from pooled electronic medical record (EMR) data. The intent of this database is to produce measures characterizing primary health care. **Objective:** To ascertain issues, problems and solutions in the creation of measures of primary care (related to volume, diagnoses, referral patterns, quality of diabetes care, comprehensiveness of care and interdisciplinary care) developed from electronic medical records. **Design:** Creation of a longitudinal database. **Setting:** Data used in this study was collected from primary care practices in Southwestern Ontario, Canada. **Patients or Other Participants:** The DELPHI database currently encompasses 23,130 encounters; 7,700 patients; and 15 primary care providers. **Outcome Measures:** The main outcome measures (for the DELPHI Project) were measures characterizing the volume, diagnoses, referral patterns, quality of diabetes care, comprehensiveness of care and interdisciplinary care of primary care practices. Secondary outcome measures (for this study) were the issues, problems encountered and solutions developed as we created the main outcome measures. **Results:** Standardization of data entry is a critical requirement when creating measures using electronic medical record data. User defined fields, while standardized at the practice-level, can pose many problems when aggregated. An educational program, designed to ensure the standardized entry of data, enhanced the data quality. Knowledge of how data is entered into the EMR and identifying the contributions of each provider are critical when analyzing data at the provider level. A strategy was developed which ensured knowledge of provider data entry patterns. **Conclusions:** To ensure high quality measures of primary health care based on electronic medical record data can be constructed, a method to ensure standardization of data entry and understanding user patterns must be in place.

PS179-Measures to Characterize Primary Care Practice - Part 2: Results

Chevendra, Vijaya, The University of Western Ontario; Giles, Gavin; Terry, Amanda; Thind, Amardeep; Stewart, Moira; Marshall, J. Neil

Context: Measures of primary health care were produced based on electronic medical record (EMR) data collected through the Deliver Primary Healthcare Information Project (DELPHI Project). The measures of volume, diagnoses, referral patterns, and quality of diabetes care were designed to characterize primary health care. **Objective:** To use measures volume, diagnoses, referral patterns, and quality of diabetes care to describe primary health care. **Design:** Descriptive analyses of six months of data from the DELPHI Project database. **Setting:** Data used in this study were collected from primary care practices in Southwestern Ontario, Canada. **Patients or Other Participants:** The DELPHI database currently encompasses 7,700 patients (23,130 encounters, median age of 48, 56% female). The number of primary care providers contributing to this database is 9 family physicians, 6 nurses and 13 administration staff members. **Outcome Measures:** The primary measures of this study were volume, diagnoses,

referral patterns, quality of diabetes care, comprehensiveness of care and interdisciplinary care. These measures provide details regarding practice workload, variation in diagnoses, referrals patterns, adherence to guidelines, scope of practice and the effectiveness of each primary care team. **Results:** Volume of care provided was 3,853 (number of encounters/month); 745 patients were deemed to have been diagnosed with diabetes, 1,570 with asthma, 1,240 with depression and 2,441 with hypertension; the five most common referrals were to ear/nose/throat specialists, obstetrics/gynecology, general surgery, orthopaedic surgery, and dermatology. The percentage of patients for whom measurements were taken in compliance with Canadian Diabetes Association guidelines was 22% for hemoglobin A1C, 23% for blood pressure and 8% for weight. **Conclusions:** The results of this study illustrate how measures of primary health care may be built on data from “off the shelf” electronic medical records.

RESEARCH CAPACITY BUILDING (PS180-PS186)

PS180-Formation of Researchers in Family Medicine: The Relationship of Tutor- Resident in the Mentoring Process

Ponce-Rosas, Efren, National Autonomus University of Mexico; Gómez-Clavelina, Francisco J; Irigoyen-Coria, Arnulfo E; Navarro-Garcia, Ana María; Landgrave-Ibañez, Silvia

Context: The formation of investigators in family medicine is a very important strategy to consolidate this medical specialization in Mexico. The relationship tutor-resident that takes place in the tutorship in investigation is an element not well studied in our country. **Objective:** To identify the characteristics of the relationship tutor- resident during the mentorship process for investigation on the family medicine residence. **Design:** Descriptive, cross sectional study. **Setting:** Department of Family Medicine, School of Medicine, National University of Mexico. **Participants:** Residents (n= 117) of the specialization course in family medicine belonging to five school cycles (2001 - 2005). **Instrument:** Questionnaire with 12 closed questions that evaluated the characteristics of the relationship tutor-resident by means of a Likert scale of six levels: Total agreement = 5 and total disagreement = 0. **Outcome Measures:** Positive aspects: Trust, communication, effectiveness, kindness and academic relationship between tutor and resident. Negative aspects: Aggressiveness, dishonesty, motivation problems, unproductiveness, communication problems and academic relationship between tutor and resident. **Results:** Residents (91%) said that good communication, trust, kindness and an appropriate relationship tutor-resident were the most important aspects for the tutorship in investigation; (binomial test, $p < 0.001$). Also, the residents (83%) said that it should not have aggressiveness, dishonesty, motivation problems, unproductiveness, communication problems and

relationship between tutor and resident; (binomial test, $p < 0.001$). **Conclusions:** This is the first study where become evident the characteristics that should have the relationship tutor - resident in the mentoring process in investigation of the residence in family medicine. These elements must be studied deeply and in other scenarios to evaluate their consistency.

PS181-The TAPS (Threats to Australian Patient Safety) Project- GP Registrars' Perspective

Stromer, Simone, University of Sydney; Makeham, Meredith; Saltman, Deborah; Kidd, Michael

Context: There is no work conducted to date on the attitudes towards and practices of doctors in training for family practice in Australia (Registrars) regarding medical errors. Registrars like all Family physicians, need to acknowledge that the system is prone to error, and that they can work towards reducing errors by targeting high risk areas. **Objective:** To explore Registrars' attitudes and experiences in reporting medical errors in their daily clinical practice using a web-based tool. **Design:** Focus groups were held. “Error” was defined as an event in practice which makes Registrars conclude: “that was a threat to patient well-being and should not happen”. Data was analyzed into themes. This analysis shaped an error reporting questionnaire. **Setting/ Participants:** Registrars working in private clinics in Australia were invited to participate. 18 Registrars participated in 3 focus group interviews. **Outcome Measures:** Different types of perspectives of the definition of “error” and error reporting experiences held by Registrars. **Results:** Registrars' experiences with medical errors were classified into 4 groups: error recognized with/without reporting to supervisor/patient, error recognized with clinic team discussion, error recognized with no action and someone else's error recognized with no action. A variety of definitions of “error” were held by Registrars. Barriers to error reporting eg: uncertainty about what to report and lack of a generic system for reporting in family practice, were identified. A web- based error reporting questionnaire was established for Registrars to anonymously report errors. **Conclusions:** This project will allow policy makers and educators to generate evidence-based guidelines and standards for reporting errors. With self-awareness, Registrars can improve their capacity to recognize and manage actual and potential threats to patient safety.

PS182-The RECAP Project: Improving Research Capacity and Dissemination in Primary Care Health Services Research in Canada

Hogan, Kelly, Elisabeth Bruyère Research Institute; Barclay, Kevin; Geneau, Robert; Hogg, William; Liddy, Clare; Russell, Grant

Context: Canada has joined an international movement to broaden the scope and influence of primary health care in the health care system. This has led to a surge in capacity building initiatives in primary care health services research. **Objectives:** 1) to examine research capacity building in primary care health services research; 2) to assess the current methods used

for research dissemination; and 3) to recommend strategies to improve research uptake in policy communities. **Design:** A narrative review of national and international literature, four regional meetings held across Canada, and 35 semi-structured interviews with key informants in the field, conducted in English and French, audio-taped, transcribed and analyzed. **Setting:** Canada. **Participants:** Canadian and international researchers, policy makers and funders of research. **Anticipated Results:** The interview data will inform 'next steps' toward improving capacity building and dissemination strategies in primary care health services research. Data analysis will be completed by September 2006. **Conclusion:** The tools designed for this study create linkages between the parties involved in capacity building and dissemination in primary care health services research. Additional work to adopt and implement the recommendations of study is required to assure that capacity building initiatives further the development and uptake of primary care health services research.

PS183-Development of an Interdisciplinary & Teaching Medical & Dental Clinic for Inner-city Street Youth

Rowan, Margo; Mason, Melanie; Lambert Tocchi, Cathy; Robitaille, Annie

Context: The health of street youth is an important concern in North America. This population is more vulnerable to poor health as a result of the dangerous and stressful environments in which they live in, yet they have limited access to health care services. Furthermore, medical residents need more hands-on training experiences in delivering primary care services to youth. **Objective:** The primary objective of this study is to provide accessible, coordinated, comprehensive health and dental care to vulnerable adolescents not presently receiving primary health care services. A secondary objective is to model and teach interdisciplinary adolescent care to undergraduate medical students, family medicine residents and dental hygiene students. **Design:** Non-randomized, mixed method design involving qualitative methods (interviews and focus groups) as well as quantitative information (surveys and electronic medical records (EMR) data). **Participants:** A sample of seven family medical residents, 55 dental hygiene students and 110 street youth were included in the study. **Setting:** Primary care center. **Intervention:** Interdisciplinary & teaching medical and dental clinic for inner-city street youth. **Results:** 268 medical and 85 dental visits were made by street youth. The majority of youth perceived having better access to health care services but nevertheless had suggestions for improvement. There was a positive change in mean level of agreement for personal learning items for 10/12 items for medical residents and 12/12 items for dental hygiene students. The individual help from the attending physicians and in class discussions/debriefings with the dental hygiene supervisor were ranked most helpful. **Conclusions:** This clinic provided improved access to health care for street youth. It was beneficial to students as a

community based learning vehicle and could be replicated elsewhere with a combination of family medicine residency and dental hygiene training programs.

PS184-Frequency of Drug Interactions Among Primary Care Patients at a Family Medicine Residency Clinic

Stephens, Mary; Kukulka, Gary, East Tennessee State University; Fox, Beth

Context: The majority of outpatient primary care visits surround the use of prescription medications. Despite an increased awareness about the harms associated with medication use, not enough is known about the scope and epidemiology of drug interactions in a primary care outpatient setting. Increased awareness may lead to a decrease in preventable adverse drug events. **Objective:** Using data from a study assessing the accuracy of medication records in a family medicine residency, we sought to determine the frequency and severity of clinically significant drug interactions. **Design:** Secondary data analysis of a cross-sectional study assessing prescription and over-the-counter medication use through bottle review and semi-structured interviews. **Setting:** Outpatient family medicine residency clinic. **Patients:** Non-pregnant adults. **Outcome Measures:** Frequency of moderate or severe drug interactions or contraindicated drug combinations as assessed by a free web-based interaction program. Two independent physician reviewers retrospectively reviewed the interactions to assess their clinical importance. **Results:** 102 out of 157 patients interviewed were found to have drug interactions classified as moderate, severe or contraindicated by the drug interaction software. The mean number of interactions per patient was 1.64 and the range was 0 to 11. The physician reviewers determined that while the majority of drug interactions did not necessitate a change in therapy, they probably warranted patient counseling or monitoring by the physician. The reviewers also determined that the software did not detect therapeutic duplications. **Conclusions:** In this study, drug interactions were common in a family medicine residency clinic. Awareness of these interactions has the potential to affect physician prescribing behaviors and patient counseling related to both prescription and over-the-counter medications. Even with the use of technology such as drug interaction software, primary care health care providers still need to make independent, informed assessments of the medications their patients are taking. These results may impact residency training.

PS185-Building Research Capacity by Asking Healthcare Provider Organizations for Research Questions

Baverstock, Jenny, University of Southampton; Leydon, Gerry; Moore, Michael; Kendrick, Tony

Context: Primary healthcare providers in the UK, Primary Care Trusts (PCTs), face complex challenges to meet service delivery targets. PCTs are required to support research and to work in evidence-based ways, however, a lack of resources and incentives means that research is often viewed as

peripheral. UK Primary Care Research Networks (PCRN), including the Wessex Research Network (WReN), have a role in building research capacity in primary care within UK National Health Service healthcare providers. **Objective:** To widen involvement of PCTs in research and develop an effective system with healthcare providers where research questions relevant to healthcare delivery can be developed. **Design:** Annual call to research leads, Chief Executives and research interested staff at 19 PCTs to propose organization-relevant research questions; WReN network staff shortlist and develop questions based on frequently asked or researchable questions; fundable research studies developed from appropriate questions. **Setting:** Healthcare providers (PCTs) in Southern England. **Participants:** Staff at Primary Care Trusts. **Results:** A raised awareness of research in PCTs; provision of a research advisory service to healthcare providers; and the development of two funded research projects on out-of-hours services. The NHS research commissioning program on Service Delivery and Organization has commissioned projects in line with some research question themes. The process has been refined by addressing a number of issues: (1) Capacity issues for answering questions; (2) Ownership of research questions; (3) Streamlining information-gathering systems from PCTs; (4) Iteration to refine the question; (5) Relevance to the NHS research commissioning programs; and (6) PCT implementation, satisfaction and the slow pace of research. **Conclusions:** This process is an effective system for engaging primary healthcare providers in research which may be applicable in other healthcare settings.

PS186-Content and Context of a Research Registry For Primary Care

Janosky, Janine, University of Pittsburgh; Laird, Susan; West, Candace; Sun, Qing

Context: There is a dearth of evidence relative to the care delivered regarding content and context of primary care practices. Despite the growing utilization of disease-specific registries there is a paucity of primary care registries that may illuminate the content and context of primary care practices to enable physicians to improve the quality of care and outcomes for patients. **Objective:** Examine self-reported current and past conditions of a primary care underserved population. **Design:** Analysis of the content and context of a primary care research registry for chronic conditions. **Setting:** Primary care community-based physician practices. **Patients:** Past, current, and family history of chronic conditions are available for 1820 underserved primary care patients. **Intervention/Instrument:** Patients complete a brief medical history questionnaire that includes their self-reported demographic information, current and past medical conditions, current medications, and family history of selected medical conditions, and release for full access to their medical records. This study design has been approved by the University of Pittsburgh Institutional Review Board (IRB). **Outcomes:** Prevalence of chronic conditions, by

demographics and primary care delivery variables. **Results:** In general, this is a relatively healthy patient population. Even though a majority of the population is underserved, these results suggest that the recorded frequency of conditions are similar to those found in the most frequent diagnostic clusters reported in literature for primary care visits. **Conclusions:** These data are relevant not only as a measure of prevalence of conditions seen in primary care practices, but perhaps more importantly as a measure of the prevention of chronic diseases. The collection of personal medical history and current medical information in the research registry allows for a unique opportunity to assist physicians and researchers in the evaluation of certain clinical measures that may be used in the prevention of certain chronic diseases that disproportionately affect the underserved.

WOMEN'S HEALTH ISSUES/GYNECOLOGY (PS187-PS206)

PS187-Integration of Early Abortion Services Into Primary Care: Acceptability Survey of Female Patients

Rubin, Susan, Montefiore Medical Center/Albert Einstein College of Medicine; Godfrey, Emily

Context: Early induced abortion is one of the most common surgical procedures in the US. Integration of early abortion care within primary care would allow women to obtain these services in a familiar environment with a clinician they trust, could improve follow-up with contraception and continuity of care. Patient preferences for receiving early abortion services within primary care are not well documented. **Objectives:** To explore the acceptability to women of the provision of early abortion services by their primary care physician (PCP) in the primary care office. **Design:** Face-to-face mixed method surveys. **Setting:** Urban, inner-city family medicine clinic. **Participants:** Convenience sample of women aged 18-45 seeking services for whatever reason at a primary care office. **Instrument:** Mixed methods survey. **Main and secondary outcomes measured:** To determine: 1. Whether women would prefer to have an abortion with their PCP and if so, why; and 2. How women feel about the provision of abortions in their primary care office. **Results:** 148 women (mean age 30.4 years) completed the survey. The mean duration our sample had been patients in the clinic was 4.8 years, and with their current PCP was 3.8 years. Seventy percent of women thought their primary clinic should provide medication abortion. Only 47% thought their clinic should provide suction abortion. There was support for the perceived safety and ease of the medication procedure. Of those who, if in the situation, may choose to have an abortion, 73% would prefer to have it done with their PCP; 25% would prefer a free-standing, high volume abortion clinic. The most commonly cited reason for choosing abortion with their PCP was comfort. Expertise was the reason most cited to choose abortion at an abortion clinic. **Conclusions:** Increasing options for abortion provision, with integration of abortion services in the primary care setting, appears acceptable to the majority of female patients.

PS188-A Longitudinal Study of Premenstrual Syndrome and Risk Factors in Nursing Graduates

Xu, Yinghui, *The University of Iowa*; Hartz, Arthur; Levy, Barcey; Johnson, Susan; Noyes, Russell

Context: Premenstrual syndrome (PMS) is an important problem that is infrequently investigated and poorly understood. Identification of risk factors for PMS may guide subsequent research on etiology and treatment. **Objectives:** To evaluate PMS risk factors. **Design:** Graduates from a nursing school in 1963, 1964, 1965, 1969, 1974, 1979 and students in 1984 were surveyed in 1985 and 1991 about the following characteristics: demographics, menstrual and gynecological characteristics, chronic medical conditions, and PMS syndromes. Univariate and regression analysis were used to test associations. **Setting:** A single College of Nursing in the Midwest. **Participants:** 337 subjects who completed both surveys, were menstruating in both time periods, and did not have endometriosis, polycystic ovary disease, or any cancer. **Instrument:** The premenstrual assessment form (PAF), a 95 item questionnaire about psychological, physical and behavioral premenstrual syndromes. **Outcome Measures:** Sum of scores of questions from the PAF questionnaire, changes in PAF responses from 1985 to 1991, and a question about whether PMS frequently interfered with work. **Results:** PMS frequently interfered with work for 10.7% of the subjects in 1985, and 5.0% in 1991 ($P < 0.0001$). The 1991 PAF score had statistically significant univariate associations with younger age ($P = 0.0166$), migraine headaches ($P = 0.0467$), depression history ($P = 0.0064$), sleep difficulties ($P < 0.001$), and several indications of health worry. Characteristics independently associated with changes in PAF scores over a six year period included baseline PAF score ($P < 0.0001$), worry about mental problems ($P < 0.0001$), worry about having serious illness ($P = 0.0038$), and difficulty falling sleep ($P = 0.0323$). **Conclusions:** PMS and changes in PMS are associated with worry about mental problems, worry about serious illness, and sleep difficulties. Whether PMS is a cause or consequence of these problems, the association is important and should be explored.

PS189-The Impact of Liquid-based Pap Smears on Colposcopy Training

Williams, Roxanne, *Florida Hospital*; Keehbauch, Jennifer; Le, Lynn

Context: New Bethesda guidelines were published in 2001 advocating the use of liquid-based pap smears to improve triage of atypical pap smears (ASCUS). If Human Papilloma Virus (HPV) testing does not reveal a high-risk sub-type, colposcopy is not indicated. This eliminates the need for colposcopy in 43% of women with ASC-US pap smears. Using Reflex HPV testing could result in reducing the number of colposcopies performed at a residency training program. The American Society for Cervical Colposcopy and Pathology (ASCCP) recommends a minimum of 25 colposcopies to achieve basic level of proficiency.

Reduction in colposcopy volume may produce inadequate volume to properly train residents in family medicine programs. **Objective:** To determine impact on the number of colposcopies performed utilizing liquid-based pap smear and reflex HPV sub-typing. **Design:** Time series. **Setting:** Community based family medicine residency clinic. **Participants:** Review of all conventional and liquid-based pap smears obtained from January 1, 2000 to December 31, 2005 using hand counted records to determine frequency of abnormal pap smears. Report total colposcopies performed during that time using a report generated from the electronic medical record (EMR). Patients identified with abnormal pap smears from January 1, 2001 to December 31, 2003 will have their EMR reviewed for secondary outcome data. **Exclusion:** Patients lost to follow-up or referred to an outside gynecologist. **Intervention:** During 2002, we switched from predominant use of conventional pap smear to absolute use of liquid-based pap smears. **Outcome Measures:** Main: The number of colposcopies performed per abnormal pap smear annually. Secondary: The prevalence of abnormal pap smears and adherence to pap smear management guidelines, the frequency of biopsy confirmed dysplasia comparing liquid-based and conventional pap smears. **Anticipated Results:** The frequency of abnormal pap smears will remain constant over the 5 year period while the number of colposcopies will decrease.

PS190-Recognition of Overweight Children Utilizing Electronic Medical Records

Keehbauch, Jennifer, *Florida Hospital*; Crussiah, Tania; Philip, Celeste

Context: Obesity and overweight children has risen at alarming rates over the past two decades. The rates increased 100% from 1980-1994. According to 2001 data from the National Center for Health Statistics, 13-14% of children age 6-17 are considered to be overweight. In previous literature, pediatric practitioners recognize only 29% of their overweight population. An electronic medical record (EMR) system may help physicians identify overweight children better than traditional medical records. Improved recognition of overweight children will facilitate appropriate evaluation and treatment. **Objective:** 1) to determine the percentage of overweight children correctly diagnosed, documented, and evaluated; and 2) to assess the impact of electronic medical records on the recognition of overweight children by physicians. **Design:** Cross-sectional. **Setting:** Two sister community-based family medicine residency clinics. Patients 300 pediatric patients by systematic selection of the 7th patient from an electronically generated list of patients age 2-17 seen within the past year. 150 patients reviewed from each clinic site. If data is incomplete with the selected patient, then systematic selection of an alternative patient with complete data will be selected. **Exclusion:** Lack of documentation of height, age less than 2 or greater than 17 years. **Intervention:** Implementation of an upgraded EMR system which will calculate pediatric patient's BMI percentile, and a 1 hour

training session on how to obtain the calculated BMI percentile from the EMR. Main and Secondary Outcomes: Main: The incidence of overweight and at risk for overweight children in our clinics. The percentage of overweight children correctly identified. Secondary: The percentage of overweight children appropriately evaluated and referred. The demographic characteristics of our overweight children. Anticipated Results: The diagnosis of overweight children will be under recognized. The identification of overweight children will be increased with the implementation of an EMR system which aids in calculation of BMI percentiles.

PS191-Evaluating a Three-hour Breastfeeding Course for Practicing Physicians

Feldman, Perle, SMBD Jewish General Hospital; Graves, Lisa; Srinivasan, Anjana

Context: The promotion and support of breastfeeding is an important public health measure. In order to participate in the World Health Organization's Baby-Friendly Initiative, physicians must have at least three hours of breastfeeding education. Since no course catering to physicians exists in Canada to our knowledge, a three-hour breastfeeding course was developed and piloted on March 29th, 2006. The course is aimed towards physicians who have any contact with breastfeeding and pregnant women. Primary care physicians, being on the front lines of health care, form a large part of this group. Objective: To evaluate a pilot breastfeeding course for physicians. Design: Explorative qualitative and quantitative study. Setting: The pilot course was offered to family physicians associated with the Herzl Family Practice Center, situated in the SMBD Jewish General Hospital, Montreal. Invitations were also extended to members of the hospital's Breastfeeding Committee, members of the Breastfeeding Committee for Canada, and health care professionals associated with physicians at the Herzl Center. Patients or Other Participants: Twenty-six participants attended the pilot course on March 29th 2006. Of those, 12 were family physicians, 1 was a pediatrician, 3 were lactation consultants, 1 was a peer-support worker, and 3 did not indicate their profession. Intervention/Instrument: The course was an overview of the main issues seen in breastfeeding mother-infant dyads, as well as how to protect, promote, and support breastfeeding. Main and Secondary Outcome Measures: Content analysis of themes from the evaluation questionnaires and transcripts of interviews of selected participants will be used to assess the effectiveness of the course, and to make necessary improvements to allow it to cater to a national audience. Results and Conclusions: This research is still in progress. Anticipated results include constructive suggestions to improve the course and make it more effective for a wider audience.

PS192-Seasonal Variation in Postpartum Depression

Panthangi, Veena, St John Hospital and Medical Center; West, Patricia

Context: Postpartum Depression (PPD) occurs in the first 6 months after delivery in 10-20% of mothers. Despite the availability of screening tools, there is a general consensus that PPD is under diagnosed. The Edinburg Postpartum Depression Scale (EPDS) is a well-validated tool shown to be highly effective in detecting PPD. Context: To assess whether there is a seasonal variation in PPD using the EPDS. Design: This was a cross-sectional study conducted at two family medicine clinics and an OB/GYN clinic, over a period of 2 years. Mothers who gave consent were asked to fill out a questionnaire during their 5-8 wk postpartum visit. The first part of the questionnaire requested demographic data. The second part was the 10 question EPDS. A score ≥ 13 on the EPDS indicated PPD. Results: 505 subjects were approached, 500 recruited (response rate=99%) and 498 completed the EPDS. 18.9% scored ≥ 13 on the EPDS. 18.7% of subjects were depressed who were tested during winter (Dec-Feb), 19.2% during spring (March-May), 15.8% during summer (June-Aug), and 21.3% during fall (Sept-Nov); Chi Square, $P=.741$). Mothers with very good or excellent support at home had lower rates of PPD (12.8%) than mothers with just adequate support (44.4%), or very little or no support (35.7%; $p < .0005$). Mothers who scored 16.7 ± 3.0 vs. 4.8 ± 3.7 on the EPDS had smaller babies (BW 3046.8 ± 817.0 grams vs. 3272.4 ± 719.9 g; t-test, $P=.008$) who received special care at a higher rate (25.0% vs. 16.1%; $P=.032$). These mothers were of higher gravidity (2.9 ± 2.4 vs. 1.9 ± 2.0 ; $p < .0005$) and parity (2.4 ± 1.8 vs. 1.5 ± 1.4 ; $p < .0005$). A greater proportion of women with prior history of depression (36.0% vs. 9.8%; $n=71$) or currently taking anti-depressants (14.0% vs. 2.2%; $n=22$) had PPD ($p < .0005$). Conclusion: Although we found no evidence of variation in PPD with the season, multi-gravidity, history of depression, currently taking anti-depressants, and social stressors accompanied an increased PPD rate in this study.

PS193-Doulas' Views Toward Birthing Practices, Their Profession, Interaction With, and Acceptance by Other Providers

Eftekhary Shirkoohy, Sahba, The University of British Columbia; Klein, Michael C.; Xu, Shi Yi (Sally)

Context: Doulas are new maternity care providers whose integration into health care system needs to be understood. Objective: Examine attitudes/practices/motivations doulas towards birth and interactions with other providers. Design: Survey. Participants: Doulas all Canadian provinces. Instrument: Questionnaire. Outcome Measures: Doulas' attitudes, practices, motivations, interactions with, acceptance by providers, overall satisfaction. Results: 212/407 (response rate 55.7%). 87.8% work in community/hospital with specialist support. Reasons becoming doula: 89.6% to support women, 73.6% personal interest, 21.7% earn money.

Experience mean 5.12 years. 98.5% rated good-excellent experience (mean 4.61). 76% plan continue work because: 97.1% enjoy supporting women, 85.9% enjoy work, 78.2% “attending birth is privilege.” 5% plan to discontinue doula work because: 50% on-call requirements, 43.5% difficulties balancing family obligations. Would continue as doula if 3rd party support (78.1%), better recognition (67.3%), higher compensation (51%). Number births supported last 12 months mean 8.63 births. Likert scales 1=strongly disagree—5 strongly agree. Doulas more in favor home (mean 3.84) than hospital births (mean 3.16), but only 17.6% do not attend home births. Encourage clients to limit episiotomy (66%), delay cord clamping (40.1%), try non-pharmaceutical forms pain relief before epidural (75.9%). Attitudes: “elective caesarean section is women’s right” (mean 2.31), epidural analgesia early in labor increases caesarean rate (mean 4.1), episiotomy prevents pelvic floor relaxation (mean 1.39), childbirth only “normal in retrospect” (mean 2.1). Feel more accepted by midwives (mean 4.25) than obstetricians (mean 3.37), family physicians (mean 3.71), nurses (mean 3.59), hospital administration (mean 3.18). 67% no conflict with providers. Doulas excluded from birth: 32.1% by providers, 47.1% by administrative regulations. Overall experience as doula varies by number births they had themselves (p 0.03), how accepted feel by obstetricians (p 0.001), family physicians (p 0.012), hospital administration (p 0.015). **Conclusion:** Doulas are adapting well to a complex system. Need support. They hold non-interventionistic views.

PS194-Overcoming Barriers to Osteoporosis Follow-up for Patients After a Low-trauma Fracture: A Qualitative Study

Singh, Sonia, Peace Arch Hospital; Boston, Patricia; Foster, Ramona

Context: Low trauma fractures are associated with osteoporosis and a high risk of future fractures. Despite effective treatments to prevent these fractures, fewer than 30% of patients presenting with low-trauma fractures receive osteoporosis follow-up or treatment. Given the high patient morbidity and health care costs associated with these fractures, it is imperative that strategies be developed to implement effective prevention strategies and close the current gap in care for osteoporosis. Community based interventions to improve osteoporosis care have not been well studied. **Objective:** Primary: To better understand the barriers to providing effective osteoporosis follow-up and treatment to patients after a low trauma fracture. Secondary: To use the information gathered to develop a community based intervention for osteoporosis follow-up after low-trauma fracture. **Design:** Qualitative study involving one-on-one interviews and focus groups. **Setting:** Suburban community of White Rock /South Surrey, British Columbia, Canada. Previous survey study in this community demonstrated that less than 35% of patients received osteoporosis follow-up after a low trauma fracture.

Participants: People either affected by osteoporosis or involved in osteoporosis management such as: physicians, emergency department and ambulance staff, rehabilitation and geriatric services, patients with low trauma fractures, homecare staff and community representatives (community pharmacists, rehabilitation providers, nurses, municipal workers) **Results:** Preliminary analysis of the one-on-one interviews suggests that there is little discussion between patients and health care providers about osteoporosis or future fracture risk after a low trauma fracture. Analysis of family physician interviews and focus groups is anticipated to identify themes around current osteoporosis management and barriers to providing osteoporosis follow-up. **Conclusions:** Understanding the barriers to osteoporosis follow-up after low trauma fracture is the first step in developing community based strategies to overcome these barriers in a practical and economically feasible manner.

PS195-Disease Burden of Women and Mental Health Utilization in the Veterans Health Administration

Chatterjee, Sharmila, Boston University; Rosen, Amy; Montez, Maria; Culpepper, Larry; Sloan, Kevin

Context: Little data exist on women’s use of health services for mental health conditions. Women have a higher prevalence of conditions such as depression and may seek more outpatient and less specialty care than men. Thus, differential patterns of utilization are an important issue for primary care. The Veterans Health Administration provides an opportunity to study a group of women with a relatively high burden of mental illness and access to a variety of primary care and mental health services. **Objective:** To characterize the mental health disease burden of a national sample of women veterans and to analyze the effect of gender on patterns of mental health service utilization. **Design:** Retrospective cross-sectional analysis of a national administrative database. A newly developed risk adjustment tool (PsyCMS) was used to group mental illness by severity. Utilization categories were created by further division into primary versus specialty mental health care, receipt of substance abuse services and type of service (group versus individual). **Setting:** Veterans Health Administration. Patients: Inclusion criteria: patients who received any health care (at least one visit) in the Veterans Health Administration during fiscal year 1999, associated with a mental health or substance abuse diagnosis (ICD-9 codes 290 through 312.9 or 316-316.99). Exclusion criteria: non-veterans (family members/employees), dental or telephone visits only and age <18 years. N= 914,255 total, including 866,022 men and 48,203 women. **Outcome Measures:** Gender specific and age-stratified prevalence data for each mental health disease category in the risk adjustment system (PsyCMS) and gender specific patterns of outpatient and inpatient utilization, characterized by frequencies of visits in each utilization category. **Results:** Anticipate differences by gender in burden of disease and subsequent utilization of mental health and primary care services. **Conclusions:** Planning mental health services for women may require taking

into account differential burden of disease and specialty utilization.

PS196-Analysis of Planned, Unplanned, and Teen Pregnancies at the Capital Region Family Health Center, August 2003 through December 2005

Anderson, Kristin, Dartmouth; Council, Lora; Rechisky, Amanda; Geffken, Dominic

Context: The staff of the Capital Region Family Health Center (CRFHC) has anecdotal evidence that the populations served experience high rates of unplanned pregnancy in our teenage population. **Objective:** To understand variation in unplanned pregnancy at the CRFHC. **Design:** Population based Quality Improvement Project. **Setting:** The CRFHC serves noninsured and underinsured patient populations in Concord and Hillsboro, NH. Patients: Women at the CRFHC who present for pre-natal care will be the focus of study. **Instrument:** Individual value with Moving Range (XmR) charts and Proportion (P) charts were created using statistical process control (SPC). **Main Outcomes:** SPC rules were used to detect unassignable (common cause) and assignable (special cause) variation. **Results:** The mean number of total and unplanned pregnancies was 20 and 13 per month, respectively. Monthly aggregate data shows special cause variation in August. For women with a history of abuse and unplanned pregnancy, May 2005 has a special cause. In the planned pregnancy group, there are more months where no alcohol history is documented, whereas this does not occur at all in the unplanned population. The mean percent of smokers was 42% and 56% in planned and unplanned pregnancies, respectively. An analysis of the means shows a statistically significant difference between means. A trend occurred indicating a correlation between planned pregnancy and tobacco avoidance. **Conclusions:** The number of pregnancies, unplanned pregnancies and teen pregnancies were stable processes during the study period. When the data is averaged by month, August does have a special cause variation with an unexpectedly high number of unplanned pregnancies. Future improvement initiatives may focus on teen pregnancy prevention targeting the summer months, teens with a history of abuse and women who smoke.

PS197-Vitamin D Deficiency in Elderly African-American Women

Context: Darker skin pigmentation and aging are known factors influencing the body's ability to synthesize adequate amounts of Vitamin D. The usual sun exposure in the southern United States may not be sufficient to maintain adequate vitamin D levels in elderly African-American women. Additionally, supplementation of Vitamin D 400 IU/d may not be adequate to prevent Vitamin D deficiency which in turn could lead to calcium deficiency and possibly sub-clinical hyperparathyroidism. **Objective:** To determine the incidence of vitamin D deficiency in elderly African-American females in a Southern latitude before and after

vitamin D supplementation. **Design:** Observational, cohort pilot study. 60 patients aged 70 or older who do not have disorders that may affect Vitamin D and calcium absorption/metabolism are enrolled. Patients have two scheduled office visits. The first visits are ongoing during the month of April. Demographic data is being collected with attention to dietary intake of calcium and vitamin D, and the patient's customary degree of sun exposure. Serum calcium, vitamin D, intact PTH and serum CTX are measured initially and are repeated 6 weeks later. All patients are given 1000 mg Calcium with 400 IU of Vitamin D orally for 6 weeks without making any change in diet or sun exposure recommendations. **Outcome Measures:** Main: Incidence of vitamin D deficiency in elderly African- American women in a Southern latitude. Secondary: Statistical analysis will be performed as to the effect(s) of ethnicity, age, diet, and sun exposure as related to serum calcium, vitamin D, intact PTH and serum CTX. **Results:** Research in progress. **Conclusions:** We will document the incidence of vitamin D deficiency in our study population. We will determine whether 400IU/day of vitamin D orally is sufficient to reverse this deficiency at a time of year when our subjects should be getting more sun exposure.

PS198-Vaginitis of Unknown Etiology

Aslam, Uzma, Beth Israel Medical Center; Cohrssen, Andreas; Karasz, Alison; Anderson, Matthew

Context: Vaginal complaints are a common problem in primary care accounting for 10 million visits annually. Despite comprehensive microbiological assessment 25-50 % of cases remain undiagnosed. Therefore other contributing factors must play a role in the development of vaginal complaints. Vaginal symptoms are often associated with anxiety and effect on social and sexual functioning. The role of psychosocial factors in the contribution of vaginal complaints has not been well studied in primary care. **Objective:** To explore the relationship between psychosocial factors and the presence or absence of a definitive microbiological diagnosis of vaginal complaints. **Design:** Cross-sectional observational study. 1. Hypothesis generating: Qualitative exploration of patients' explanatory models of their vaginal discharge. 2. Hypothesis testing: Examine correlation between presence or absence of a definitive diagnosis of vaginal symptoms and measures of psychosocial distress. **Participants and Setting:** Women between ages of 18 to 45 presenting with vaginal complaints in an academic urban primary care clinic. Enrollment: From Jan 13 to June 10, 2006. Instruments: The Patient Health Questionnaire (PHQ), a self administered screening scale for common mental disorders in primary care. Vaginal Symptom Scale. **Outcome Measures:** Quantitative: Measures of psychosocial distress. Absence or presence of a microbiological diagnosis for vaginal symptoms. Qualitative: Collected data on explanatory models of vaginal complaints using semi-structured interviews. **Results:** As of April 7 we have enrolled 30 patients. 76% had a diagnosis on microscopy and 24 % of patients did not have a diagnosis despite culture. Evolving trends: Most patients perceive vaginitis as serious

condition and experience anxiety about STD, unprotected sex with impact on social and sexual functioning. Patients define normal vaginal discharge as thin, colorless, with no itching, irritation or odor. **Conclusion:** This study will give new insight into the cause of unexplained vaginal symptoms and the underlying concerns of women with vaginitis.

PS199-Transfer of Care in Ectopic Pregnancy

Stulberg, Debra, University of Chicago

Context: Ectopic pregnancy causes an estimated 15% of all pregnancy-related deaths, and leads all causes of first trimester maternal mortality in the United States. Defined as implantation of the embryo outside the uterus, ectopic pregnancy threatens the pregnant woman's life because of its incumbent risk of rupture and catastrophic hemorrhage. Despite this risk, it is not uncommon for patients to present to the University of Chicago Hospital having been diagnosed with ectopic pregnancy at another healthcare facility and transferred or discharged without definitive treatment. The circumstances and processes behind these transfers are not well understood, nor are their outcomes. Anecdotal reports suggest that religious proscriptions on some treatments for ectopic pregnancy may contribute to providers' decisions to transfer care. **Objective:** This study aims to explore the clinical and communications processes that lead to discharges or transfers that may put ectopic pregnancy patients at unnecessary medical risk. **Design:** The project is a qualitative study using in-depth semi-structured interviews and review of medical records to explore patients' experiences with the transfer/discharge decision. **Setting:** Emergency department, in-patient, and out-patient sites of a large urban medical center. **Patients:** Adult women treated at the University of Chicago for possible or definite ectopic pregnancy. **Instrument:** A chart data-abstraction tool and an open-ended interview schedule have been developed for this study. **Outcome Measures:** The primary outcomes are patients' reported perceptions of the communication with their doctors, of medical and ethical decision-making, and of their medical options. Other outcomes of interest include the clinical outcomes of their pregnancies, as recorded in the medical record and reported by the patient.

PS200-Are Reminder Letters Useful to Primary Care Patients Due or Overdue for Pap Test Screening?

Karwalajtys, Tina, McMaster University; Anderson, Kelly; Roder, Stefanie; Laryea, Stephanie; Lohfeld, Lynne; Goeree, Ron; Donald, Faith; Burgess, Kenneth; Sebaldt, Rolf J.; Kaczorowski, Janusz

Context: Although reminder letters have been shown to improve uptake of preventive screening, few studies have examined patient perspectives on reminders in family practice. **Objective:** To explore women's perspectives on the acceptability, content, and impact on screening intentions of reminder letters for Pap tests in family practice. **Design:** Population-based survey. **Setting:** 23 family practices across Ontario. **Participants:** We randomly selected one physician

from 23 of 24 FHN/PCN networks (n=249 physicians) participating in a demonstration project (P-PROMPT) aimed at increasing the delivery of preventive services. From the physician rosters, we surveyed up to 35 randomly selected women aged 35 to 69 years per practice, who were due or overdue for a Pap test, and had received a reminder letter within six months. **Instrument:** A mailed survey, with a follow-up survey to non-responders six weeks later, solicited women's perspectives on the usefulness of reminder letters and their interest in additional information about Pap tests. **Results:** The overall response rate was 56.4% (423/750), with 7.6% (32/423) of women refusing participation. Respondents had a mean age of 51 years (SD=10). Two-thirds (65.7%, 257/391) of those who completed the survey recalled receiving a reminder letter, and 53.2% (208/390) reported having a Pap test done in the last six months. After receiving the letter, 81.7% (210/257) intended to schedule a test. Of these, 69.0% (145/210) actually made an appointment. Among women who scheduled or had a test, 67.3% (173/257) reported that the letter influenced their decision. The majority of respondents (81.0%; 317/391) indicated that they would like to receive reminder letters for Pap tests from their physician and 34.0% (133/391) indicated that they would like to receive additional information about Pap tests. **Conclusions:** Reminder letters from family physicians were acceptable to this sample of women due or overdue for a Pap test and reportedly encouraged screening.

PS201-Women's Perspectives on the Acceptability of Reminder Letters for Screening Mammography

Roder, Stefanie; Anderson, Kelly; Laryea, Stephanie; Lohfeld, Lynne; Goeree, Ron; Donald, Faith; Burgess, Kenneth; Sebaldt, Rolf J.; Kaczorowski, Janusz; Karwalajtys, Tina, McMaster University

Context: Although evidence has shown that reminder letters improve preventive screening rates, few studies have examined patient's perspectives on reminders in family practice. **Objective:** To explore women's perspectives on the content and acceptability of reminder letters for screening mammography and their effect on screening intentions. **Design:** Population-based survey. **Setting:** 23 family practices across Ontario. **Participants:** We randomly selected one physician from 23 of 24 FHN/PCN networks (n=249 physicians) participating in a demonstration project (P-PROMPT) aimed at increasing the delivery of preventive services. From the physician rosters, we surveyed up to 35 randomly selected women aged 50 to 69 years per practice, who were due or overdue for a screening mammogram, and had received a reminder letter within six months. **Instrument:** A mailed survey, with a follow-up survey to non-responders six weeks later, solicited women's perspectives on the usefulness of reminder letters and their interest in additional information about mammograms. **Results:** The overall response rate was 58.1% (401/690), with 7.7% (31/401) of women refusing participation. Respondents had a mean age of 57 years (SD=6). Of those who completed the survey, 73.0%

(271/370) recalled receiving a reminder letter and 44.5% (165/370) reported having a mammogram in the last six months. After receiving the letter, 72.0% (195/271) indicated they planned to schedule a mammogram, and of these, 68.7% (134/195) actually made an appointment. Among women who scheduled or had a mammogram 59.7% (160/268) reported that the letter influenced their decision. The majority of all respondents (77.0%; 285/370) indicated that they would like to receive or continue to receive reminder letters for mammograms. Only 29.5% (109/370) indicated that they would like to receive additional information about mammograms. **Conclusions:** Reminder letters from family physicians were acceptable in this sample of women due or overdue for a mammogram, and reportedly influenced women's decision to be screened.

PS202-Evaluation of Clinical Decision Rules for the Need to Undergo Bone Mineral Density Testing in Non-Hispanic Black Women

Anders, Michael, University of Arkansas for Medical Sciences; Turner, Lori; Wallace, Lorraine; Spencer, Horace III; Simpson, Don

Context: Osteoporosis clinical decision rules (ie, algorithms) attempt to identify postmenopausal women at greatest risk of low bone mineral density (BMD). **Objective:** To evaluate the discriminatory performance of 3 osteoporosis clinical decision rules—Osteoporosis Self-assessment Tool (OST), Osteoporosis Risk Assessment Index (ORAI), and Age, Body Size, No Estrogen (ABONE)—for prediction of a total hip BMD below the National Osteoporosis Foundation (NOF) treatment threshold (T-score < 2.0). **Design:** Cross-sectional examination of existing data from the Third National Health and Nutrition Examination Survey. **Participants:** Non-Hispanic black women (n=695) aged 50 through 90 years who had a dual energy x-ray absorptiometry (DXA) scan for the total hip and data to apply to the clinical decision rules. **Outcome Measures:** Sensitivity, specificity, positive and negative predictive values (PPV and NPV), positive and negative likelihood ratios (LRP and LRN), and area under the receiver operator characteristic (ROC) curves for each of the 3 decision rules. **Results:** OST had a sensitivity of 88%, specificity of 66%, PPV of 31%, NPV of 97%, LRP of 2.6, and LRN of 0.2. ORAI had a sensitivity of 96%, specificity of 47%, PPV of 25%, NPV of 99%, LRP of 1.8, and LRN of 0.1. ABONE had a sensitivity of 77%, specificity of 64%, PPV of 26%, NPV of 94%, LRP of 2.1, and LRN of 0.4. The area under the ROC curve for the OST was (0.87), compared with the ORAI (0.82) and ABONE (0.77). **Conclusions:** The OST, composed only of age and weight, can be a practical and accurate adjunct for assessment of patients' need to undergo BMD testing and thereby promote timely diagnosis and treatment of low BMD in non-Hispanic black women.

PS203-See Me Now: An Obesity Prevention Project, Community Center of Excellence in Women's Health at Turley Family Health Center

Brown, Joedrecka; Pazder, Nadine; Oyama, Oliver; Garg, Mena; Desautels, Veronique; Sibille, Kimberly, Fielding Graduate University

Context: Obesity, increasing to proportions of a national epidemic, has catastrophic consequences both to the individual and society. Of particular concern is the impact of obesity on women's health and social functioning. Sixty four percent of women are overweight and half of those are obese with an increased prevalence among minority and underserved women. Practical and effective interventions targeted to the special needs of women are needed. With the longitudinal access to obese and at risk populations, primary care physicians are the key providers in addressing obesity and its co-morbidities. **Objectives:** See Me Now is a project that was designed to provide outreach obesity and prevention interventions to underserved women in the community. **Design:** Outcome research study implementing a multi-factorial pre/post design with quantitative and qualitative measures. **Setting:** Primary Care - The National Community Center of Excellence in Women's Health at Turley Family Health Center. **Participants:** Exclusion criteria included uncontrolled chronic diseases, CAD, pregnancy, eating disorders, previous gastric surgery or pharmacotherapy for weight loss. The final sample included culturally diverse, underserved women ages 23 - 76 years with incomes less than \$40,000.00/yr and a BMI > or = 25. **Intervention:** A multi-disciplinary team that provided bi-weekly group sessions focused on education and implementation of nutritional, physical activity, and behavior modification strategies. **Outcome Measures:** 1) 10% reduction in weight 2) 20% increase in participant and provider awareness of obesity as a chronic disease. **Results:** Biometric data did not reflect clinically significant change. Qualitative analysis reflected an increase in physical activity and slight improvement in nutritional choices. **Conclusions:** Obesity reduction and lifestyle change take time. Sustained behavior change has demonstrated health gains. Practical strategies to improve the effectiveness of evidenced based interventions in a community setting are addressed. Future studies further evaluating effective models of care incorporating evidence based interventions into clinical practice are of great importance for primary care providers.

PS204-Attitudes and Beliefs About Emergency Contraception in Patients at MUSC Family Medicine Clinics

Busby, Stephen, Trident Medical Center/MUSC; Campbell, John

Context: Emergency contraception's (EC) major mechanisms of action are preventing ovulation, fertilization, or implantation of an embryo. Product websites and medical journals state that EC is not an abortion pill, and will not work once a woman is pregnant. These are valid statements

according to some medical texts. However, patients who believe fertilization marks the beginning of pregnancy would consider EC to work after pregnancy begins at times, and thus cause abortion. There is currently little research evaluating patients' perception of the terminology used to describe EC and its mechanisms. Such research could improve counseling by primary care providers who prescribe EC. **Objective:** To evaluate patients' understanding of how EC works and identify the demographic variables important to this knowledge. **Design:** Cross-sectional survey developed and pilot tested for appropriate reading level and the ability to analyze results. **Setting:** Primary Care Center. **Participants:** Convenience sample of female patients 18-50 years old. **Outcome Measures:** Patient understanding of pertinent EC terminology was assessed. **Results:** Preliminary data from 146 patient surveys show that 47% believe pregnancy begins when sperm and egg join and 34% considered it an abortion to stop a pregnancy from progressing past this point. Further analysis using SPSS will be conducted after all surveys are completed to determine what demographic factors affect a patients' understanding of how EC works. **Conclusions:** Blanket statements that emergency contraception does not work once a woman is pregnant and does not cause an abortion are misleading to a significant proportion of patients. This study raises serious questions about current informed consent for the use of EC. Future consideration should be focused on improving patient education regarding EC's mechanisms of action.

PS205-The Use of Telephonic Case Management to Improve Screening Mammography Rates in Women With Mental Health and Substance Abuse Issues

Berdine, Diane, University of Buffalo; Krause, Julie; Servoss, Tim

Context: It is well known that annual mammogram screening for women 40 years old and over saves lives and reduces morbidity from breast cancer. Women with mental health and substance abuse issues have additional challenges in receiving this important care. In order to encourage mammography screening a three-phase intervention was devised. Permission from the PCP was obtained to allow the Medicaid managed care organization to send out a letter/referral annually to all women in their practice over 40. Concurrent telephonic case management with one-on-one discussions that either encouraged compliance with annual screening or attempted to determine reasons why such screening was not being done so future interventions can result in continuous quality improvement. **Objective:** To determine the effectiveness of telephonic case management to encourage mammography screening among an underserved population. **Design/Setting/Participants:** Women enrolled in partially capitated Medicaid managed care plan, with behavioral health diagnoses aged 40 and older were sent a referral to area Medicaid participating mammogram facilities. **Intervention:** Telephonic Case management.

Outcome Measure: The percentage of women that receive mammograms as a result of telephonic case management. **Results:** Ninety-five percent (95%) of Primary Care Physicians agreed to allow the managed care organization to send out an automated referral letter annually with the other 5% stating it was not necessary as they were performing this function. Prior to this study there was = a 41% incidence of charted evidence of a mammogram. Sixty percent (60%) of women who received telephonic case management scheduled or received mammograms. **Conclusions:** The Gold Choice Telephonic case management model is effective in securing patient compliance in obtaining mammography screening among women with behavioral health diagnoses.

PS206-The Botanica as Broker of Advice and Products for Vaginal Health

Anderson, Matthew; Alvarez, Adelyn; Yukes, Jolene; McKee, M. Diane, Albert Einstein College of Medicine

Context: Vaginal douching is common, but little is known about traditional products or lay advice for douching. Botanicas represent an important source of health advice and products in the immigrant community. **Objectives:** To describe the products and advice provided to inner-city women in botánicas, focusing on vaginal health and douching. **Design:** Qualitative in-depth interviews, conducted in English or Spanish. **Setting:** Bronx and northern Manhattan, New York. **Participants:** Proprietors and employees of 10 retail Botanicas. **Instrument:** The interview guide explored reasons for consultation, products available and rationale for their use. **Results:** Botanicas represent a source of individualized health advice for vaginal health, provided within a broader matrix including issues of menopause, fertility, relationship problems and spirituality. Vaginal cleanliness was stressed; methods of cleansing included frequent soap and water, vaginal steaming, douching, and antibiotics or antifungals, either after menses, to rid of blood or sperm, or in the presence of symptoms. Some viewed douching as a necessary component of vaginal health, others viewed it as potentially dangerous. A theme shared by almost all was the sensitivity of female genitalia. Those who endorsed douching recommended traditional products because of the potential harm from chemicals in commercial douches, or using "measured" amounts of herbs (eg rosewater) or vinegar. Others cited the potential for harm (burning, bleeding, disrupting the balance) as a reason to avoid douching or any other foreign substances. Products are available for cleaning (eg herbs, cuaba), tightening the vagina for pleasure or to hide infidelity (eg alumbre), or to treat infection (eg nystatin). **Conclusions:** Botanicas are an important source of women's health advice and products. This has important implications for clinicians advising women regarding douching.

OBESITY/EXERCISE/NUTRITION (PS207-PS211)

PS207-Access to a Home Bathroom Scale Among Participants in the Get Fit Maryland Project

Alperovitz-Bichell, Kari, University of Maryland; Williams, Anne

Context: Data from the National Weight Loss Registry suggest that many who have lost weight, and kept it off over the long-term, have weighed themselves often as part of their weight management strategy. Therefore, a bathroom scale may be useful self-management tool against obesity. However, whether individuals have access to a bathroom scale, and factors affecting access, have not been well explored. **Objective:** To assess the frequency of access to a scale at home, reasons for lack of access, and associations of home scale access with demographic characteristics. **Design:** Cross-sectional survey. **Setting:** Large urban medical center. **Participants:** Approximately 300 participants registering for Get Fit Maryland, a community-based walking project aimed at improving fitness. All adults were eligible, although most participants were Medical Center and Medical School employees. Each was required to complete a physical activity readiness questionnaire, and attest that they were healthy enough to participate in an exercise program. **Outcome Measures:** Percent of participants having a scale at home; of those not having a scale at home, percent citing as reasons: cost, lack of desire to know weight, and lack of place to purchase a scale. **Anticipated Results:** We anticipate that low SES and minority participants will have less than 50% home scale access, and a decreased odds of scale access compared to those with higher SES. We also anticipate that cost will be frequently cited as a reason for lack of scale access. **Conclusions:** If low SES is associated with lack of access to a home scale among this motivated sample, interventions to improve scale access might be promising as part of a multi-faceted obesity prevention strategy for this group.

PS208-Improving Weight Management Systems of Care at a Community Health Center

Harker, P. Travis, Dartmouth/Concord Hospital; Geffken, Dominic; Rechisky, Amanda; Pope, Tabitha

Context: Overweight and obesity affect 65% of Americans, together are the 2nd actual cause of death, and contribute to the disease burden of diabetes, heart disease, stroke and cancer. Currently 30.5% of Americans are classified as obese; Healthy People 2010 set the goal of reducing the number of adults who are obese. The American College of Preventive Medicine, the American Academy of Family Physicians and other specialty societies advocate physical activity counseling in the primary care setting to address this growing problem. **Objective:** The aim of this quality improvement research project is to improve care for overweight and obese patients including facilitating weight loss through improved diagnosis and treatment patterns of patients with an elevated Body Mass Index (BMI) ≥ 25 at

the Concord Family Health Center. **Design:** Plan-Do-Study-Act (PDSA) quality improvement study. **Setting:** Community health center in Concord, New Hampshire. **Patients:** All non-pregnant active clinic patients age ≥ 18 with an elevated BMI ≥ 25 are included in the study population. Intervention An interdisciplinary team is developing new work patterns and electronic medical record tools to improve care for patients with an elevated BMI. Quality improvement initiatives are focused on increasing identification of BMI ≥ 25 , assessment of readiness for change, weight management plan development and connecting patients to clinic and community weight management resources. **Outcome Measures:** Diagnosis of overweight and obesity, movement through the Stages of Change, resource utilization patterns, presence of a weight loss plan, weight loss/gain, and billing rates for obesity are assessed. **Results:** Anticipated results include improvement in diagnosis rate of elevated BMI, increased presence of weight loss plans and resource utilization, advancement through Stages of Change of patients with weight management plans, weight loss among individuals with a weight loss plan, and increased billing for weight management. **Conclusions:** We will present our experience with implementation of this quality improvement project.

PS210-Recognition and Management of Obesity in Primary Care Practice in Southeastern New England

Eaton, Charles, Memorial Hospital of Rhode Island; Parker, Donna; Roberts, Mary; Lu, Bing; Ahern, David

Context: Obesity is a major public health problem which has reached epidemic proportions in the U.S in the past few years. **Objective:** To describe the identification, management and co-morbid conditions of obese patients in primary care. **Design:** Cross-sectional study. **Setting:** 30 primary care practices in southeastern New England. **Patients:** 4,202 patients, 1379 with obesity (33%). **Outcome Measures:** Diagnosis, co-morbid conditions, medications, referrals, and advice documented by chart audits; also a brief telephone survey of patients was conducted. **Results:** Prevalence of obesity (BMI=30-39.9 kg/m²) was 27.5% and extreme obesity (BMI >40 kg/m²) was 5.3%. Fifty percent of the obese patients were diagnosed with obesity/overweight; 92% of the extremely obese were recommended in 40% of the obese patients and in 61% of extremely obese patients. Recommending increasing physical activity was documented in 55% of the obese patients and in 61% of the extremely obese subjects. Dietary recommendations were noted in 67% of the obese patients and 75% of the extremely obese subjects. Referral to a nutritionist was done in 14% of obese patients and 26% of the extremely obese subjects. Cardiovascular risk factors documented: hypertension (59%), hyperlipidemia (79%), diabetes mellitus (17%) or metabolic syndrome (60%). Of the obese or extremely obese patients, 16% were smokers, 25% reported eating 5 or more servings of fruits and vegetables per day, 31% were diagnosed with depression. In terms of medication use: 42% were on antihypertensive medication, 35% were on

lipid lowering medications, and 24% were on anti-depressants. Primary care obese patients in this study averaged 3.1 visits per year to their primary care physicians and took on average 4 medications. Conclusions: Obesity is common, is under-recognized and under-treated in this study. Taking into account these facts plus the multiple co-morbid conditions of obese patients should help inform clinical trials focusing on obesity management in primary care practice.

PS211-Downstream Revenue to an Academic Medical Center from a Primary Care Network

Fahey, Pat, Ohio State University; Cruz-Huffmaster, Donabelle; Blincoe, Thomas; Welter, Chris; Welker, Mary Jo

Context: Many academic medical centers established primary care networks for assuring a referral base and educating medical students in the primary care setting. Given financial losses at most of the individual sites, this study was performed to determine the downstream revenue to the sponsoring medical center. Objective: To determine the downstream revenues to four streams: Inpatient and outpatient charges, generated by network physicians directly and by specialist physicians. A fifth stream evaluated specialist professional fees. Design: A novel conservative weighting system to capture the concept that not all revenues generated from the network patients were actually dependent upon network use. Information warehouses for both the medical center and physician billings were used for one year. Network visits for two years, including one year prior to the billing data, were obtained from the faculty practice plan database. Setting: The Ohio State University Medical Center in Columbus, Ohio, and its 18 network sites. All network patients seen over two years were evaluated, de-identified for confidentiality. There were no interventions as such. Results: Total net revenue to the medical center of nearly \$115 million was more than 6 times the net revenue to the network. The downstream direct contribution margin of \$52 million dollars was 6.3 times the network operating loss. Conclusion: A primary care network can make significant financial contributions to a sponsoring academic medical center. This study did not evaluate the educational contributions.

MEDICAL INFORMATICS (PS212-PS216)

PS212-An FPIN Study: What is the Risk of Bowel Strangulation in an Active Adult Male With an Untreated Abdominal or Inguinal Hernia?

Leubner, Kristel, Waco Family Medicine Residency Program; Chop, William

Context: In primary care, clinical situations often must be addressed despite the absence of specific evidence-based recommendations. As a result, we are seeing a proliferation of efforts to produce evidence based recommendations, both by individuals and by groups. One such group, The Family

Practice Inquiries Network (FPIN), produces evidence-based answers to the clinical questions of a panel of primary care physicians by using a standard process. Objective: To provide an evidence-based answer to the clinical question, "What is the risk of bowel strangulation in an active adult male with an untreated abdominal or inguinal hernia?" Design: Comprehensive formal literature review using FPIN's standardized method for querying multiple databases with specially designed search filters. Patients or Other Participants: No direct study participants, but the results are applicable to male adults. Intervention/Instrument: Search results will be rated according to the instrument of the Oxford Center for Evidence-based Medicine, and used to answer the clinical question. Results/Conclusion: Research in progress. Preliminary reviews suggest we will find a small body of high-quality evidence to support expectant management of hernia as an alternative to surgery in adult males.

PS213-Gauging the Impact of Clinical Computer Mediated Communication: Validity of a New Assessment Method

Grad, Roland, McGill University; Pluye, Pierre; Mercer, Jay; Marlow, Bernard; Beauchamp, Marie-Eve; Wood-Dauphinee, Sharon

Context: Many 'updating' services provide short reports of new research findings. A valid measure of the impact of these services, and an acceptable method of deploying such a measure to health professionals, are developments that could advance knowledge transfer. Objectives: To determine the validity of a method to gauge the cognitive impact of information derived from InfoPOEMs. To describe the self-reported impact of InfoPOEMs. To explore participants' understanding of reported impact types and the potential application of InfoPOEMs in practice using qualitative methods. Design: Naturalistic multi method study. Setting: Canadian Family Practice. Participants: Family doctors receiving daily InfoPOEMs on email, as a benefit of membership in the Canadian Medical Association. Intervention/Instrument: Impact assessment scale comprised of ten items related to five sub-constructs. Scale linked to each InfoPOEM, and deployed using computerized ecological momentary assessment. 0.1 Mainpro M1 credit awarded per InfoPOEM rated, using this method. Outcome Measures: Non-response rate, construct validity, patterns of impact by InfoPOEM and by doctor. Content validity, assessed by content analysis of interview transcripts as compared to reported impact of InfoPOEMs. Results: Data will address two hypotheses and a proposal: (1) Family doctors will use our impact assessment method. (2) Impact patterns will support a theoretical 5-factor solution. (3) No hypotheses are offered regarding the frequency of reported impact patterns (exploratory work). (4) Interviews will document the meaning of all ten scale items and support the content validity of the scale (proposal). Conclusions: A new impact assessment method will be used by family doctors, in the context of clinical computer mediated communication. The validity of this method will be supported by factor analysis and content

analysis. This method will enhance knowledge transfer by facilitating a two-way exchange between providers of health information and users' in the field.

PS214-Using GIS to Map the Community Benefits of a Family Residency Center

Van, Lam, Indiana University; Nalin, Peter; Hendrix, Ruth Ann; Wilson, Jeffrey; Zollinger, Terrell; Dollar, Larry

Context: Family medicine residency programs are occasionally challenged by their host institutions to document the value they contribute to the community. To answer that challenge, residents and faculty staff clinics often provide health service to high needs populations and contribute to community outreach efforts. **Objective:** This study used Geographical Information Systems (GIS) analysis to provide physicians, public health specialists, and administrators with a spatial epidemiologic description of the clinic patients and their illnesses. **Design:** Spatial descriptive study. **Setting:** A family medicine residency's clinical population in a Midwestern urban county. **Patients:** Electronic medical records of all 5,465 patient records who visited the family practice center from July to December 2004 were included. **Instrument:** The patients' addresses were geo-coded to produce the maps showing the spatial variability of patients with asthma, type II diabetes, depression, hypertension and obesity in relation to census tracts classified as Medically Underserved Areas. Patients' gender, age and health insurance type were included. The study involves diseases and patient characteristics of interest to the Healthy People 2010 objectives for the nation. **Results:** The GIS maps document that children, adults and elderly clinic patients often resided in census tracts identified as medically underserved. Patients with the chronic conditions studies were clustered geographically, providing support for identifying areas where community outreach efforts were needed. Four in ten of the patients (43%) had Medicare or Medicaid coverage for clinic services, while more than half (54%) presented with private insurance; the remaining three percent used other forms of payment. **Conclusions:** Using GIS for spatial descriptive statistics provides decision makers with informative maps for understanding how a residency clinic meets the needs of a patient population. GIS analysis offers physicians and health care professionals spatial epidemiologic tools to make better decisions concerning public health policies, practices, and interventions.

PS215-A Tablet-based Health Behavior Assessment in Primary Care: Acceptability With Patients and Clinical Staff

White, Thayer, University of North Carolina at Chapel Hill; Donahue, Katrina; Sloane, Philip; Mitchell, Madeline

Context: Innovative methods are needed to promote healthy behaviors in primary care. Tablet computers are a promising tool for collecting information on patient behavior. Limited data exists about patient acceptance or the feasibility of

using this technology. **Objective:** To determine the acceptability of a tablet-based self-administered Health Behavior Assessment (HBA). **Design:** Usability evaluation. **Setting:** Six family medicine clinics in the North Carolina Prevention Collaborative (NCPC). **Participants:** Patients completing the HBA, as well as providers and their staff involved in the NCPC. **Intervention/Instrument:** The HBA is a tablet-computer delivered questionnaire that addresses nutrition, physical activity, smoking, risky drinking, and stage of change. It prints a summary report that includes personalized advice. Patients were asked about its ease of use, understandability, and usefulness. Feedback from clinical teams addressed their experience with its usability and utility. **Outcome Measures:** Satisfaction of patients and staff. **Results:** Information has been collected from 4 of 6 clinics. Of 26 eligible patients, 22 provided feedback. Based on a score of 4 or higher on a 5-point Likert scale, 18/21 patients enjoyed using the HBA (mean 4.6), and 17/21 felt it would help them make healthier choices (mean 4.3). All providers and staff gave feedback. 6/6 staff found the HBA easy to use (mean 4.8), with 3/6 indicating it fit easily into the workflow (mean 3.3). All clinicians thought the report made counseling easier (mean 4.75), and the HBA was helpful for them and their patients (mean 4.5). **Conclusions:** The tablet-based HBA was both easy and enjoyable for patients to use. Additionally, clinicians found it to be a helpful tool, and staff members were pleased with its usability. Care must be taken to ensure that new technologies do not impose on clinic staff. Tablet-based questionnaires show promise as a means of collecting valuable patient information in clinical settings.

PS216-FMR:CCI: A New Perspective on Canadian Family Medicine Research

Lambert-Lanning, Anita, College of Family Physicians of Canada; Dunikowski, Lynn; LeSavage, David; Grava-Gubins, Inese

Context: In the past, access to comprehensive information about family medicine published research was a challenge. The FMR:CCI was a longstanding, annually published paper index of current Canadian family medicine research. The FMR:CCI has now become a searchable electronic database, accessible from the CFPC website (<http://www.cfpc.ca>) as a downloadable file with an exclusive focus on published original research. Searching of this database is accomplished using bibliographic software (ENDNOTE or REFERENCE MANAGER). **Setting:** Submissions for d-base entries (currently only for 2002/2003 publications) were generated by all research directors in Canadian FM departments. **Objective:** To subject all submitted citations to authority verification checks from an appropriate index, or applicable publisher, and thereby establish complete validated records for sustainable and useful searching capabilities. **Design:** Preliminary citation analysis of research study types and MeSH keywords assigned to each record from PUBMED or assigned manually by family medicine health librarians. **Results:** There are 523 original research studies in the current d-base, and include tutorial or

systematic reviews (43), cross sectional or survey studies (27), cohort or longitudinal studies (24), qualitative (21), RCT (18), and evaluation of intervention studies (16). Those 149 studies represent only 28.4% of all publications in the index, offering evidence that FM researchers in Canada use a broad spectrum of methodologies in their research. The majority of the entries contain a direct URL link to the PUBMED record, abstract, or full text, if freely available/publicly accessible. **Conclusion:** Ongoing maintenance and continued analysis of this database are a value added approach for tracking Canadian family medicine research output. Collection of this data will continue for 2004-05 publications. A demonstration on searching this database will accompany the presentation.

Tuesday, October 17 Poster Abstracts – Session II 9:30 – 10:45 am

Turquoise Ballroom

COMPLEXITY SCIENCE (PS217-PS220)

PS217-Implementing a Medical Home Model in the Capital Region Family Health Center

Council, Lora; Rechisky, Amanda; DeVito, George; Geffken, Dominic

Context: The American Academy of Pediatrics (AAP), The American College of Physicians (ACP) and The American Academy of Family Practice (AAFP) have all endorsed the medical home model as the key to providing optimal medical care. The medical home, as defined by the AAP, means medical care that is accessible, continuous, comprehensive, and coordinated delivered in a culturally effective, compassionate, family-centered manner. It is envisioned as a partnership between providers and families. **Objective:** To determine if there is an achievable benefit to implementing a medical home model in the Capital Region Family Health Center (CRFHC). **Design:** A quality improvement initiative. Prospective Cohort Study. **Setting:** The CRFHC provides a full range of primary care and preventive services regardless of ability to pay to about 17,000 patients of all ages in central New Hampshire. **Participants:** Children with Special Healthcare Needs (CSHCN) as defined by the Department of Health and Human Services. **Intervention:** A multi-disciplinary team (including patients and families) will begin implementation of the medical home model by identifying and developing individual care plans for complex patients and CSHCN. **Outcome Measures:** We will prospectively measure care accessibility, continuity, comprehensiveness and coordination for families of CSHCN by using both parent and patient self report measures and data tracked by the

electronic health record. A retrospective case study will evaluate whether care plans help CSHCN receive care better aligned with the medical home model. **Results:** We believe those patients for whom we develop an individualized care plan will have improved accessibility, continuity, comprehensiveness, and coordination compared to those complex patients who do not have a care plan. **Conclusion:** This study will evaluate if the medical home model provides an achievable benefit for our patients.

PS218-Office-based Primary Care for Adults in Ontario, Canada

Jaakkimainen, R. Liisa, University of Toronto; Schultz, Sue; Klein-Geltink, Julie; Thiruchelvam, Deva; Kopp, Alexander
Context: Primary medical care is the first point of contact into the health care system and it is responsible for the coordination of care through different health care sectors and providers. An aging population and an increase in the number of people living in the community with a chronic medical condition will place an increasing demand on primary care. In Ontario Canada, there is a lack of information on the proportion of office-based care provided by general practitioners/family physicians (GP/FPs) compared with other specialist physicians, as well as the frequency with which physicians are seen in the community. **Objectives:** This study examined physician sources of office-based care in Ontario provided to young adults aged 20 to 64 years and older adults over the age of 65 years. **Design:** The Ontario Health Insurance Plan (OHIP) encounter claims database was used to identify physician sources of office-based care. Physician care was divided into the following groups: GP/FP only, GP/FP plus internists/geriatricians/gynecologists, GP/FP and other specialist physicians and specialist physicians only. These visits by source of care were described with respect to patient age, sex, residence, socioeconomic status (SES) and certain chronic medical conditions. **Setting and Participants:** The study population included all Ontario residents eligible for OHIP over the age of 20 years in fiscal years 1992/93 to 2002/03. **Results:** Over the 10 years, nearly half of the population aged 20-39 years saw only GP/FPs for their care. As adults age, the proportion who received care from both GP/FPs and specialists increased. The proportion of Ontario adults who received care from specialists only was small (<3%). Lower visit rates were seen among those who saw one physician type and visit rates doubled when seeing a GP/FP plus specialist physician. Compared with the general population, the average number of office visits among adults with diabetes, congestive heart failure or post-myocardial infarction was significantly higher ($P < 0.01$). **Conclusions:** GP/FPs are the main physician providers of office-based care in Ontario, Canada. Models of primary care delivery need to anticipate the increase in office visit rates seen among older adults and/or those living with chronic medical conditions.

PS219-A Virtual Office of Synthesis and Information Reflecting the Complexity of PHC (VOSI)

Martin, Carmel, Northern Ontario School of Medicine; Felix-Bortolotti, Margot; Darling, Shelley; Strasser, Sarah

Context: PHC is complex, highly contextualized and much of its research activity cannot be meaningfully synthesized by mainstream quantitative systematic review approaches.

Objective: To conduct a working 'realist' synthesis on interdisciplinary literature that will provide current state of evidence on questions in Ontario on questions related to new models of PHC organization - Family Health Teams. This synthesis of heterogeneous literature will include the Ontario Primary Health Care Transition (PHCTF) projects. The approach recognizes the important role of context in any phenomenon. It examines the interaction between context, interventions and outcomes as integral to PHC and further it is argued that informed policy must take in account all of these elements. **Methods:** Stakeholder consultation to prioritize the key elements of a conceptual framework and key questions. Searching and mapping the concepts in the international literature to encompass the different perspectives, study types and quality of contextual knowledge related to different intensities of care needs in different settings. **Results:** The development theoretical framework comprehensive and dynamic enough to account for the complex nature of the PHC as well as to guide the methodology for gathering and synthesizing evidence was based on a literature scoping. Over 400 articles were reviewed across multiple dimensions relating to complexity and political economy theories, and the knowledge base around mechanisms in primary health care development. The scoping activity on access to comprehensive primary care and interdisciplinarity encompassed 4 foci of care intensity – multiple chronic disease care (multi-morbidity), prevention and health promotion addressing health inequalities, maternity care and care of the well adult. **Conclusions:** New methods of synthesis of heterogeneous literature using participatory action research techniques to clarify and establish core questions are being developed and tested.

PS220-Re-order: A Methodology for Engaging Stakeholders in Reorganizing the Response of Australian Primary Care to Depression

Gunn, Jane, University of Melbourne; Kokanovic, Renata; Griffiths, Frances; Hurworth, Rosalind; RE-ORDER Team

Context: The re-order project team is taking a new look at the way Australian primary care responds to depression. Re-order takes a broad approach to the conceptualization of depression and the role that primary care could play in responding to the needs of people experiencing depression. Our aim is to develop exemplary models for primary care mental health. **Objective:** to select stakeholders for consultation that reflects the broad range of perspectives and breadth of vision in understanding depression and depression care. **Design:** we will use complexity theory as a

framework to undertake data syntheses and a secondary analysis of existing interview data, with a cohort of people experiencing depression, to identify the various groups of stakeholders that should be involved in this phase of re-order. Once identified stakeholders will be invited to participate in a structured process using the Nominal Group Technique (NGT) and Delphi Technique (DT) to gain consensus about the best way to manage depression in primary care. These findings will be confirmed through interviews with reference group members. **Setting:** Several hundred stakeholders from Australia and internationally. **Results:** Literature indicates that family and community are key supports for people experiencing depression. Analysis of cohort participants' views supports this finding. Thus the re-order stakeholder phase will include non-health and health stakeholders, mindful of the need to produce results that can be operationalized in primary care. **Conclusions:** Our experience of using this process to gain key stakeholder views in the re-order project will be presented.

DIABETES (PS221-PS231)

PS221-Managing Aboriginals' Type 2 Diabetes: Development of a Monitoring Tool

Vreugdenhil, Michael, Southwest Ontario Aboriginal Health Access Center

Context: Diabetes is a major health issue among North American Aboriginals. The rates of diabetes are estimated at 3 to 5 times higher than the average population. It became evident after starting a new family practice servicing three Canadian reservations that there was poor control of blood sugar for diabetic patients. After surveying patients and assessing the problem it appeared that the patients were receiving care from multiple providers and routine follow up care was rare. **Objective:** To develop a diabetic monitoring tool to improve the health of Aboriginal people with diabetes. **Design:** A diabetic monitoring tool was developed using the recommendations of the Canadian Diabetic Association. HbA1C was the variable measured at three-month intervals. Other variables were also monitored but not analyzed such as blood pressure, cholesterol, renal function, foot examinations and eye examinations. **Setting:** Southwest Ontario Aboriginal Health Access Center on the Chippewa Reserve in Ontario, Canada. **Participants:** Ten Aboriginal male and female adults over age 20 with Type 2 diabetes. **Intervention:** A diabetic monitoring card with scheduled follow up was given to all participants. **Results:** After 9 months there has been no significant change in HbA1C values. Follow up has been 100% since the beginning of the program. **Conclusions:** It has been identified that there needs to be better control of diabetes on the Chippewa Reserve. The diabetic monitoring card has not shown significant reduction in the HbA1C. However, follow up monitoring visits improved to 100%. It is hoped that through more frequent contacts, primary health care interventions such as lifestyle changes and medication

adjustment will increase the health of Aboriginals with diabetes on the reserve.

PS222-Incidence of Childhood Obesity Among Children of Obese Mothers at a Community Health Center

Martin, Patrick; Passmore, Cindy; Weaver, Sally, Waco FPRP

Context: The increasing prevalence of childhood obesity is a concerning and challenging issue facing family physicians today. We have yet to develop good strategies for dealing with this dilemma, but we must identify these children who are at risk before we can even contemplate treating their obesity. Additionally, many but not all offspring of obese mothers are themselves obese. Some studies suggest that maternal obesity as well as maternal educational level are correlated with childhood obesity. We intend to see if this holds true for a lower socioeconomic population at a Community Health Center, a population a higher than average risk for childhood and adult obesity. **Objective:** To determine the incidence of childhood obesity among children of obese mothers at a low income federal health clinic. **Design:** Observational, cross-sectional study. We are looking at all office encounters at a federally qualified community health center in a one month period occurring with children aged 2-18 years old. We have randomly sampled 50 children identified as obese (BMI > 85th%tile) and 50 who are non-obese and will be analyzing their mother's medical records to determine how many of the mothers are obese. Our clinic population is about 1/3 Caucasian, 1/3 Hispanic and 1/3 African-American. **Outcome Measures:** Incidence of childhood obesity at a community health center in children whose mothers have documented obesity. Secondary measure: Overall incidence of childhood obesity at a community health center based on ethnicity, age, and maternal BMI. We also plan to document the subjects' activity levels, hours of television viewing, hours of video game use, and hours of outside sports/playing. **Results:** Research in progress. **Conclusions:** We expect to find a higher incidence of obesity among children whose mothers are also obese. This is a pilot study by a resident intended to gather data for a large educational project.

PS223-Using Podcasting to Deliver Diabetes Teaching to Family Medicine Residents

Jones, Betsy, Texas Tech University Health Sciences Center; Ragain, Mike; Cook, Ron; Spalding, Mary; Young, Rodney; Mannschreck, Dannen; Allison, Jane; Mitchell, Jennifer; Lutherer, Lorenz; Tenner, Tom; Williams, Simon

Context: New ACGME-imposed limits on residency training hours, coupled with an ever-expanding body of medical knowledge (especially for primary care physicians) make it imperative that residency training for family physicians be as efficient as possible and take full advantage of non-traditional and creative modes to deliver content. **Objective:** 1) To assess the effectiveness of using

podcasting (digital audio files downloaded from the Internet) to deliver training in diagnosing, treating, and managing diabetes mellitus to family medicine residents; 2) To assess behaviors and skills in managing diabetes among family medicine residents who have participated in a podcasting curriculum, and 3) To assess health outcomes for diabetic patients within resident practices participating in a podcasting curriculum. **Design:** Multi-site non-randomized trial of a novel teaching modality. **Setting:** 4 Family medicine residency programs in a geographically distributed academic medical center. **Participants:** 87 Family medicine residents from 4 programs who consented to participate by agreeing to allow their results from the AAFP's METRIC online practice improvement program to be used as an evaluation method for research purposes and who agreed to listen to and evaluate 20 podcasts. **Intervention/ Instrument:** Residents were required to complete the 6-step METRIC Diabetes program, including listening to podcasts as a component of their practice improvement plans. Project participants were issued 2GB iPod Nanos and trained to access and listen to podcast episodes on diabetes. Residents were also required to complete 3 on-line evaluation instruments to measure learning mastery and assess podcast effectiveness. **Outcome Measures:** Measures of learning mastery; adherence to METRIC treatment guidelines and differences between the initial and 6-month follow-up performance measures. **Results:** This project is in progress; variables include: METRIC chart review physician performance and patient outcome results at baseline vs. 6-month follow-up, results of cognitive and satisfaction assessments, and data comparisons all sites. **Conclusions:** This project will provide insight about the effectiveness of podcasting as a curricular delivery mode.

PS224-Impact of Point of Care HbA1C testing on Diabetes Management in an University Based Family Medicine Practice

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Context: Traditional off-site HbA1C testing delays active diabetes management, requires additional office work thereby reducing efficiency, and often frustrates providers, nurses and patients. Point of care testing allows clinicians and patients to review new results immediately, share in success, discuss challenges, and make necessary therapeutic changes in person rather than by phone or at a subsequent visit. **Objective:** To evaluate the impact of a protocol for point of care HbA1c testing based on standing orders for office nursing staff. **Design:** Cross sectional pre- and post assessment of HbA1c testing assessed by audit from an EMR, and nursing, provider and patient satisfaction assessed by questionnaire. **Setting:** University based Family medicine residency practice in Eastern North Carolina. **Patients:** Adult patients with a diagnosis of diabetes mellitus seen prior to the institution of the protocol (1/1/05 – 6/30/05), and after six month follow-up (1/1/06 - 6/30/06). **Intervention:** Implementation of a point of

care HbA1C testing protocol. **Outcome Measures:** Primary: percent of diabetic patients meeting HbA1c testing frequency standards and HbA1C goals; Secondary: level of provider, staff and patient satisfaction. **Results:** We anticipate a significant increase in the percentage of patients with appropriate testing for HbA1C, improvement in the percentage of patients with HbA1c < 7, and acceptance and satisfaction among providers, staff and patients.

Conclusions: Implementation of a point of care HbA1C testing protocol can have a significant impact on the quality and efficacy of diabetes care provided in the ambulatory setting.

PS225-Development of Improved Diabetes Screening Criteria from a Large National Health Information Database

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Context: In the United States 1/3 of diabetics are unaware that they have diabetes. Primary care physicians are uniquely situated to diagnose and manage diabetes, however, screening for diabetes is still not very common. A critical reason for the low screening rate is the poor sensitivity (55%) for the current ADA criteria. **Objective:** To develop a screening tool using commonly-obtained, objective, biological findings such as blood pressure and cholesterol levels. **Design and Setting:** Secondary data analysis of data from a nationally representative combination survey and physical examination (National Health and Nutrition Examination Survey – NHANES) released from 1999 to 2002. **Participants:** Individuals in the data releases for whom pertinent information was available and who answered a diabetes status screening question in the negative (N=4492). **Instrument:** General Additive and logistic regression models of a binary outcome and the add1 and drop1 functions in S-Plus 7.0 (Insightful Corp.). **Outcome Measures:** Risk scores for participants with undiagnosed diabetes. **Results:** Age, education, race, family history and body mass index have been shown to be risk factors for diabetes. The adjusted odds ratio for stage two hypertensive systolic and diastolic blood pressures is: 3.08 (95% CI 1.45-6.55) **Conclusions:** Including blood pressure improves screening outcomes in terms of yield for a fixed number of subjects screened.

PS226-Managing Uncontrolled Diabetes in an Underserved Latino Population: The Clinical Encounter

Robinson, Dave, University of Nebraska; Grames, Heath; Mcknight, Curtis

Context: Latinos have the greatest incidence of unmanaged glucose and suffer from more diabetes-related complications than non-Latino racial groups. This disparity is partially due to poverty, difficulty with access to care, cost of treatment, and attitudes and beliefs about illness which limit self-management practices, such as monitoring blood glucose levels and exercise. Research indicates that patients who

reported good communication with their physician had better glucose control and self-management practices. The goal of this study is to determine the influence of the patient-provider relationship on diabetes outcomes for Latinos. **Objectives:** To explore the dynamics that occur between physicians and patients during the diabetic clinical encounter, especially those that may be specific to communication with Latino patients. Identification of these dynamics will allow researchers to develop interventions to improve communication and thus lower the health disparity. **Design:** Qualitative design using data from videotaped patient-physician encounters and follow-up interviews with participants. Data will be analyzed using grounded theory techniques with case studies for each of the patient-physician encounters. **Setting:** A mid-western community health center that primarily serves urban, underserved, Latino patients. **Patients:** Latino patients who have uncontrolled diabetes will be purposefully selected to participate. It is expected that 15-20 participants will be sufficient to establish data saturation, but the researchers will continue to sample until no new information is obtained. Physicians who treat these diabetic patients will also be part of the study. **Intervention:** Not applicable. **Outcome Measure:** Not applicable. **Results:** This study will yield a detailed description of how physician-patient interactions influence the treatment of poorly controlled diabetes in an underserved Latino population. **Conclusions:** The data will be used as an initial step to develop a model for interventions that seeks to improve the treatment of diabetes and decrease the morbidity and mortality in the Latino population.

PS227-Prioritizing Care and Audit and Feedback to Improve Cholesterol Management in Diabetic Patients in Remote Aboriginal Settings

Bhattacharyya, Onil, University of Toronto; Barnsley, Jan; Harris, Stewart; Zwarenstein, Merrick

Context: Remote aboriginal communities have high rates of diabetes and cardiovascular complications. Interventions with key points for care and audit and feedback should be appropriate for this context. Different classes of primary care providers may react differently to recommendations, and may affect how they should be presented to multidisciplinary teams. **Objective:** Improve cholesterol management in diabetic patients. **Design:** Cluster-randomized controlled trial with concomitant qualitative evaluation of implementation and acceptability (semi-structured interviews and focus groups). **Setting:** Nursing stations in fly-in Oji-Cree reserves in Sioux Lookout Zone, Ontario, Canada. **Participants:** 4 nursing stations and all patients on their diabetes registers (n= 361, 180 in intervention clinics and 181 in control clinics). Qualitative data was collected from the 6 nurses, 2 doctors and 2 community health representatives in the intervention clinics. **Intervention:** Interactive workshop with prioritized key points in diabetes care, and audit and feedback naming diabetic patients with elevated cholesterol, and whether or not they are on statins. **Primary and secondary outcomes:** Statin prescription rates in diabetic patients, and in the subgroup with

elevated cholesterol (LDL > 2.5 mmol/L or total cholesterol/HDL > 4). **Results:** In one community from the intervention group, statin prescription in patients with dyslipidemia increased from 39% to 49%, which approached statistical significance (P=0.17) but not in diabetic patients in general (42% vs. 43%, P=0.82). There was no change in one community from the control group for either patient type. Nurses were enthusiastic about simplification of care while physicians were ambivalent about simplicity of key points and went along with the study because of nurse's interest. **Conclusions:** Use of key points and patient-specific audit and feedback may improve cholesterol management in diabetic patients. However, nurses and doctors react differently to this approach and changes in practice may be driven by nurses rather than doctors in remote rural settings.

PS228-Examining the Difference of Physician Inertia in Treatment Intensification Among Depressed Versus Non-depressed Patients With Diabetes Mellitus Type 2

Benavides, Luis, University of Texas at Galveston; Islam, Jamal; Carlson, Carol

Context: Our initial study examined the role of perceived health-status and self-efficacy on A1C. Controlling for depression, self-efficacy was not a good predictor for A1C suggesting that treatment of depression in DM2 is key for optimal glycemic control. However, it remains unclear whether symptoms of depression in patients with DM2 influence physicians' decision to intensify treatment in those who have not reached target goals. Recent studies demonstrate that physician inertia negatively impacts diabetics care. **Objective:** To examine the role of physician inertia to intensify treatment in depressed versus non-depressed diabetic patients who are not at ADA target goals. **Design:** Prospective cohort design. Cohort constructed from the initial study where DM2 patients identified and screened for depression at baseline. **Setting:** A university-based outpatient family medicine clinic **Participants:** Convenience sample of one hundred forty three adult English speaking DM2 subjects. **Outcome Measures:** Physician inertia measured by looking at presence or absence of treatment intensification when patients at their follow-up visits did not reach ADA target for A1c, blood pressure and cholesterol. Descriptive statistics, compare proportion of treatment intensification in depressed versus non depressed patients, multiple regression to control for variables that may confound treatment intensification. **Results:** Data collection is in progress. **Conclusions:** We anticipate that there is an association between physicians' inertia to intensify treatment and DM2 patient's depression status.

PS229-A Descriptive Study of Type 2 Diabetic Patients Discharged From a Specialty Clinic Back to Their Primary Care Provider

Liddy, Clare; Harrison, Christine, University of Ottawa

Context: The aging population and increase in patients with chronic disease such as diabetes has led to increased burdens on the health care system including rising demands on hospital-based specialist outpatient clinics. Across a number of disciplines, specialist outpatient clinics have been criticized for unnecessary retention of stable patients leading to difficulties with access for new patients because of long-waiting lists for initial assessment. **Objective:** To improve the understanding of patient, provider and system factors as they relate to discharge from a specialty clinic back to primary care providers. **Design:** This descriptive study is will seek to gather information from all three groups involved in the discharge process, that is, the patient and the providers (both family physicians and specialists). A qualitative design will be used to explore issues as they pertain to each group using both focus group and semi-structured interviews. **Setting:** The study will occur at the Ottawa Endocrine and Diabetes Center, a regional specialist outpatient clinic in Ottawa, Ontario, Canada which provides a large percentage of the specialist care for Type 2 diabetic patients in Ottawa and the immediate geographic area. **Participants:** Patients/providers. **Results:** This descriptive study which is currently in progress will help to understand the population of patients, the process of transition from the specialty clinic to the family physician and the barriers to and facilitators for the transition process. **Conclusions:** The knowledge gained from this study will be used to inform the development of tools and procedures to enable the transition process back from specialty clinic to primary care, therefore, assisting primary care practitioners in delivering optimal ongoing diabetes management. This process will ultimately improve access to specialist diabetes care for the population of Type 2 diabetic patients requiring such care.

PS230-Ways of Addressing Knowledge, Education, and Understanding in Pre-diabetes : The WAKEUP Study

Evans, Philip, Peninsula Medical School; Winder, Rachel; Greaves, Colin; Fearn-Smith, Jason; Campbell, John

Context: Impaired glucose tolerance (IGT) and impaired fasting glycaemia (IFG), collectively known as pre-diabetes, confer an increased risk of progression to type 2 diabetes and of cardiovascular disease. Lifestyle change can prevent or delay progression to diabetes. Few patients or family physicians are familiar with this diagnosis. There are no national UK guidelines nor studies involving patients with pre-diabetes. **Objectives:** To identify the key messages and management implications of pre-diabetes that should be communicated to health professionals (HPs) and their patients and synthesize them into a toolkit. **Design:** Action research, using a mixed qualitative methodology. Key informant focus groups (HPs involved in diabetes care and patient advisors) were used to produce a draft toolkit. Two cycles were then

conducted in 2 general practices using the WAKEUP materials. Video-taped consultations, interviews (with patients post-diagnosis), and practitioner and service user workshops were conducted to provide feedback on the use and development of the toolkit. Framework analysis was used to analyze the data, and the action points generated were used to refine the draft toolkit. **Results:** 39 patients and HPs participated. The main themes to emerge were knowledge and education needs, conveying knowledge and motivating change, practice systems and the role of the HP in pre-diabetes care. The key messages about pre-diabetes were its seriousness, the preventability of diabetes progression and the need for lifestyle change. Changes to practice systems were identified and the majority of patients reported lifestyle changes after receiving the WAKEUP intervention. The toolkit was found to be a useful resource for patients and HPs. **Conclusions:** We identified the key messages about pre-diabetes, and developed and successfully piloted a novel intervention for patients with pre-diabetes and their HPs. Further work is needed to help practices set up systems, to establish the effectiveness of the WAKEUP materials and to determine the best mode of delivery of the toolkit.

PS231-Impact of Ambient Air Pollution on Diabetes Hospital Admission in California

Liu, Yi, Loma Linda University; Chen, Lie Hong

Context: Recent studies suggest that persons with diabetes may be at higher risk for the short-term effects of air pollution. **Objective:** To identify the association between diabetic admission and the short term exposure to ambient air pollution. **Design:** A cross-sectional analytical epidemiologic study. **Setting:** The California hospital discharge database collected by the Office of Statewide Health Planning and Development. **Participants:** State-wide hospital discharge patients 1998-2000. **Outcome Measures:** Diabetes was coded (International Classification of Diseases-9th Revision-Clinical Modification procedure and diagnosis codes) as the principal diagnosis of admission. Patient resident zip codes, hospital admission per quarter were used to obtain geographic and time specific ambient concentration of air pollution (PM₁₀ < 10 µm in aerodynamic diameter (PM₁₀), ozone, nitrogen dioxide, and sulfur dioxide). Gender specific multivariable logistic regression was used to evaluate relative effect of diabetic hospital admission and air pollution after the age, ethnicity, and length of hospital stay were adjusted. **Results:** Overall diabetic hospital admissions were higher in the areas with high PM₁₀, NO₂, and SO₂ concentration, particularly in patients 35 years and older. NO₂ and SO₂ levels significantly differ between type I and type II diabetic groups. In patients 35 years and older, the odd ratio for diabetic admission with each 10 µg/m³ increase in PM₁₀ was 1.05 (95% Confidence interval (CI), 1.03, 1.07) in females and 1.03 (95% CI, 1.01, 1.05) in males. The odd ratio with each 10 ppb increase in NO₂ was 1.09 (95% CI,

1.07, 1.11), each 1 ppb increase in SO₂ was 1.04 (95% CI, 1.02, 1.06). No association was observed with O₃.

Conclusion: In California, hospital admissions for diabetics, particularly females, were affected by the air pollution exposure. These results suggest that elevations in ambient particulate matter and gaseous exposure are risk factors to the development of diabetics.

HEALTH CARE DISPARITIES (PS232-PS239)

PS232-Are Trust and Communication Predictors for Attrition From a Randomized Clinical Trial?

Greenidge, Caroline, Michigan State University; Alvarado, German; Given, Charles; Given, Barbara

Context: There are differences in trust and communication based on patient age, gender and ethnicity; but there is limited understanding of how these variables affect measured patient outcomes. **Objective:** To increase our knowledge of the role of patient trust and communication on patient attrition in the setting of a randomized control clinical trial (RCT). **Design:** The study is a RCT utilizing behavioral interventions for symptom management in cancer patients undergoing chemotherapy. **Setting:** The study sample of 471, were recruited from multiple Midwest urban cancer centers. **Participants:** Patients had early or late stage common solid tumor cancers, especially: breast, colorectal, lung, as well as non-Hodgkin's lymphoma; had new or recurrent disease and were not receiving hospice care and undergoing a course of chemotherapy; were age 40 years or older, cognitively intact, English speaking, able to hear and speak for telephone interviews. Patients were excluded if diagnosed with any other hematological malignancy or whose treatment regimen involved bone marrow transplant or stem cell rescue; and if under the care of a professional for a diagnosed emotional or psychological disorder. **Intervention:** An automated monitoring and triage system versus a nurse provided psycho-educational and problem-solving intervention for patient management of symptoms during chemotherapy. **Outcome Measures:** The trial was structured to measure the primary outcome of patient symptom severity among 7 prevalent symptoms and secondary outcome measures of physical role performance; reduced emotional distress; and levels of patient trust, communication, satisfaction; in addition to patient attrition. **Results:** Descriptive analysis revealed lower enrollment of male (n=119) and minority (Blacks=58, non-Blacks= 19) participants. Attrition rates were 25% and 37% for non-minority and minority and 30% and 24% for males and females. **Conclusions:** We are planning to delineate whether or not patient trust, communication, age, gender, and ethnicity predict attrition from a behavioral intervention RCT.

PS233-A Triple Threat: Is Depression Associated With Worse Glycemic Control in Diabetic Persons Infected With Hepatitis C?

Valdini, Anthony, Greater Lawrence Family Health Center; Augart, Carolyn; Cleghorn, G Dean

Context: Depression is associated with poor outcomes in patients with Diabetes Mellitus Type II (DM2). Because DM2 and depression are common co-morbidities among Hepatitis C infected patients (HCV+) their combination may increase risk for diabetes-associated complications in this already vulnerable population. **Objective:** Report prevalence of DM2 in an HCV+ cohort; compare glycemic control in depressed vs. non-depressed HCV+ diabetics. **Design:** Cohort study utilizing HCV registry data to ascertain the prevalence of DM2 and depression as well as most recent HbA1c. **Patients/Setting:** Cohort of 462 HCV+ adults, >20 yrs, visited an inner-city Community Health Center between 4/1/03 - 4/1/05; total active patients 41,384. **Outcome Measures:** HCV+ subjects were coded depressed or diabetic if these diagnoses were found in their medical record. HbA1c used for calculations was the most recent value recorded. Comparison of HCV+ diabetics with and without depression was made using chi-squared statistics, after categorizing HbA1c results into terciles representing levels of glycemic control: 9.5%. **Results:** One hundred thirty-nine (30.1%) of the entire HCV+ cohort were depressed. Eighty-three, 18%, have DM2; of these, 33.7% were depressed. Mean HbA1c for the DM2 + depression group was 7.5%, s.d.=2, and was 7.2%, s.d.=2.1 for the DM2 non-depressed group. Mean ages were similar, 54.4 yrs depressed, and 55.3 yrs non-depressed. While there were more males than females in both the depressed and non-depressed groups, there were no significant differences in their proportions across the glycemic control categories, (?2 P=0.60 and 0.12 respectively). The depressed group had fewer patients at target HbA1c. Chi-squared testing of glycemic control terciles between depressed and non-depressed groups was significant, P= 0.010. **Conclusions:** This preliminary study found a significant difference in glycemic control between diabetic HCV+ patients with and without depression. Future research should be targeted toward improving outcomes for patients with Hepatitis C suffering from depression.

PS234-A Meta-analysis of HIV Voluntary Counseling and Testing (VCT) in the Era of HAART

Gaskie, Sean, Sutter Medical Center

Context: The CDC's Advancing HIV Prevention (2003) strategy shifts resources from primary prevention to early detection of infected individuals in the era of HAART, and the evidence on VCT effectiveness is mixed; some studies have found increased risk behavior among HIV-negative patients. **Objectives:** To estimate the effect of voluntary counseling and testing (VCT) on sexual behavior risk in the era of HAART. **Design:** Medline, AIDSline, CINAHL, Sociofile, Cochrane Controlled Trials Register, and PsycInfo databases (1990 through November 2005);

handsearch of key journals and reference lists of retrieved studies. **Study Selection:** Prospective studies, of either multi-arm or pre- post- design, reporting specific sexual risk behavior outcomes with sufficient detail to calculate effect sizes. **Intervention (VCT)** required HIV testing and both pre- and post-test counseling. Of 691 abstracts, 63 articles were retrieved for full evaluation. **Intervention:** Study characteristics were coded using a standardized form: demographics, study design, setting, risk group, study date, seroprevalence, attrition rate, gender balance, theoretical foundation, and methodologic quality were recorded. **Data synthesis:** The pooled relative rate of risky sexual behavior 6 months after VCT was 0.87 (95% CI 0.83, 0.92). There was fair consistency across studies (Higgins' I2 53%). There was no appreciable change in heterogeneity fitting a random effects model. Subgroup analysis of potential (a priori) effect modifiers showed greater treatment effect in studies with seropositive participants or in settings with background seroprevalence > 3% but no significant influence by gender mix, attrition rate, Jadad score, theoretical basis, or publication date (before or after 1996). Egger and Begg tests were both statistically significant, suggesting publication bias. **Conclusions:** Sexual behavior risk is eliminated for 1 of 14 clients receiving VCT. While modest, this treatment effect is consistent across settings and risk groups. With 5 million Americans at behavioral risk, effective primary prevention efforts cannot be abandoned.

PS236-Evaluation of Project INHALE: A Program to Improve Asthma Outcomes Through the Reduction of In-home Triggers

Watkins, Robert; Desiderio, Melanie; Tumiel-Berhalter, Laurene, SUNY at Buffalo

Context: Triggers within the household environment contribute to the severity of asthma and frequency of exacerbations. Trigger avoidance can greatly improve asthma outcomes. **Objective:** To evaluate the effectiveness of an in home intervention that provides environmental assessment, appropriate mitigation of hazards and trigger avoidance education. **Design:** A longitudinal intervention evaluation of pre/post measurements. **Setting:** Erie County, NY. A largely urban and suburban area, containing the City of Buffalo. **Participants:** A convenient sample of self-reported doctor-diagnosed asthmatics in Erie County, NY. Emphasis was given to asthmatics in targeted low-income urban zip codes. **Intervention/Instrument:** Baseline information including demographics, self-report of trigger exposure & health care utilization was collected via telephonic interview. Households were inspected for asthma triggers such as upkeep, standing water and triggers in the bedroom. A personalized educational session was provided to reduce exposure to observed hazards. This home inspection was repeated at 6 months. The telephone interview was re-administered after one year. **Outcome Measures:** Reduction of triggers, reduction of health care utilization (ER, hospital, acute doctor visits), and reduction of asthma severity. **Results:** Asthmatics enrolled in the program

showed a significant ($P < .001$) decrease in self-reported severity of their asthma. Based on visual inspection, triggers throughout the household were reduced including those in the asthmatic's bedroom ($P < .001$), housekeeping ($P < .001$) and air quality ($P < .001$). The percentage of Participants reporting no emergency department visits in the last 6 months increased from 68.5% at baseline to 92.1% at follow-up ($P < .001$). Conclusions: Overall, the INHALE program was successful as designated by improvements in health outcomes, decrease in health care utilization, and a reduction of in-home triggers. An in-home intervention paired with appropriate medical treatment may greatly improve QOL for asthmatics.

PS237-Replicating a Successful Weight Control Program for African-American and Black Women: SisterTalk Hartford

Fifield, Judith, University of Connecticut Health Center; McKinney, Mark; Henderson, Cheryl; Bursleson, Joseph; Peele, Melanie; Gonzalez, Lisandra; Smith, Cheryl

Context: There is a lack of effective, culturally tailored weight-control programs for African-American and Black women (AA/B) who are disproportionately at risk for overweight and obesity. SisterTalk Hartford (STH), a faith-based program developed to address this gap, has shown initial evidence of effectiveness. This cross-over design offers a unique opportunity to assess whether STH can be replicated when the control group is offered the intervention second (STH-Second). Objective: STH, developed collaboratively with 12 churches and a hospital, translated an existing, culturally tailored, weight-control program into a faith-based, film-plus-group support program for women in the church. Preliminary studies indicate that women in 6 churches exposed to STH-First were 2.4 times as likely to lose weight as those enrolled in STH, but randomized to a general health promotion series during the control period (STH-Second). Design: Churches randomized to cross-over control design, with pre- and post-12 week measurement. Setting: 12 urban, AA/B churches in Connecticut. Participants: 176 AA/B women attending a participating church, having both pre-intervention and post-intervention BMI measures from either STH-First or STH-Second. Intervention: 12 weekly, faith-based, weight-control sessions, led by trained STH-church volunteers, delivered in the church. Outcome Measures: Post-intervention BMI change. Results: Participants (combined STH-First and Second) were employed (70%), college educated (37%), 51 years of age (SD 12.33). STH-Second participants were more likely to be STH-church volunteers (25%) ($P=.047$). Of the 170 with complete post-intervention data, GLM showed reductions in BMI were associated with higher pre-intervention BMI ($F[1,170]=9.68, P=.002$), older age ($F[1,203]=4.72, P=.031$), larger household size ($F[1,170]=5.62, P=.012$), and non-STH-volunteer status ($F[1,170]=5.61, P=.019$). Randomization (First or Second) status did not matter. Conclusions: STH holds promise as an

effective program to help AA/B women lose weight. The program can be successfully replicated for a variety of women, across 12 churches at two points in time.

PS238-Socioeconomic Differences in Processes of Mental Health Service Delivery Under Universal Health Coverage

Steele, Leah, University of Toronto; Glazier, Richard; Moineddin, Rahim; Agha, Mohammad

Context: Even in universal health care settings, individuals from higher socioeconomic status (SES) neighbourhoods are more likely to use the services of psychiatrists and have more visits to psychiatrists than individuals from lower SES neighbourhoods. Objective: To determine if there are SES differences in the time to first contact with the health system for mental illness or in referral times from general practitioners and family doctors (GP/FPs) to psychiatrists. Design: This was a retrospective cohort analysis using data from the Ontario Health Insurance Plan, hospital discharge abstracts, and the Canada Census. Setting: The City of Toronto. Participants: A cohort of 1,488,850 patients was assembled. Eligible participants had no mental health visits or psychiatric hospitalizations between 1992 and 1994. Toronto neighbourhoods were ranked and then grouped into five SES quintiles using the proportion of residents with no high school education. Participants were assigned to an SES quintile using their address of residence. Outcome Measures: Participants were followed from 1994 to 2000. Primary outcomes were time to first GP/FP visit for a mental health diagnosis and time from the first GP/FP mental health visit to the first psychiatry visit. Analyses were age-adjusted. Results: At any given point in time, the relative likelihood of visiting a GP/FP for a mental health service in higher SES patient versus lower SES patients (hazard ratio) was 0.90 (95% CI: 0.89-0.91) for men and 0.87 (0.86-0.88) for women. The relative likelihood of being referred by a GP/FP for mental health treatment from a psychiatrist in higher SES patients versus lower SES patients is 1.36 (1.32-1.40) for men and 1.29 (1.26-1.33) for women. Conclusion: Individuals from lower SES neighbourhoods access family physicians faster for mental health services, but they face a longer delay than individuals from higher SES neighborhoods for referral to specialty care.

PS239-Impact of Male Sexual Partner Relationships on Repeat Pregnancy

Garrett-Scott, Mina, University of Maryland; Barnet, Beth

Context: Despite significant declines in teen pregnancy, US rates remain among the highest in the industrialized world. Recent declines may be attributable to a combination of abstinence, effective use of hormonal contraception, barrier methods, and the use of emergency contraception. In 2000, 822,000 teen pregnancies were reported; 89,000 of which were second or higher order. Repeat births in adolescents increase adverse consequences for both mothers and their babies. Factors contributing to adolescent repeat pregnancy and birth have been studied, but are not well understood. Objective: The objective of this study is to examine the impact

of adolescent mothers' male sexual partner relationships on repeat pregnancy. **Design:** Secondary analysis of data from RCT examining the impact of a longitudinal, comprehensive, community-based parenting and risk reduction program for adolescent mothers and fathers. Data was obtained from structured maternal and paternal interviews at baseline (3rd trimester of pregnancy), and maternal interviews at 1 and 2 year follow-up. Interviews assessed demographics, family relationships, partner relationships, domestic violence, mental health, sexual behavior, and contraceptive practices. **Outcome Measures:** Repeat pregnancy and pregnancy outcomes by 2 years following index birth. Quality of the relationship between adolescent mother and baby's father. New sexual relationships. **Participants/Setting:** Pregnant adolescents, age 12-18 recruited from urban prenatal sites and their baby's fathers. Adolescents were followed longitudinally for 2 years. **Results:** Maternal interview data was available for 323 adolescent mothers. Fifty-one adolescent fathers completed similar structured interviews. Repeat pregnancy and partner relationships were assessed over time. We hypothesize that repeat pregnancy will be associated with having and maintaining an intimate relationship with the baby's father, having a new sexual partner, less motivation to avoid repeat pregnancy, coercive partner relationships, and the adolescent mother's and father's view on their role in sharing of parenting responsibilities. **Conclusion:** Findings from this study may help program planners target interventions to improve relationships between parenting teen mothers and fathers with the goal of decreasing repeat pregnancy.

EDUCATION/TRAINING (PS240-PS261)

PS240-Using the Patient Enablement Instrument (PEI) as an Evaluation Tool in a Family Medicine Residency

Dostal, Julie, Lehigh Valley Hospital; Baker, Debra; Biery, Nynn

Context: Increased levels of patient activation are related to improved preventive health behaviors, improved disease-specific behaviors, and improved self-care behaviors. Patient activation through working in partnership with patients is a key component of successful Relationship Centered Care (RCC). Incorporating RCC into residency training requires that we use patient assessments to evaluate physicians' performance on these two skills. The Patient Enablement Instrument (PEI) is one tool that has been used to measure patient activation based on physician performance, although the available literature is limited. **Objective:** To determine if family medicine residents' PEI scores change during residency. **Design:** PEIs were completed by a quota sample of 10 patients per resident 3 times during residency; data was collected at 12, 24, and 36 months of training for each resident. **Setting:** The family medicine residency practice (FHC). **Participants:** FHC patients. **Instrument:** Patient Enablement Instrument,

including both the Spanish and English version. **Results:** PEI scores improved for all resident classes as they advanced in residency training with a statistically significant change in score from T1 to T3. Class of 2004 P=.08, Class of 2005 P=.03, Class 2006, analysis underway. Data for each class was combined and analyzed as aggregate data to explore change in Family medicine residents as a whole. PEI scores for class of 2004, 2005, and 2006 were combined at all three data points (T1, T2, T3) to explore change over time. The residents' mean PEI score increased at each measure over time. Analysis underway. **Conclusion:** Preliminary data review shows residents' PEI scores improved from PGY1 to PGY3. These results suggest that as residents advance in physician year and training in RCC, their interaction with patients facilitates patients as active participants in their health care. Further work will be done to validate the PEI as a resident evaluation instrument.

PS241-Education in Complementary and Alternative Medicine in Japanese Medical Schools: Follow-up Study, 1999-2004

Tsuruoka, Koki, Jichi Medical University; Tsuruoka, Yuko

Context: Complementary and alternative medicine (CAM) has grown in popularity in industrialized countries. In Japan, 76% of the population used CAM, a higher proportion than reported for other countries. These industrialized countries including Japan have introduced CAM into the undergraduate medical curricula as a response to demand. In the US, many department of primary care sponsored CAM education.

Objective: To evaluate the present state of CAM education in Japanese medical school. **Design:** Comparative study with 2 telephone surveys in 1999 and 2004. **Setting:** All 80 medical schools for western medicine in Japan. **Participants:** curricular office workers. **Outcome Measures:** the number of Japanese medical schools that have introduced CAM into undergraduate medical curricula, sponsoring department, and the contents of the education. **Results:** The response rate to the surveys in 1999 and 2004 was 100%, respectively. The number of medical schools that offer CAM education has increased significantly, from 16 schools (20%) in 1999 to 69 schools (86%) in 2004. Treatment with Kampo, which is the Japanese variant of traditional Chinese herbal medicine, is being taught in all 69 schools with CAM education. Fourteen (20%) of these 69 schools also teach also a new framework of CAM and Integrative Medicine, and 7 schools teach evidence-based medicine in relation to CAM in 2004, although almost all schools (95%) taught Kampo and acupuncture as type of traditional oriental medicine in 1999. In sponsoring departments, 37 schools were offered by department of oriental medicine, and 4 schools were by department of primary care. **Conclusion:** The number of Japanese medical schools with CAM education has significantly increased for 5 year. However a few departments of primary care offered CAM education. We expected that more departments of primary care should offer CAM education, because CAM is common topic in Japanese clinical practice.

PS242-Attracting Family Physicians Back to Acute Care Hospitals

Brownoff, Rene, University of Alberta; Szafran, Olga; Bell, Neil; Khera, Sheny; Krikke, Egbert

Context: There has been a significant exodus of urban family physicians from the acute care hospitals while care for hospitalized patients is improved with the involvement of family physicians. **Objective:** To examine the reasons why urban family physicians gave up hospital privileges and to identify factors that would encourage reapplication for hospital privileges. **Design:** Mail out questionnaire survey. **Participants:** Family physicians at the Misericordia and Grey Nuns Hospitals in Edmonton, Alberta who had active hospital privileges during the period from 1990 to 2003, but who did not in 2004. **Results:** Twenty-six of 37 (70%) eligible family physicians responded to the survey. The two most important factors in each category in the decision to give up hospital privileges were: 1) Financial - poor remuneration for inpatient care (65%); no remuneration for after hours call (42%); 2) Workload - increased office workload (65%); increased demand for care of orphan patients (46%); 3) Regionalization - decreased access to hospital beds (46%) and long-term care beds (46%); 4) Hospital Restructuring - elimination of after-hours coverage (65%); competition with specialists for resources (50%); 5) Other Reasons - lifestyle issues/personal and family time (69%); decreased contact and collegial interaction with other physicians (38%). Important factors in the decision to reapply for hospital privileges included: 1) Financial – on call payment (46%); alternative payment plan (42%); free parking (42%); 2) Resources - after-hours coverage (57%); a Family medicine ward with specialist backup (50%); 3) Professional – respect for the role of family physicians (50%); education to enhance/maintain acute care hospital skills (38%). **Conclusions:** Low pay, loss of after-hours coverage and lifestyle issues were important factors in the decision to give up hospital privileges. Improved pay, implementation of after-hours coverage, family medicine wards and respect for the role of family physicians would attract family physicians back to acute care hospitals.

PS243-The Outcome of Graduates of a Family Medicine Residency Program

Lu, Diane, University of Calgary; Hakes, Jacquie; Bai, Meera; Tolhurst, Helen; Dickinson, Jim

Context: Since peaking in 1993, there has been a decline in the Alberta family practitioner to population ratio with little prospect of this trend improving without intervention. **Objective:** To determine the factors which influence the decisions of family medicine graduates on practice styles and locations (urban versus rural). To determine in sub-analysis whether there are any differences between gender and age, international medical graduates (IMG) and Canadian-trained residents and whether the degree of prior pre-medical training, financial debt and/or family responsibilities affects one's decision post training as to

practice style and location. **Design:** A qualitative, retrospective study. **Setting:** University of Calgary, Department of Family medicine **Participants:** 20/83 family medicine graduates (2001-2003) (24% response rate) **Instrument:** An analysis of past exit interviews with a subsequent follow up interview by telephone or by questionnaire in 2004. **Outcome Measures:** The responses of these graduates were compared pre and post graduation for a comparison of their current practice styles and locations. **Results:** By 2004, graduates were primarily practicing in urban settings with the majority in practices. Older graduates were less likely to choose rural locums immediately following graduation. No surveyed graduate had chosen to open a rural practice. Lifestyle, family, autonomy and career interests were the reasons for choosing their present practice style and location. 85% continued to refrain from obstetrical practice citing a perceived lack of competency and lifestyle preference. Many agreed that an optional additional year of paid training would have better prepared them for independent practice. IMGs were more likely to feel prepared for independent practice. **Conclusion:** It appears that family medicine residents are consistent in following through with their intended practice styles and locations from the time of graduation with little change due to lifestyle and family obligations. This suggests that changes in residency training may need to be considered if the profession is to encourage recruitment of doctors to obstetrics and rural areas.

PS244-Readability Characteristics of Consumer Medication Information for Nasal Steroid Inhalers

Roskos, Steven, University of Tennessee; Wallace, Lorraine

Context: Allergic rhinitis affects 20 to 40 million people in the United States. Often it is associated with other chronic conditions including asthma, chronic sinusitis, chronic middle ear effusion, and obstructive sleep apnea. Nasal steroid inhalers are the most effective treatment for allergic rhinitis in both children and adults. **Objective:** To assess the readability characteristics of consumer medical information (CMI) for nasal steroid inhalation devices. **Design:** We identified all (n=7) nasal steroid inhalation devices currently available in the US. English language CMI was obtained from pharmaceutical manufacturers of each identified nasal steroid inhaler. The CMI from these products was evaluated for readability characteristics, including reading grade level using the Fry formula, text point size, dimensions (length and width), diagrams, and directions. **Results:** The mean Fry readability of the CMI was at grade level 6.9 ± 0.7 (range=6-8), while the average text point size was 9.0 ± 2.2 (range=6-12). The mean length of the pages on which the CMI was printed was 31.3 ± 22.5 cm, while the average width of pages was 14.0 ± 12.9 cm. There was an average of 7.6 ± 3.2 (range=3-11) total figures per CMI. There was an average of 5.7 ± 2.2 (range=3-8) figures in the Priming/Use section, while the Cleaning section contained an average of 1.9 ± 2.4 (range=0-7) figures. A device overview diagram was included in 3 (42.9%) CMI. There was an average of 11.0 ± 3.2 (range=7-16) step-by-step directions in the Priming/Use section, while the Cleaning

section contained an average of 4.1 ± 1.5 (range=3-7) figures. **Conclusions:** Most CMI for nasal steroid inhalers is presented in a reading difficulty level, text size, and with diagrams and instructions that make it suboptimal for patient education. These problems may contribute to incorrect usage and less symptom relief for patients.

PS245-Protected Time and Developing Research Skills in Primary Care Faculty

Keller, Steven, New Jersey Medical School; Chen, Niem-Tzu; Bartlett, Jacqueline; Johnson, Mark

We received federal funds to create The Primary Care Research Consortium (PCRC) (HRSA#D54HP03403) whose goals include training junior faculty in clinical research methodology. We created a course that meets 2 hours each week—research 101, to provide the basic skill set needed to conduct basic clinical research and scholarly activities in Primary Care Providers. A pre-course questionnaire identified protected time as the most important barrier to learning to conduct clinical studies. At the end of the first 6 months of study, protected time remains the number 1 hurdle needed to be overcome for these faculty members. 22 faculty went on to take this research course and 17 remain in the course after 5 months. The initial task included focusing the **Participants** on a singular topic of interest (eg obesity, or combining obesity and diabetes). The importance of choosing a topic that commands their interest and combines with their clinical or educational activities was emphasized. Interactive experience in focusing and developing research projects was undertaken. Literature searches conducted outside class time were reported in class and to further develop their project. IRB submissions were supervised in class, with all offering feedback. Data collection with a submission deadlines were then begun. We will describe the increase in research productivity after one year. The Research-Productive Department by Bland et al., 2004

PS246-Symptoms to Diagnosis in Multiple Sclerosis

MacLurg, Katherine; Hawkins, Stanley; Crawford, Amanda; Kielt, Claire; Reilly, Philip, Queens University Belfast

Context: Multiple sclerosis (MS) is a common cause of chronic progressive neurological disability. One would expect 4-6 patients with MS in a Primary Care list of 2500 patients. MS may be suspected for some time before a diagnosis can be made. This period of prediagnostic uncertainty is comprised of worrying, wondering and waiting: patients have to cope with vague fluctuating symptoms and can find their complaints dismissed by family, friends and doctors. **Objective:** To investigate factors which influenced the length of time from first relevant symptom to a definitive diagnosis of multiple sclerosis (MS). **Design:** Multicenter retrospective case note review. **Setting:** 64 primary health care centres throughout Northern Ireland. **Participants:** 395 patients with a definitive

diagnosis of MS. **Outcome Measures:** Time from first relevant symptom to definitive diagnosis. **Results:** 395 patients had a definitive diagnosis of MS; 132 men and 263 women, average age 55. The median time from presentation to diagnosis was two years (mean 4.62, range 0 - 39). 70% people were diagnosed within five years. 35% presented with sensory symptoms, 23% motor symptoms, 22% optic symptoms and 18% had brainstem symptoms Age at presentation, type of MS and year of presentation are related to the length of time from symptom to diagnosis. Sex and type of presenting symptom were not. Older people were diagnosed more quickly. The time from symptom to diagnosis has decreased in recent years. **Conclusion:** Many factors influence the length of time from first symptom of MS to diagnosis. A reduction in this time is welcomed by patients.

PS247-Teaching Residents Evidence Based Medicine in an Ambulatory Clinic

Kuncharapu, Indu, University of Texas Medical Branch; Passmore, Cindy; Alvah, Cass; Carlson, Carol; Wilson, Brenda; Burke, Debbie

Context: EBM practice is important in managing patients. Various concepts and approaches have been described in literature on how to teach EBM in the ambulatory setting. There is no consensus on the best approach to incorporate evidence in teaching in an ambulatory setting in an efficient and effective way. **Objective:** To identify key educational strategies for faculty to incorporate evidence at teaching in ambulatory setting while preserving efficiency, effectiveness and resident- teacher satisfaction. **Design:** Survey: Delphi study. **Setting:** Ambulatory. **Participants:** We identified a 14 member panel of family medicine faculty across the US who had interest and experience in resident teaching and EBM; panelists were selected from the nominated list of EBM experts suggested by colleagues. All 14 faculty members participated in 3 rounds. **Instrument:** Round 1: The selected panelists were asked by email to “identify 3 key educational strategies to incorporate evidence at teaching in an ambulatory setting while preserving efficiency, effectiveness and teacher/ resident satisfaction.” Responses resulted in 21 educational strategies. Round 2: These strategies were sent as survey and were rated by same panelists on a 4 point Likert scale (1 = least valuable to 4= most valuable). The responses to these were ranked based on the mean and median score and sent for re- rating. The responses to round 3 were analyzed for consensus. **Results:** On consensus, top three are: “use of resources that are readily available” followed by “Look up evidence on topic together (now)”, “Model EBM search”. **Conclusion:** Information on the key educational strategies to incorporate evidence in teaching can be useful for teachers, learners and resource planners. The type of learner may strongly influence the faculty’s approach to teaching EBM. Further studies are required to see the effect of applying these suggested strategies on patient care outcomes and resident/teacher satisfaction.

PS248-Assessing How Well Primary Care Residents Are Learning Dermatology

Ahiarah, Ahunna, University at Buffalo; Fox, Chester

Primary care residents encounter and treat a significant number of skin diseases. It is important for them to make correct evaluation and treatment planning decisions so that patient care is not compromised. To do this, they should be adequately trained in diagnostic and therapeutic skills required in managing dermatological disorders. This study was done to assess residents' competence and confidence levels in diagnosing and treating dermatological disorders. A photographic questionnaire of 40 dermatological diagnoses was administered to all family medicine residents. A 5 Point Likert scale to assess confidence was simultaneously administered. A posttest was done after the intervention. Simple descriptive statistics were calculated for each item on the diagnostic/therapeutic competence and confidence test. T-tests were used to test for mean differences in competence (diagnostic and therapeutic) and confidence (diagnostic and therapeutic) between those who had and had not taken the dermatology rotation. T-tests were also used to assess mean differences before and after the intervention. Relationships between competence and confidence were assessed with Pearson correlations. A family medicine residency program. 45 family medicine residents were included in this study. Excluded was any resident who was excused without completing the test. An information sheet about the study was given to the residents. Consent was implied when residents handed back the completed survey. The intervention consisted of a lecture by a third year resident and a photographic quick reference guide, which was given to each resident. A posttest was done 8 months later. Baseline data demonstrated the residents who took a dermatology rotation got 27.2% correct whereas those who did not got 18.6% correct. After the intervention, the results were 53.7% ($p < 0.001$) and 50.9% ($P < 0.001$) respectively. A peer prepared lecture combined with a take home quick reference guide is an effective way to improve a family medicine resident's knowledge of dermatology.

PS249-Effectiveness of a Provider Feedback System on Diabetes Outcomes in a Residency Practice

Dreyfus, Kristen, East Carolina University; Modi, Seema; Lopez, Andre; Gilchrist, Valerie; Kolasa, Katherine

Context: While provider feedback systems (eg report cards) have improved diabetes care outcomes in a variety of ambulatory practices, their use in family medicine residency training programs is less well studied. We evaluated the short-term impact of a resident-specific "report card" system for the management of diabetes mellitus. This is part of a larger project to give report cards on several different chronic care conditions. **Objective:** To evaluate the effectiveness of resident-specific report cards to improve compliance with nationally defined patient management targets for diabetes mellitus. **Design:** Cohort study. **Setting:**

Family medicine residency program. **Participants:** 30 Family medicine residents. **Intervention/Instrument:** Reports were generated from an electronic medical record for each diabetes-specific endpoint; each resident was given a scorecard with their individual patient data. A similar report will be generated six months later with post intervention data. **Main and Secondary Outcome Measures:** Increase from baseline to six-month follow-up in the percentage of patients in whom each clinical indicator (HbA1c, blood pressure, lipid panel, nephropathy, neuropathy and retinopathy screening, and pneumovax) was measured. Improvement in documentation by the residents will be a secondary outcome. **Results:** Anticipated results are significant improvements in each selected diabetic indicator category among all residents. **Conclusions:** A clinical performance report card in conjunction with didactic content on chronic diseases increases resident awareness of clinical guidelines and improves management. Selecting a specific strategy to improve rates based on the chronic disease process may further increase adherence to clinical guidelines and result in positive clinical outcomes.

PS250-Interactive Genetic Counseling for Family Physicians

Blaine, Sean, University of Toronto; Carroll, June; Glendon, Gord; Meschino, Wendy; Permaul, Joanne; Rideout, Andrea; Shuman, Cheryl; Telner, Deanna; van Iderstine, Natasha

Context: As genetic testing becomes more available, family physicians (FPs) will increasingly play a role in delivery of genetic services. Familiarization with genetic counselors' role will enable FPs help patients make informed choices and prepare them for genetic counseling. **Objective:** To determine acceptability of interactive role-play as a means to raise FPs' awareness of genetic counseling process. **Design:** Interactive role-play, before/after survey: FP conference registrants acting as "patients" attending a genetic counselor. **Setting:** Ontario College of Family Physicians' Annual Scientific Assembly, Toronto (November 2005) and College of Family Physician's of Canada's Family medicine Forum, Vancouver (December 2005). **Participants:** Any FP registered was eligible. $n=93$. Toronto: 60/500 FPs. Vancouver: 33/1468 FPs. Mean age 42. 63% female. 85% no genetic continuing education in past 3 years. **Intervention:** 20 minute one-on-one session with certified genetic counselor working through randomly assigned case (one of: prenatal, pediatric, or adult-onset). **Outcome Measures:** Confidence in genetic risk assessment, understanding of counseling process, knowledge, acceptability of role-play as educational tool. **Results:** FPs' baseline genetic knowledge was poor (defined by score of 1-2 / 5 Likert): 49% prenatal, 69% adult-onset, 84% pediatric. Baseline confidence highest in eliciting family history (FHx) (53%) and providing psychosocial support (51%) and lowest in discussing risks, benefits, limitations of genetic testing (12%) and describing counseling process (15%). After role-play 58% FPs felt they prepared patients well for genetic counseling as opposed to 19% beforehand. 80% FPs had better appreciation of

importance of FHx, but baseline only 30% reported taking three generation FHx. 97% agreed session was effective way of learning about genetics and would recommend to colleagues. 94% would attend a similar session on another topic. Conclusions: Role-play with FPs at conferences is acceptable and effective method of teaching about genetics. This educational intervention could be applied to other disciplines interacting with FPs to raise awareness among health professionals.

PS251-Learners' Attitudes Toward and Educational Experience of Interprofessional Maternity Care - Babies Can't Wait Project

Carroll, June, University of Toronto; Biringer, Anne; VanWagner, Vicki; Medves, Jenny; Oandasan, Ivy; Tobin, Stacey; Moineddin, Rahim; Prakash, Preeti; Thomas, Jackie; Boutilier-Dean, Marie

Context: Collaborative models have been proposed as part of the solution to the human resource crisis in maternity care. In order to plan appropriate educational programs, it is important to understand the attitudes of today's maternity care learners towards interprofessional maternity care practice and their current educational experience. Objective: To explore attitudes among medical students(MS), midwifery students(MWS) and Family medicine(FMR) and Obstetrics(OBR) residents towards interprofessional maternity care practice and education. Design: Web-based survey administered by modified Dillman technique (final request was paper copy of same survey). Setting: Ontario, Canada. Participants: All final year MS(n=573), all fourth year MWS(n=109), all FMR(n=602) and OBR(n=109) in Ontario, Canada. Outcome Measures: Learners were asked about their attitudes towards collaborative maternity care, their understanding of the scope of practice of the other maternity care professions and how well their educational programs prepared them to work in an interprofessional setting. Results: Response rates were 26%, 71%, 31%, and 35% for the MS, MWS, FMR, OBR respectively. Most learners (65-71%) agreed that interprofessional care would improve maternity care for women; however, only 43-58% felt that it would increase recruitment of intrapartum care providers. 54-65% of learners agreed that they required further education to be effective in an interprofessional setting. Whereas >96% of all of the learners indicated they understood the scope of practice of obstetricians, 45% of MS, 48% of FMR and 74% of OBR said they understood the scope of midwives. Only 9% of MS, 10% of FMR and 46% of OBR responded that their educational programs prepared them to work with midwives, while only 19% of MW felt prepared to work with family physicians. All learners felt well prepared to work with obstetricians. Conclusions: Interprofessional education appears to be an important step in the development of maternity care providers who are able to understand each others' scopes of practice and work collaboratively.

PS252-Exploring Elderly Patients' Perceptions About Strategies to Improve Adherence to Medications: A Qualitative Study

Papaioannou, Alexandra; Lau, Elaine; Dolovich, Lisa; Nair, Kalpana; Kennedy, Courtney; Emili, Anna; Pathak, Anjali; Burns, Sheri, St Joseph's Healthcare

Context: Medication nonadherence is a major problem in healthcare that can lead to treatment failure and undesired clinical outcomes. Medication non-adherence rates for elderly patients taking multiple medications and having co-morbid conditions ranges from 26% to 59%. Objective: The objective of this study was to explore the experiences, perceptions, and expectations of elderly patients regarding strategies used to improve medication adherence. Design: Qualitative study. Setting: Community. Patients or Other Participants: Patients 65 years of age or older who were taking 2 or more prescription medications were recruited from family physician practices and community pharmacies. Intervention/Instrument: Focus groups were held using a semi-structured interview guide. Outcome Measures: Questions focused on examining the importance of adherence, facilitators and barriers to adherence, and usefulness of strategies for improving adherence. Results: Forty-two participants attended 1 of 7 focus groups. The mean age of participants was 73.7 (SD 6.0) years, 55% were female, and the mean number of medications taken was 6.1 (SD 2.9). Facilitators to adherence included: having trust in the physician, feeling comfortable discussing medications with healthcare providers, awareness of the consequences of not taking medication, and accepting responsibility for one's health. Barriers to adherence included: having a negative perception of medication-taking, feeling overmedicated, fear of side effects, lack of support from healthcare providers, and receiving conflicting information about medications. The main adherence strategies patients used were medication organizers, integrating medication-taking into their daily routine, and consulting with their physicians when they encountered side effects. Conclusions: There were a wide range of facilitators and barriers that influenced elderly patients' medication adherence. By understanding the patient perspective, more effective interventions can be designed to improve medication adherence.

PS253-Changes in Intended Scope of Practice by Family Medicine Residents: Comparison Between an Urban and Rural Training Program

Morris, Kelly, McMaster University; Kaczorowski, Janusz

Context: Medical practice in rural and remote settings necessitates a broader scope of practice by family physicians. Northern and rural residency programs offer unique training to ensure both an interest in and intention to provide a comprehensive practice style. Objectives: To compare the change in the intended scope of practice from entry to exit of family practice residents in two related but distinct training programs. Design: Survey of family practice residents from 1994-2002 at entry and exit of residency training. Settings:

Two McMaster University postgraduate family medicine residency training programs: Thunder Bay-based setting with a northern and rural focus and Hamilton-based setting with a southern and urban focus. Participants: 218 family practice residents (96 in Thunder Bay; 122 in Hamilton). Outcome Measures: an aggregate score of the intention to include 19 sub-disciplines of family medicine in their future practice. Results: At entry, both programs had similar scope of practice scores. Although both groups had lower scores at the conclusion of the residency, Thunder Bay-based residents had a significantly higher comprehensive score than Hamilton-based residents [mean=17.04 and 16.77 respectively, $t(213)=2.5$, $P=.013$]. For both sites, labor and delivery, anaesthesia and major surgical procedures were the areas of highest change with more residents indicating they did not intend to include these disciplines in their future practice. In addition, northern trained residents no longer wished to include family counseling, while southern trained residents indicated emergency medicine and occupational health as components they no longer wished to include in their future practice. Conclusion: The northern, rural training program is supporting an interest in and intention to practice a broader scope of practice than the southern, urban program.

PS254-Exploring Facilitator Impact During a Quality Improvement Process

Shaw, Eric, UMDNJ; Looney, J. Anna; Chase, Sabrina; Stello, Brian; Crabtree, Benjamin

Context: Many quality improvement (QI) trials use external facilitators as change agents. Much has been documented about the techniques and tools facilitators use to guide change. However, little is known about facilitators working on the “front lines” in primary care practices and the ways they impact change processes in the moment. Objective: To conduct an in-depth analysis of facilitator impact during a quality improvement process in family medicine practices. Design: Data were collected as part of an NHLBI-funded quality improvement trial (Using Learning Teams for Reflective Adaptation – ULTRA). In this project, a trained facilitator guides the RAP (Reflective Adaptive Process) team through change efforts over a 12-week period. The majority of meetings were recorded. Twelve practices were selected (from a total of 56) that had completed RAP meetings and had complete sets of recordings. Authors developed a template of facilitator impact based on theoretical and experiential understandings. Listening to the same recordings, authors refined/added to the existing template until saturation was achieved. Authors then listened to additional RAP recordings individually to document examples and outcomes of facilitator impact. Setting: Twelve family medicine practices in New Jersey and Pennsylvania. Results: Nine conceptual areas of facilitator impact were identified: process; reflection; conflict; safety; socialization of new skills; strategic self-disclosure; task identification/completion; humor;

emergence. Using probes, disclosing personal information, or using humor (among other examples) can alter how team members relate to one another, to the facilitator, and ultimately how a team progresses through a change effort. Conclusions: While trained facilitators can draw on numerous tools and techniques for working with QI teams, they often have to make decisions in the moment. Identifying empirical areas of facilitator impact in this analysis provides an evidence-base for understanding facilitation that can benefit future intervention studies.

PS255-Evaluation of Impact of a Family Medicine Training in Northern Mali

Couturier, Francois, *Universite de Sherbrooke*

Context: Since 1997, the department of family medicine of the Université de Sherbrooke is operating a one month elective in Family medicine and International Health in 3 Cooperative Health Centers (CHC) in Mali. Each year 18 residents and 9 supervisors are going to Mali. A new elective will be offered next year in Mali in the northern Saharan region of Kidal. Although the visit of Canadian doctors seems to have positive impacts, it has never been formally evaluated. Objective: To elaborate an Evaluation and Monitoring protocol of the impact of the yearly visit of a group of Canadian doctors on the quality of care in the Kidal health center. Design: Prospective case control observational study: Identification and validation of adequate and workable indicators, baseline evaluation of the Kidal CHC and two other comparable CHC and yearly evaluation of chosen outcome data. Setting: Primary health care centers in Kidal, Mali. Participants: Population attending the CHC, staff of the CHC, residents and faculty of the University of Sherbrooke. Instruments: Epidemiologic data, administrative data, patients and staff questionnaires. Outcomes: Medical and nursing staff satisfaction, staff retention, clinic attendance, patient satisfaction, standard of care for most prevalent infectious diseases, epidemiological data (under 5 year old mortality, maternal mortality). Results: The data collected on the July 2006 visit to Mali (validation of indicators and baseline evaluation) will be presented. The planning other prospective evaluation will also be presented. Conclusions: We hypothesize that a family medicine elective in Mali has a positive impact. If verified, family medicine a low technology and low cost intervention could be implemented outside the frame of this elective.

PS256-Holistic Approach to Patient Evaluation: Observable Behaviors

Pelissier-Simard, Luce, *Universite de Sherbrooke*; Donovan, Denise; Khignesse, Marianne

Context: Much of the clinical work of family physicians centers on the three levels of prevention of chronic disease and the management of patients affected by it. However, medical evaluation using the traditional disease-centered approach is more suited to acute illness. A number of care models seek to understand the patient as a whole in his/her context: eg holistic approach, patient-centered, integrative medicine. Although

these concepts are gaining ground in medical teaching, they are inconsistently applied in clinical practice. This makes it difficult to translate them into assessable behaviors in the clinician in training. **Objectives:** Determine which observable behaviors of a clinical clerk or resident demonstrate a holistic approach to patient evaluation. **Design:** qualitative research: semi-structured interviews of key-informants - experts in the holistic approach and in medical education as well as selected residents who demonstrate a holistic approach. **Setting:** The research will be carried out by the Family medicine department of the Sherbrooke Faculty of medicine and health sciences. Key-informants will be members of this Faculty and experts from related domains in Québec, Canada **Intervention:** interviews. **Main outcomes:** list of observable behaviors organized according to theme. **Conclusion:** the challenges of this research design will be discussed and the preliminary results will be presented. The final results will contribute to the development of tools for measuring competence in the holistic approach. These tools will make explicit the values and criteria already used implicitly in evaluating students and will, eventually, aid in determining the effectiveness of methods of teaching.

PS257-Family Physicians' Roles in Care and Prevention of Fragility Fractures in Midlife Women

Meadows, Lynn, University of Calgary; Mrkonjic, Linda; Lagendyk, Laura; Tink, Wendy

Context: Research has established that fragility fractures, even in the 40s and 50s are predictive of future fractures. While fracture treatment is not a routine element of their scope of practice, family physicians are in an ideal position to work with their patients to reduce the risk, and even prevent, secondary fragility fractures. **Objectives:** This study asked family physicians to describe their current practice around fracture treatment and prevention in order to identify their current role and information needs. **Design:** Cross-sectional survey using a mailed questionnaire to gather data from across the province. Initial mailings were followed up by phone, fax and mail reminders. **Setting:** The sampling frame included all family physicians registered with the provincial chapter of the College of Family Physicians of Canada (CFPC). **Participants:** A current list registered family physicians was purchased from the CFPC, Alberta Chapter. **Instrument:** An 8 page survey gathered data from family physicians, focusing on fragility fractures in patients aged 40 - 65, before established osteoporosis and. **Results:** Surveys were returned by 327 of 989 possible respondents. More female physicians than males responded. Family physicians were already familiar with dietary and supplemental adjuncts for addressing bone loss. They overwhelmingly expressed a need for detailed information about risk factors for low bone density and fractures in non-geriatric patients. Information regarding interpretation of BMD results may be a next step. **Conclusion:** The need for educational materials developed specifically for use in

family practice to work with patients on issues related to fracture risk is clear. Twenty five percent of our sample agreed to be contacted for focus group interviews. Those data will allow tailoring of educational materials and practice delivery tools that support family physicians in playing a significant role against the threat of secondary fragility fractures and the onset of osteoporosis.

PS258-Rising to the Top: Predictors of Admission Success in the Alberta International Medical Graduate (AIMG) Program

Palacios-Derflinger, Luz, University of Calgary; Crutcher, Rodney; Gilligan, Margot

Context: There are substantial physician shortages in Alberta, Canada. The AIMG Program selects International Medical Graduates (IMGs) for residency training to help address Alberta's workforce needs. Knowledge of the educational and demographic characteristics of a successful applicant is important to AIMG program policy and practice and may also contribute to health workforce theory. **Objective:** To describe the characteristics of a successful AIMG program applicant. **Design:** Observational study, retrospective. Statistical analyses will be performed on the AIMG Program dataset, which spans six applicant cycles (2001-2006). There have been 367 applicants from 55 different countries over this interval. 347 have declared an interest in family medicine. 314 were invited to the OSCE exam, of which 189 were invited to the interview. The analyses will be performed on the applicants invited to the OSCE exam who also declared an interest in family medicine training. A descriptive analysis will be performed on these applicants, and subsequent analyses will include a logistic regression technique as the response variable is dichotomous (accepted / not accepted in the program). **Setting:** Alberta, Canada. **Patients or Other Participants:** Physicians who studied abroad and meet specific criteria, including: Alberta residency, medical degree from a W.H.O. recognized medical school, success on the MCCEE, MCCQE1 and TOEFL, and OSCE with or without an Interview invitation. **Intervention/Instrument:** None. **Outcome Measures:** Characteristics predictive of success for AIMG program applicants. **Results:** The research is in progress. Characteristics such as English language proficiency, length of time out of clinical practice, OSCE performance and interview performance are expected to be factors contributing to applicant success. **Conclusions:** Our results, when available, will be of interest to program applicants, educational stakeholders and the wider family medicine community. Our findings will contribute to the substrate for evidence-based decision making in health workforce planning.

PS259-Evaluation of one Primary Care / Family Medicine Research Web Site

Gomez-Clavelina, Francisco Javier, Universidad Nacional Autonoma de Mexico; Beasley, John; Jimenez-Galvan, Irma

Context: The internet online support for Primary Care/Family medicine Research is currently more frequent. There are

several web-sites for researchers which offer technical support or even on line courses about methodology and statistics. The evaluation of these web sites for researchers is necessary both for users and web-site designers to improve the heuristic components of the web-site and its usefulness for researchers. **Objective:** To evaluate the heuristic components as well as users' perceptions of usefulness of the International Federation of Primary Care Research Networks (IFPCRN) Web-site. **Design:** Expert heuristic evaluation and international survey to IFPCRN Web-site users. **Setting:** International Primary Care/Family medicine researchers/research networks. **Participants:** Three experts on Web site design and evaluation, 150 IFPCRN members of 32 countries. **Intervention:** During June-July, 2006, using the Alexander/Tate test, experts will evaluate the heuristic components of IFPCRN Web site, one questionnaire to explore users' perception of usefulness will be applied on July 2006. **Outcome Measures:** Eight heuristic components of IFPCRN Web site from the three experts' reports. The users' perception questionnaire will be quantitative and qualitative analyzed. **Results:** With experts' reports, the IFPCRN Web site will be improved. The users' answers will be used for the implementation of new useful characteristics to the IFPCRN Web site. **Conclusions:** The evaluation of any Primary Care/Family medicine Research web site must be done considering heuristic components and users' surveys. The evaluation of these web sites for researchers is necessary both for users and web-site designers to improve the heuristic components of the web-site and its usefulness for researchers.

PS260-Recommendations for "Best Practices" in Accessing Institutions for Interprofessional Collaboration Research in Multi-site Settings

Beales, Jennifer, University of Toronto; Oandasan, Ivy; Zwarenstein, Merrick; Sinclair, Lynne; Gotlib Conn, Lesley; Reeves, Scott; Lingard, Lorelei; Miller, Karen-lee
Context: The manner in which a research team should go about accessing institutions for interprofessional collaborative research remains undocumented and relatively unclear. This poster presents recommendations for 'best practices' in fostering collaborative relationships within academic teaching hospitals, at multiple levels of these institutions, and across three distinct hospital **Setting:** General Internal Medicine; Primary Care; and Rehabilitation Care. **Methods** Over the course of a twelve-week period, a project coordinator proceeded to contact upper level hospital administration, educational representatives, and ground level health care practitioners across the various hospital settings. An introductory communication letter 'opened a door' to facilitate communication via telephone call, e-mail exchange, face-to-face interchange, and formal and informal group meeting. Each communication exchange was documented by the project coordinator and verified by a research associate. This process gleaned hundreds of interactions that were

organized according to 'type' and 'result' of interaction. **Results:** Analysis of the various modes of communication identified similarities across hospital settings; however, marked differences are recognized as a result of hospital structure, and the manner in which clinical teaching units are organized. The findings are presented in a manner of 'best practices' according to the successes and roadblocks encountered by our research team. **Conclusion:** These findings suggest that an effective strategy requires time, patience, and above all, collaboration of health care practitioners found at all levels of the academic teaching hospital. While identifying opportunities and acknowledging obstacles in accessing multiple layers of hospital administration and organization structure, we present strategies to make this process easier for subsequent research teams.

PS261-Preschool Vision Screening: A Survey of Family Medicine Residents' Education Experiences and Practice Habits

Hoffman, Mary, University of Missouri-Columbia

Context: Little is known about the preschool vision screening habits of family physicians. Prior studies of pediatricians have indicated poor compliance with vision screening guidelines. No past studies have addressed how family medicine residents are educated regarding preschool vision screening. **Objective:** To determine how family medicine residency educational experiences relate to perceived skill in vision screening and to practice habits. **Design:** Nationwide mailed, self-administered survey of family medicine residency graduates who completed residency in 2004, inquiring about their residency experiences, perceived confidence in screening skills, practice habits, and perceived barriers to screening. **Participants:** 700 subjects were randomly selected from the AAFP's list of active members who had completed residency in 2004. **Results:** 274 surveys were received (39.3%). 33% of respondents reported no training during residency and either learned only through their own study or not at all. Respondents indicated high confidence in their abilities to perform pupil exams, red reflex testing, and evaluating ocular motility, but had only moderate confidence in their abilities to perform tests of ocular alignment, and few feel very competent to perform funduscopic exams. Those with one-on-one instruction were more likely to report high confidence in ocular alignment testing. Those who considered themselves "very competent" at performing tests for ocular alignment were more likely to report adherence to the USPSTF guidelines for preschool vision screening. 64% of respondents screen in accordance with USPSTF guidelines. Those reporting no education are less likely to meet guidelines than those with any education. **Conclusions:** Residency education experiences in preschool vision screening appear to affect physicians' confidence levels and later practice habits. One-on-one instruction is most closely related to increased confidence in alignment testing, but any education versus none is also associated with increased skill levels and practice. This has implications for design of future residency educational interventions.

GERIATRICS (PS262-PS267)

PS262-Use of Drug Interaction Software for Managing Polypharmacy and Predicting Adverse Drug Events in the Elderly

Birch, James, University of Missouri at Columbia; Mehr, David; Vinson, Daniel; Kruse, Robin

Context: Polypharmacy is a significant problem for the elderly. One of many problems is drug-drug interactions (DDIs). Drug interaction software has been available since the 1970's. **Objective:** To evaluate the ability of three drug interaction software programs to detect adverse drug events (ADEs) resulting in inpatient hospitalization or ER visits, that may be plausibly due to DDIs in patients >65 years of age. **Design:** Retrospective cohort study of a random selection of 250 patients. **Setting:** University teaching hospital using medical record chart review. **Patients or Other Participants:** Inclusion criteria were all patients 65 years of age and older who were readmitted to the hospital within 30 days of discharge to the ER, 23-hour observation, or any inpatient service. Exclusion criteria are described. **Intervention/Instrument:** Three (3) drug interaction software programs were used to identify all potential DDIs for the combination of medications being taken by qualified study participants. **Outcome Measures:** The main outcome variables were the percentage of DDIs predicted by each software program that were plausibly related to readmission within 30 days, which were rated on a Likert-type scale of "likelihood." Other outcome variables are included in the study. **Results:** This project is still in progress. Between the three (3) drug interaction software programs, a range of 12-16% of the DDIs identified by the software output are plausibly related to readmission. The moderate ratings of severity were the most common. **Conclusions:** Drug interactions software programs are known for producing many false signals. We should be able to use the data output to guide us in adjusting the medications to a lower risk rating or severity level. Use of the software can guide us to make better medication choices and potentially limit the frequency of ADEs due to DDIs in our elderly patients.

PS263-Practice Patterns in Evaluation and Management of Dementia Among Primary Care Residents, Primary Care Physicians, and Geriatricians

Imtiaz, Saira, Baylor Family Medicine Residency at Garland; Moss, Shannon; Nair, Rajasree; Tingle, Leslie

Context: In the US, the number of individuals above age 65 is expected to double by 2030. Given that the number of geriatricians is not increasing at a similar rate, family medicine and internal medicine physicians will be uniquely poised to be the first to identify cognitive changes indicative of dementia. Unfortunately, studies to date indicate that primary care providers often fail to identify dementia. One potential reason for this is lack of comfort with dementia screening and diagnosis due to lack of adequate training. However, no prior research has evaluated the relationship

between amount of dementia training and physician comfort in identifying and managing dementia. **Objectives:** To determine if amount of geriatric training is correlated with rate of and comfort with dementia identification and management. To compare specialties' evaluation and management of dementia. **Design:** A web-based survey link was emailed to Family Medicine, Internal Medicine, and Geriatric physicians and 3rd year Family medicine and Internal Medicine residents. The survey was designed to assess physicians' and residents' evaluation and management of dementia in patients aged 65 and older. **Setting:** This study includes physicians and residents in academic centers, community hospitals, and private practice. **Participants:** Family medicine, Internal Medicine, and Geriatric physicians in Dallas County and in the Health Texas Providers Network and 3rd year residents in Family medicine and Internal Medicine programs in Texas completed the survey. Residents and physicians without access to the internet would, by nature of the survey, be excluded. **Instrument:** A 28-item web-based survey was designed for use in this study. It was created and maintained through the web-survey company, "Survey Solutions." **Outcome Measures:** Data collection is in progress, and is expected to be complete by 5/1/06. Primary statistics to be employed in this study include Pearson correlations and t-tests. **Results:** Pending study. **Conclusion:** Pending study.

PS264-Analysis of End-of-life Care in Elderly Military Beneficiaries: A Pilot Study

Unwin, Brian, Uniformed Services University; Wilson, Cindy; Olsen, Cara

Context: Care of elderly patients develops the necessary clinical skills needed by future physicians regardless of ultimate medical specialty. Characterization of the end-of-life (EOL) care experience for elderly military beneficiaries has never been conducted. These data will determine whether EOL care in the military managed care setting is comparable to, or exceeds care recommended by national standards. **Objective:** This descriptive study will examine available inpatient and outpatient medical records over the last three years of life and compare results to national standards. **Design:** Site investigators (SIs) will undergo standardized training in the use of standardized chart audit instruments. SIs will perform random chart audits on all available inpatient and outpatient records, assessing identification and treatment of common geriatric related conditions and health care utilization trends. **Setting:** Eight military hospitals engaged in graduate medical education with sufficient a geriatric-aged patient population were selected for study. **Patients or Other Participants:** A ten percent random record sampling of all geriatric aged deaths in all military hospitals will be conducted, resulting in approximately 110 beneficiary chart reviews. **Instrument:** Inpatient and outpatient chart abstraction tools. **Outcome Measures:** This study will characterize the last three years of life of elderly military beneficiaries by examining their demographic characteristics, disease burden and healthcare utilization. It will also evaluate the military

health system's compliance with EOL quality standards and use of appropriate medications. Evaluate outpatient care received during EOL care. **Results:** Data collection is in progress. Results of this study will be used to improve quality of care within military hospitals using performance improvement processes. Characterization of EOL experiences will enhance military health care planning by providing necessary data to project the care demands of this population. **Conclusions:** Study complexity and multi-site project management issues with suggestions for "work-arounds" to accomplish project goals will be presented.

PS265-Psychometric Analyses of the WHOQOL-Old Pilot Module: A Quantitative Stage in Instrument Development

McCrate, Farah, University of Bath; Skevington, Suzanne
Context: Although most quality of life (QoL) measures are developed for younger age groups and perform satisfactorily with older adults, they often fail to address relevant issues from older perspectives. Development of an older adult-specific measure, entitled the WHOQOL-Old, will enable comprehensive assessment of QoL in older adults based on the issues that are important and relevant to them. Possible uses of the instrument include large-scale, normative surveys of QoL, assessment of the efficacy of treatments/interventions and data collection for the purpose of informing policy. **Objective:** To develop a generic, cross-cultural, older adults', quality of life instrument in collaboration with the World Health Organization and 23 countries worldwide. **Design:** A quantitative pilot survey, as a stage in instrument development. **Setting:** Questionnaires were mailed to participants at their homes and were returned to the researcher by self-addressed, stamped envelope. **Participants:** Participants were recruited from two family practice clinics and various community organizations. After data checking/cleaning, 300 valid cases were retained. Age was recorded by subgroup: 60-69 (n=90), 70-79 (n=129) and 80+ (n=78). There were 122 men and 177 women. **Outcome Measures:** A pilot version of the WHOQOL-Old was distributed to each participant along with the validated, generic WHOQOL-100 quality of life instrument. **Results:** Frequency and scale reliability analyses highlighted psychometrically weak items on the pilot measure and the number of items was reduced from 40 to 32. Two of the facets (Use of Time and Participation/Isolation) were sufficiently reduced to be amalgamated into one named Social Participation. A new, 6-item facet on Intimacy was also added. **Conclusions:** Subsequent to the pilot survey, the WHOQOL-Old is a more reliable and valid instrument. The next stage will be to conduct a field trial after which further analyses will be done including convergent validity testing and test-retest reliability.

PS266-A Study of Dizziness and Related Symptoms in Older Persons in Primary Care

Modawal, Arvind, University of Cincinnati; Yang, Jun; Shukla, Rakesh

Context: Dizziness is a common symptom experienced by older adults over 75-years of age. It is a challenging clinical problem requiring further study due to multiple factor causality and lack of clear guidelines for primary care. **Objective:** To identify and describe older persons with dizziness and related symptoms, seeing Family Physicians. **Design:** An Observational study, medical chart reviews of patients with a diagnosis of dizziness (billing ICD-9 code 780.4) **Setting:** Urban academic family medicine center. **Patients:** Study population of 102 patients over 65 years of age and total of 270 office visits during a three-year period. **Instrument:** Data on dizziness and related symptoms was extracted for details of history, physical examination, co-morbid pattern, medications, functional status, falls and injuries, investigations requested, specific diagnosis made, medications used or changed to treat, and referrals made by Family Physicians. **Outcome Measures:** Of all 199 visits for documented dizziness, 23 had documentation suggesting pre-syncope and syncope, 22 Balance and disequilibrium disorder, and 17 with Vertigo. 16 experienced Falls but without fracture or injury. **Results:** 102 patients accounted for 270 visits for dizziness and related symptoms. Co-morbid factors included hypertension 60%; diabetes mellitus 19%; lipid disorders 15%; coronary artery disease 13%; depression 5%. Physical examination revealed 43 visits had documentation for Orthostatic BP changes, 17 visits with cardiac findings or a murmur. Romberg's and neurological exams (43) were well performed compared to Hallpike-Dix procedure (2) and carotid bruit documentation (4). 7% used assistive devices; 8% had mobility problems; and 5% had hearing problems. Other findings were either absent or not documented particularly psychogenic aspects of dizziness. **Conclusions:** A large number of patients with dizziness had ambiguity of description in clinical encounters in this observational study. Research to improve documentation for dizziness symptoms is needed in primary care to better understand this complex symptom.

PS267-Does Neuro-stimulants Use Improve Functionality in Patients With Decreased Level of Consciousness?

Diviney, Erin; Pop, Claudia; Summers, Mark; Menawat, Sunil; Worzniak, Michael; Menawat, Sunil, Oakwood Annapolis Hospital

Previous studies have shown an effect of improved level of consciousness in patients with coma with use of Methylphenidate (1). We were interested in evaluating patients in sub-acute rehab who were failing to progress and by OBRA guidelines would have been subjected to lose there independence and be placed in long term care. These patients had functional deficits that give them a high Disability Rating Score (DRS). We designed a study following a protocol previously used in clinical practice by one of the PI in treating

similar patients. Prior to inclusion, patients were deemed medically stable for CHF, infection, electrolytes and neurological function. Those patients with an initial DRS score greater than four were included. A test dose of 5 mg methylphenidate (at 6 am & 12 noon) was given. After two days, the dose was increased to 10 mg, twice daily. If the DRS remained greater than 4 the dose was increased for a maximum of 20 mg twice daily. Patients were evaluated biweekly. Population studied included ten patients (3 males and 7 females) the average age was 85.4 years. The average initial DRS was 17.3 and the average final DRS was 6 ($P=0.04 \times 10^{-5}$). The most notable difference was in the categories of Arousability, Awareness & Responsivity and in Cognitive Ability for Self Care Activities. What we called "Cooperative Ability". This portion of the DRS improved from an initial average of 9.8 to a final value of 1.6 ($P=0.04 \times 10^{-5}$). No complications occurred in the study period. Methylphenidate appears to stimulate the neurons in the reticular activating system of the midbrain, which seem to function to establish general consciousness. Our data suggests that improved consciousness improves functionality. There is a cumulative effect, suggesting learning or revival of previously learned behavior. Improved awareness can allow for active engagement by the patients and positively impact their rehabilitation to participate in activities of daily living.

PRESCRIBING PRACTICE/MEDICATION MANAGEMENT (PS269-PS273)

PS269-High Levels of Satisfaction Reported by Patients Receiving Services Provided by Pharmacists Integrated Into Family Medicine

Dolovich, Lisa, McMaster University; Ahmed, Shaimaa; Gaebel, Kathy; Haq, Mahbulul; Kaczorowski, Janusz; Howard, Michelle; Sellors, Connie; Lau, Elaine

Context: Successful integration of pharmacist services into family medicine is an emerging role for pharmacists. Patient evaluation of this new role can provide important information to improve service and patient outcomes.

Objective: to determine patient satisfaction with services provided by a family practice pharmacist. **Design:** Cross sectional survey. **Setting:** Seven family medicine sites in Ontario participating in the Integrating family medicine and Pharmacy to Advance Primary care Therapeutics (IMPACT) project. **Patients:** Patients who had an initial consultation and at least 1 follow-up assessment with one of seven pharmacists working in a collaborative care model. **Instrument:** A validated 30-item, 4 domain questionnaire, the Pharmaceutical Care Satisfaction Questionnaire (PCQS), was mailed to each patient. **Outcome Measures:** Total score was the main outcome measure. The PCSQ contains patient evaluations of medication understanding and empowerment unlike other satisfaction surveys. Items were rated on a 5-point Likert-type scale. Multivariate linear regression analyses that included age, sex, number of medical

problems, number of medications, practice site, and referral strategy were tested as predictors of patient satisfaction.

Results: Response rate was 77% (223/289). Mean overall patient satisfaction score was 121.7/150 (SD, 15.8). Subscales scores were: patient understanding 33.5/45 (SD, 5.2); provision of pharmaceutical care 50.6/60 (SD, 7.0); patient empowerment 21.2/25 (SD, 2.9); and pharmacist-patient relations 16.4/20 (SD, 3.4). There were no differences in patient satisfaction dependent on the strategy used to refer patients and no variables tested were significantly associated with satisfaction score. **Conclusions:** The high level of patient satisfaction suggested a smooth integration of pharmacist service into family practices. The association between satisfaction and patient outcomes will be evaluated in future analyses.

PS270-Integrating a Clinical Pharmacist Into a Primary Care Network

MacKeigan, Linda, University of Toronto; Ellison, Philip; Marshman, Joan; Cockerill, Rhonda; Smiley, Tom; McDonald, John

Context: In Canada, a government report has recommended a team-based health management approach for integration of prescription drugs with primary care. In this approach, the pharmacist interacts with both patients and physicians to ensure appropriate prescribing and use. Most community pharmacists and family physicians, however, do not practice collaboratively. **Objectives:** To use a systematic, collaborative process to develop a pharmacist's primary care practice model; evaluate the feasibility and usefulness of the process; and implement and evaluate the model. **Design:** Case study with multiple data sources: chart audit, patient survey, interviews with physicians and other practice members, time and motion study of administrative staff, pharmacist activity log and service documentation forms. **Setting:** Primary care network in southwestern Ontario consisting of 6 family physician practices and 12,000 rostered patients. **Participants:** Model development team (MDT) of 2 physicians, nurse practitioner, nurse-receptionist, pharmacist; 4 other network physicians; 221 patients referred to the pharmacist. **Intervention:** Practice model developed in 3 phases: needs assessment, model specification, and implementation. Pharmacist's clinical services, documentation, physician-pharmacist communication system, time allocation among practices, and staff support specified. Pharmacist worked at physicians' offices 2 days weekly for 6 months. **Outcome Measures:** Medication-related indicators for 3 features of primary care, 3 medication-related goals, patient satisfaction, physician satisfaction and pharmacist workload. **Results:** 213 medication reviews (identifying 93 inaccurate medication lists and 531 medication problems), 10 patients trained to self-manage warfarin dosing, community outreach seminars on warfarin treatment and blood pressure medications; progress toward system for exchanging medication lists between hospital and network physicians. Physicians were very satisfied, perceiving little negative impact on practice

workload. **Conclusions:** A systematic, collaborative process for developing a pharmacist's primary care practice model is feasible from participants' perspective, and transferable to other health professionals. Keys to model success are collaborative planning, physician identification of suitable patients and face-to-face communication of drug therapy recommendations.

PS271-Collaborative Working Relationships Between Family Physicians And Pharmacists: Changes Over Time As Pharmacists Integrated Into Family Medicine
Farrell, Barbara, SCO Health Service; Woodend, Kirsten; Pottie, Kevin; Yao, Vivian; Dolovich, Lisa; Kennie, Natalie; Sellors, Connie

Context: Collaborative working relationships (CWR) may be influenced by many factors as health care professionals learn to work together in the primary care setting. **Objective:** This study evaluates change over time and predictors of change as pharmacists integrated into family medicine settings. **Design:** A CWR questionnaire validated with family physicians and community pharmacists (covering a variety of participant variables, professional interactions, exchange characteristics and collaborative practice) was administered at 3 and 12 months. Family physicians completed the questionnaires considering their practice pharmacist and pharmacists completed questionnaires regarding each physician with whom they worked. Paired sample T tests were conducted for physician-completed questionnaires. Effect sizes were calculated for each pharmacist and meta-analytically combined. Hierarchical linear regression analysis was performed to identify significant predictors of collaborative relationship development. **Setting:** 7 pharmacists integrated into 7 family medicine clinics in the IMPACT (Integrating family medicine and Pharmacy to Advance primary Care Therapeutics) project. **Participants:** Family pharmacists, family physicians, nurses and office staff of participating sites **Intervention:** Integrated pharmacist provided patient medication assessments, drug information, academic detailing and developed office system innovations to optimize drug therapy. **Results:** Response rate was 87% and 88% for the two survey administration times. Paired sample t test revealed significant increase in physicians' collaborative practice score ($P < 0.05$) over time. Regression analyses showed significant predictors (eg. role specification) of the development of collaborative working relationships at the 12 month point. Meta-analytically combined effect sizes of the pharmacist-completed questionnaires showed small positive effects in four variables and a large negative effect in one variable. **Conclusions:** We successfully used this questionnaire to measure CWR between pharmacists and physicians working together in family practice and to evaluate change over time. Role specification as a predictive factor of CWR development highlights the importance of clear roles and responsibilities as pharmacists integrate into family medicine.

PS272-Physician Communication About the Costs of Newly Prescribed Medications

Tarn, Derjung Mimi, UCLA; Paterniti, Debora; Heritage, John; Hays, Ron; Kravitz, Richard; Wenger, Neil

Context: High medication costs and unaffordability are associated with non-adherence. However, little is known about how often physicians discuss these issues when prescribing new medications, or about the content of these discussions. **Objective:** To describe the frequency and content of physician discussions about the cost and acquisition/supply of new medications. **Design:** Qualitative-quantitative study combining grounded qualitative analysis of audiotaped office visits with patient and physician surveys. **Setting:** Outpatient clinical encounters with 16 family physicians, 18 internists and 11 cardiologists working in two healthcare systems in Sacramento, CA. **Participants:** 185 patients receiving a total of 243 new medication prescriptions. **Outcome Measures:** Physician fulfillment of counseling about cost and other acquisition/supply discussions. **Results:** Physicians discussed cost or insurance coverage for 12% of the newly prescribed medications, discussed logistics for obtaining medications for 18%, and counseled about medication supply for 9%. Patients initiated 14% of the discussions about cost or insurance, which accounted for less than 2% of the medications prescribed. Overall, discussions about medication acquisition/supply occurred for 33% of the prescriptions. In multivariate analysis, cost discussions were more likely to occur with prescription of genitourinary medications ($p < 0.01$), and with patients earning less than \$20,000 per year ($p < 0.01$). They were less likely to occur with medications prescribed by family physicians ($p < 0.01$) or internists ($p < 0.05$) compared with cardiologists, prescribed in a health maintenance organization setting compared to a fee-for-service setting ($p < 0.05$), or prescribed to older patients ($p < 0.01$). **Conclusions:** Medication cost and other acquisition issues may not occur as frequently as needed during physician-patient communication about new medications, and patients rarely initiate discussions about cost or insurance coverage if physicians do not broach the topic first. Physician awareness and discussion of potential patient difficulties with these issues may increase patient ability to obtain new prescriptions.

PS273-Sildenafil Is Well Tolerated and Effective in Men With Both Erectile Dysfunction and Lower Urinary Tract Symptoms

Young, Jay, South Orange County Medical Research Center; McVary, Kevin; Tseng, Li-Jung; van den Ende, Gené

Context: Studies have shown that the links between erectile dysfunction (ED) and lower urinary tract symptoms (LUTS) are complex, and the 2 conditions may share a common mechanism. **Objective:** Few studies have examined the use of sildenafil citrate (Viagra®) for LUTS. We assessed the efficacy and tolerability of sildenafil in men with ED and LUTS associated with benign prostatic hyperplasia (BPH).

Design: Multicenter, 12-week, double-blind, placebo-controlled study. **Setting:** Urology clinics. **Patients:** Men ≥ 45 years old; Erectile Function (EF) domain score ≥ 25 ; International Prostate Symptom Score (IPSS) ≥ 12 . Men with PSA > 10 ng/mL were excluded. **Intervention:** 50 mg sildenafil or matching placebo nightly or 30–60 minutes before sexual activity. After 2 weeks, dose was titrated to 100 mg with the option of returning to 50 mg. **Outcome Measures:** Primary endpoint was change in EF domain score. Secondary endpoints included changes in total IPSS score, IPSS subscores for irritative and obstructive symptoms, a quality of life (QoL) question, the Benign Prostatic Hyperplasia Impact Index (BPHII), and maximum urinary flow rate (Qmax). **Results:** 366 men were included in the ITT analysis. Men receiving sildenafil (vs placebo) demonstrated significantly ($P < 0.0001$) greater mean (95% CI) improvement in EF domain (9.2 [7.3, 11.1] vs 1.9 [–0.03, 3.7]) and IPSS scores (–6.3 [–8.1, –4.6] vs –1.9 [–3.7, –0.2]). Secondary endpoint measures were also significantly ($P < 0.0001$) improved in sildenafil- vs placebo-treated men. Qmax was not different between groups. Satisfaction with treatment was significantly ($P < 0.0001$) higher in patients who received sildenafil. Adverse events were mild to moderate and transient. **Conclusions:** Sildenafil taken daily is well tolerated and improves erectile function and urinary symptoms in men with ED and LUTS. Improvement in LUTS, but not Qmax, with sildenafil is comparable to that achieved with α 1-blockers, and was associated with improved QoL.

HEALTH PROMOTION/DISEASE PREVENTION (PS274-PS290)

PS274-There's No Way I Could Catch HIV: Examining HIV Perceptions in the United States Using a National Health Survey

Young, Denise; Dodoo, Martey, The Robert Graham Center; Demissie, Kitaw

Context: Primary care professionals struggle with rising trends in HIV infection in this country. Although strides have been made in the treatment arm of this battle, gains on the prevention arm have stalled. To optimize prevention, one must "know" those populations at risk. This study seeks the national evidence on HIV perceptions and their risks of contracting the disease. **Objectives:** Compare perceptions of chances of contracting HIV virus to actual risk of contracting HIV among racial/ethnic and gender groups. Determine target population for effective primary care prevention education. **Design:** A retrospective study focused on responses to the STD, risky and sexual behavior questions of National Health Interview Survey (NHIS) of 2000 to 2003. Assessed population perceptions of chances of contracting HIV. Examined relationship between perceptions and risky behaviors. Compared perceived versus actual risk of contracting HIV among racial, ethnic and gender groups in the population. **Outcome Measures:**

Proportion of persons with low perceived risk of contracting HIV. Proportion of persons engaging in behaviors putting them at risk for contracting HIV. **Results:** About 5.4 million people nationwide believe they have low/no chance of contracting HIV but engage in risky behaviors. They averaged 33 years old compared to 35 years old for general population ($se = 0.21$). About 66% have seen a primary care doctor in past 12 months, and more than half have been tested for HIV in the last year. **Conclusion:** A significant proportion of the US population engage in risky behaviors and believe their chances of contracting HIV are low or none. This disconnect between behavior and perceived risk ultimately contributes to the spread of HIV. Public health and primary care professionals should target prevention efforts towards this subpopulation to impact the rate of new infections in this country.

PS275-Patient Perspectives on Reminder Letters for Influenza Vaccinations in an Older Primary Care Patient Population

Anderson, Kelly; Kaczorowski, Janusz; Karwalajtys, Tina, McMaster University; Lohfeld, Lynne; Sebaldt, Rolf J.; Donald, Faith; Burgess, Kenneth; Goeree, Ron

Context: There is substantial evidence supporting the use of patient reminder letters to increase the uptake of influenza vaccinations; however, few studies have explored patient perspectives on reminder letters. **Objective:** To explore the perspectives of older adults on the acceptability of reminder letters for influenza vaccinations. **Design:** Population-based survey. **Setting:** 23 family practices across Ontario. **Participants:** We randomly selected one family physician from each of 23 Family Health and Primary Care networks ($n = 249$ physicians) participating in a demonstration project (P-PROMPT) designed to increase the delivery of preventive services in Ontario. From the roster of each physician, we surveyed up to 35 randomly selected patients over 65 years of age who received a reminder letter regarding influenza vaccinations from their physician. **Instrument:** Surveys were mailed within three months of the reminder letters. Non-responders received a follow-up survey five weeks later. **Outcome Measures:** Patient perspectives on the acceptability and usefulness of reminder letters. **Results:** 85.3% (654/767) of patients completed the survey. Respondents had a mean age of 74 years ($SD = 6.9$), 60.9% were female, and 82.3% reported receiving a flu shot. Of the 63.9% of respondents that recalled receiving the reminder letter, 77.2% found it helpful. Of the respondents who recalled the letter and received a flu shot ($n = 343$), 11.3% indicated they might not have done so without the letter. The majority of all respondents indicated that they would like to receive reminder letters for influenza vaccinations (62.7%) and other preventive services (76.8%) from their family physician. **Conclusion:** Although a significant number of respondents did not recall receiving a reminder letter regarding influenza vaccinations from their family physician, the overall attitude of older adults towards reminder letters was favorable and the reminders were responsible for a modest increase in vaccination rates.

PS276-Design of a Community-randomized Trial of the Cardiovascular Health Awareness Program (CHAP)

Chambers, Larry; Kaczorowski, Janusz; Karwalajtys, Tina, McMaster University; Dolovich, Lisa; Farrell, Barbara; McDonough, Beatrice; Sebaldt, Rolf J.; Levitt, Cheryl; Hogg, William; Thabane, Lehana

Context: Community-level interventions are a promising strategy to improve the cardiovascular health of populations. Evidence from large-scale pragmatic community-level trials can inform health policy decision-making. Since 2001, we have conducted pilots and community-wide demonstration projects to develop and test aspects of CHAP and evaluation approaches in preparation for a community-level trial.

Objective: To synthesize lessons learned from CHAP studies and design a community-level trial in medium-sized cities/towns across Ontario. Considerations in design included: defining communities for program delivery and evaluation, stratification and potential confounding issues, standardizing interventions, power calculations, statistical analyses, and selection of appropriate endpoints. **Design:** Cluster community-randomized trial. **Setting:** CHAP seeks to involve all local pharmacies and family physicians. The CHAP sessions are held in pharmacies over ten weeks, and family physicians are encouraged to participate by inviting eligible patients and receiving session results. **Participants:** Community residents aged 65 years and older are invited using one or more strategies, including a letter from the family physician, to attend at least two sessions.

Intervention: Trained volunteer peer health educators ensure accurate blood pressure measurement and record readings and self-reported cardiovascular risk factors for distribution to participants, family physicians, and regular pharmacists. **Results:** The trial includes 39 eligible cities/towns, stratified by geographic location and population aged 65 years and older, and randomly allocated to CHAP or no intervention. Emphasis was placed on ensuring fidelity and strength of the intervention. The study is powered to detect a 21% reduction in the mean rate of hospital admission for acute myocardial infarction, congestive heart failure, and stroke (composite primary end-point) for residents 65 years of age and older during the year following implementation of CHAP in program compared to control communities, using routinely-collected, population-based administrative data. **Conclusions:** The community-level trial of CHAP highlights considerations in design and evaluation of community-wide health promotion initiatives.

PS277-A Systematic Review of Colonoscopies Performed by Family Physicians

Wilkins, Thad, Medical College of Georgia; LeClair, Bruce; Thomas, Andria; Davies, Kathy; Taylor, Marcia; Strayer, Scott

Context: Colorectal cancer (CRC) is the 3rd most prevalent cancer in the US CRC mortality is reduced if cancer is diagnosed early or if polyps are detected and removed. Family physicians may play an important role in expanding

CRC screening in primary care by offering screening colonoscopy in their practice. **Objective:** The aim of this study was to systematically review the evidence relating to the safety and efficacy of colonoscopies performed by family physicians. **Design:** We conducted an unrestricted search from the MEDLINE and EMBASE bibliographic databases to July 2005 using the terms family physician, family practice, general practice, general practitioner and primary health care in addition to the term family medicine. Specific aspects of the colonoscopy procedure were searched for including clinical practice standards, complications associated with colonoscopy, and resident/medical education regarding this procedure. We also manually searched bibliographies of each citation to supplement the search. Investigators were contacted as needed. Studies were included if they were prospective or retrospective case series involving family physicians performing colonoscopies. Two authors independently abstracted data on study and patient characteristics. **Setting:** Colonoscopies performed by family physicians in the office setting or hospital-based endoscopy suite. **Patients or Other Participants:** Data from 11 studies (4929 patients) published between 1992 and 2005 were included in this review. **Outcome Measures:** Main outcomes included adenoma and adenocarcinoma detection rates, reach-the-cecum rates, mortality, and major complications. **Results:** The mean age was 60.3 years with 50.5% women. The adenoma and adenocarcinoma detection rates were 30.2% and 1.4%, respectively. The weighted mean reach-the-cecum rate (RCR) was 83.6% (95% CI 69.3% -97.9%) No deaths or major complications were reported. **Conclusions:** Colonoscopies performed by family physicians are safe with adenoma and adenocarcinoma detection rates within the range of published literature. Additional research is needed to determine acceptable RCR and complication rates.

PS278-Rural Family Physicians and Local Public Health Departments

Miller, Tamara, University of Arizona; Campos-Outcalt, Doug; Bazemore, Andrew; Phillips, Robert

Context: Rural family physicians are on the front lines of healthcare across the nation, making a relationship with local health departments an important tool in complete healthcare and disaster response. **Objective:** To determine what relationship exists between rural family doctors and their local public health departments. **Design:** A pilot study questionnaire developed by a principal investigator and approved by the University of Arizona IRB, was the tool utilized to obtain qualitative data for this pilot study. Rural family practice physicians from 5 US regions whose contact information was obtained from the Community Tracking Survey were contacted by phone or e-mail to participate in a telephone questionnaire. The qualitative survey data was collected by one investigator from five physicians in each of the five regions. Participant answers were recorded by hand-written documentation as the telephone survey was completed. **Setting:** The rural family physicians included in the telephone

questionnaire were all in ambulatory care practices. Most were in private practices, one physician worked in a CHC. **Patients or Other Participants:** The participants included in the study were rural family physicians in counties with populations less than 200,000 in five regions including eastern NC, northern UT, NW Washington, eastern ME, and northern IL. **Instrument:** A questionnaire developed by a principal investigator and approved by the University of Arizona IRB was administered by telephone. Questions focused on physician knowledge and utilization of local health department services. Questions regarding physician involvement in local health departments were also covered. **Outcome Measures:** Quantitative and qualitative analysis of the data are in process. **Results:** This is research in progress and data analysis is not complete. We anticipate from preliminary analysis that less than 10% of physicians are directly involved in their local health departments. Most physicians have a very limited understanding of the services provided by health departments. **Conclusions:** It appears that health departments are under-utilized by most rural physicians and lines of communication between the two groups are very limited.

PS280-Exposure to a Community-based Colon Cancer Intervention: Is the Word Getting Out?

Zittleman, Linda, University of Colorado Health Sciences Center; HPRN, Joint Planning Committee; Araya-Guerra, Rodrigo; Westfall, John; Dickinson, Miriam; Bublitz, Caroline

Context: Despite effective prevention screening methods, colorectal cancer is the second leading cause of cancer death in the United States. Population-based interventions are one way to increasing awareness of colon cancer prevention. An important but sometimes overlooked practice when studying intervention effectiveness is investigating if and how a program's message reaches its target audience. **Objective:** To assess the reach of a CDC-funded, population-based intervention study aiming to increase colorectal cancer screening (CRCS) rates in rural northeast Colorado. **Design:** Cross-sectional survey. **Setting:** Three intervention communities and their outlying regions in rural northeast Colorado. **Participants:** Local residents age 40 and older. **Intervention/Instrument:** Using community-based participatory methods, the Joint Planning Committee (JPC) developed a multi-component educational CRCS campaign. Comprised of rural community members, the JPC provided insight to rural cultures, access to local figures and organizations, and the ideas for intervention messages, materials, and dissemination strategies. The intervention heavily incorporates local residents into its materials, which include newspaper publications, community talks, and small media print materials. A random-digit-dial telephone survey will evaluate the reach of the intervention to the target population, distinguishing voluntary recall from prompted recognition of each component. **Outcome Measures:** 1) Estimated rate of exposure a) to at least one intervention

component and b) by component, and 2) the short-term effect of exposure on screening intentions and attitudes. **Results/Conclusions:** It is anticipated that the exposure rate will vary by component type. Determining the exposure rate to this intervention may help future health educators and researchers to develop feasible and effective population-based programs in rural settings.

PS281-A Chart Review on the Use of Pneumococcal Vaccine in the Recommended Population at the UTMB Family Medicine Clinic

Popp, Melissa, UTMB; Alaniz, Andres; Benavides, Luis; Gonzalez, Manuel; Nguyen, Mai; Smith, Huelen; Watson, Floyd; Carlson, Carol; Kuncharapu, Indu; Islam, Jamal; Cass, Alvah

Context: More people die from pneumococcal infections than from any other vaccine-preventable disease in the United States. The morbidity and mortality associated with these infections, as well as the cost-effectiveness of prevention make immunizations an attractive and important option for patients. As primary care physicians, preventive care should be a significant part of our patients' treatment plans. This study examines whether appropriate patients in the clinic are receiving Pneumovax vaccination to help prevent pneumococcal infections. **Objective:** To determine if patients at the UTMB Family Medicine Clinic are appropriately receiving Pneumovax immunization. **Design:** Retrospective chart review. **Setting:** Resident / faculty combined clinics in a university-based family medicine residency program. **Participants:** 450 randomly selected patients with diabetes and / or COPD and / or age over 65. Patient charts were selected for review only if the patient met one or more of the inclusion criteria. Of the selected charts, patients who had expired were excluded from the study. **Measures:** Charts were reviewed using a computer word search for pneumovax, PCV, or pneumoc. It was then noted whether the patient had received Pneumovax immunization either during care at the clinic, or if it had been noted in the chart that the patient had received the immunization at an outside facility. No documentation of the immunization being received was recorded as the patient not being immunized. Other data collected was whether the patient was a current smoker, past smoker, never a smoker, or unknown. **Results:** This is currently a work in progress, but it is anticipated that 15-20% of the appropriate patient population at the clinic is receiving Pneumovax. **Conclusions:** After completion and analysis of the data, a plan to implement a system to increase the Pneumovax immunization rate of high risk patients in the clinic.

PS282-Family Diet, Exercise Behaviors, and Readiness to Change in an Urban Primary Care Population

McKee, M. Diane, Albert Einstein COM; O'Sullivan, Lucia; Deen, Darwin; Maher, Stacia; Blank, Arthur

Context: Pediatric obesity is increasingly common in the urban community. Family-based approaches for prevention are needed. **Objective:** Preliminary analysis of health behaviors

and readiness to change for an urban primary care population. **Design:** Telephone survey, administered before a practice-based intervention. **Setting:** Six primary care practices serving low-income patients in the Bronx. **Participants:** Parents/guardians of 2-4 year old primary care patients (n=108). **Instrument:** Measures of demographics, child diet and activity (PNB), adult diet (SC-N) and exercise (IPAQ), and readiness to change family and personal health behaviors. **Results:** Responding parents were 60% Hispanic, 33% Black, 61% on Medicaid, and 48% receiving WIC assistance. Few reported poor eating habits (mean 5.26 on scale 0-12 with high scores indicating atherogenic diets), despite a mean parent BMI of 28.1 (22% overweight and 37% obese). Over half engaged in no vigorous (55%) or moderate (54%) exercise during the week, rates far below national guidelines of 30 minutes of moderate activity per day (CDC, 2006). Parents reported 43% of their children watched 3+ hours of weekday TV, in line with national averages, but above national guidelines (2 hours or less). Parents indicated children were active an average of 2.0 days per week (21% reported no activity). Few reported that their children ate poorly (mean= 11.8 on scale 0-29), although difficulty monitoring child's diet and activity was associated with poor eating habits ($r = -.21$) and less physical activity ($r = -.25$). Parents reported relatively high readiness to change [means 16.6 (diet) and 15.9 (activity) on scale of 0-21]; overweight and obese parents reported higher scores than those with normal weight. **Conclusions:** Family-based approaches should stress increasing activity levels for urban families, although closer monitoring of family diet is indicated. Prevention efforts could capitalize on parents' high reported readiness to change own and children's diet and activity.

PS283-HHS Quick Guide to Health Literacy

Robison, Stacy, US Department of Health and Human Services; Baur, Cynthia; Lomonaco, Carmela

Context: Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information to make appropriate health decisions. Individuals with inadequate health literacy report less knowledge about their medical conditions and treatment leading to poor health status. According to the Institute of Medicine, approximately one-half of adults lack the needed literacy skills to use the US healthcare system. The Quick Guide to Health Literacy was created in response to the need for research and information on how providers can include health literacy improvement in their practice. **Objectives:** Translate evidence and best practices in health literacy improvement into action steps for providers; and create multi-disciplinary, action-oriented health literacy materials. **Design:** Review and synthesize current body of research and best practices in health literacy and health communication. **Setting:** Healthcare delivery system administration and communication. **Intervention/Instrument:** The Guide was developed by the Office of

Disease Prevention and Health Promotion at the US Department of Health and Human Services and contains information for providers on how to incorporate health literacy improvement into clinical practice. A committee of government agencies reviewed the document for relevance to various provider constituencies. **Results:** The Guide contains facts, tools, and strategies for improving health literacy and is currently available. **Conclusions:** Health literacy is dependent on individual and systemic factors including: communication skills and knowledge of health topics of lay persons and providers; culture; and demands of the healthcare system including demands of the situation or context. The Quick Guide to Health Literacy includes tools for providers to assess the impact of health literacy on their practice and identify systems-level interventions to improve the health literacy of their patients. Wide dissemination of the Guide with primary care will explore its effectiveness in increasing quality clinical care and improving health literacy skills.

PS284-Perceptions of Patients With Multiple Chronic Conditions About a Collaborative Physician-Nurse Model for Promoting Physical Activity in Primary Care

Hudon, Catherine, Sherbrooke University; Fortin, Martin; Soubhi, Hassan; Almirall, José

Context: Research evidence supports the importance of physical activity in the prevention and treatment of many chronic disorders in primary care. Nevertheless, a high proportion of patients with chronic diseases do not meet the minimal recommendations for physical activity. Collaborative Physician-Nurse practices recently implemented in Quebec provide the opportunity for organizing a new model for promoting physical activity among patients with multiple chronic conditions. **Objective:** Identify perceptions of patients with multiple chronic conditions about the collaboration between Physician and Nurse to help them initiate and maintain physical activity. **Design:** Qualitative study in progress. Two focus groups were transcribed, coded and analyzed thematically. Other focus groups will be added to reach saturation. **Setting:** Ambulatory patients from family physicians' practices. **Patients:** 12 insufficiently active patients with multiple chronic conditions whose health might improve with physical activity were recruited in a convenience sample. **Results:** Patients addressed barriers to physical activity that have to be taken into account (eg wrong ideas, functional limitations, lack of motivation, time and financial limitations, fear to failure, lack of social support), characteristics expected in the collaborative model (eg adapted to patients' needs, respecting their autonomy, instructive, possibility of making groups, favoring daily activities), and perceptions about the role of physician and nurse (eg dividing tasks according to their experience and availability, periodic physician's interventions and continuous nursing care, implication of physical education professionals if needed). **Conclusions:** Perceptions of patients with multiple chronic conditions about a collaborative model for promoting physical activity is a

preliminary step that will contribute to adapting the collaborative model to their needs and expectations.

PS285-Rapid Testing for HIV in the Primary Care Setting

Simmons, Emma, Brown University; Flanigan, Timothy; Roberts, Mary; Pugatch, David; Tashima, Karen; Eaton, Charles

Context: Over a quarter of the one million people in the United States who are HIV infected are unaware of their status. Routine testing for HIV in the primary care **Setting** has the potential to make a positive impact on the currently unacceptable number of persons who are unaware of their status. **Objective:** To determine the attitudes towards and feasibility of point-of-care HIV testing in the primary care setting. **Design:** Multi-method cross-sectional study.

Setting: Primary care community health center. **Patients or Other Participants:** All patients aged 18 to 50 were eligible for participation unless physically or mentally ill. 241/305 (80%) patients completed the questionnaire and 26% of those patients underwent on-site rapid testing for HIV **Intervention/Instrument:** (1) A 37 item questionnaire measuring demographics, knowledge and beliefs, risk factors, previous HIV testing history and willingness to be tested and (2) OraQuick Advance HIV 1/2 rapid testing kit.

Outcome Measures: (1) Barriers and facilitators to acceptance of HIV testing and (2) the number of HIV tests accepted by patients. Associations between test acceptance and survey responses were examined using logistic regression with HIV testing serving as the outcome variable of interest. **Results:** Mean age 35; 63 % female; 11% Hispanic; 11% black; 46 % partnered. **Participants** were more likely to accept testing because it was offered on that day (OR=7.6; 95% CI: 2.6-22.6). **Participants** were three times more likely to accept testing if they believed they were at risk for developing AIDS (95% CI: 1.0-8.6). One heterosexual male, who tested negative two years earlier, had a reactive (and confirmed) test result. **Conclusions:** Results suggest that rapid testing for HIV in the primary care setting is both feasible and acceptable to patients. It may also be important in helping to identify those who are unaware of their risk for HIV.

PS286-Clinician, Staff, and Patient Perspectives on a Comprehensive Practice-Friendly Model for Promoting Healthy Behaviors

Devers, Kelly, Virginia Commonwealth University; **Flores, Sharon**; **Krist, Alex**; **Burgett, Amy**; **Frazier, Charles**; **Johnson, Robert**; **Jones, Resa**; **Kuzel, Anton**; **Rothemich, Stephen**; **Wilson, Diane**; **Woolf, Steven**

Context: We developed a comprehensive model to help primary care practices promote healthy behaviors. Specifically, we developed an Electronic Health Record (EHR) template with a single data entry form and prompts to facilitate delivery of the 5A's (Ask, Advise, Agree, Assist, Arrange). Clinicians could also refer patients via the

EHR for Assistance (A4) to one of four counseling options, three of which we arranged to be provided outside the practice (telephone counseling, group classes, and online assistance) or usual care. Patients could receive assistance for one of four health behaviors (diet, exercise, smoking, and alcohol) for up to nine months at no cost. **Objective:** To identify strengths and weaknesses of the comprehensive model we developed and tested, and how it might be improved. **Design:** Patient surveys and semi-structured interviews with clinicians, staff, and patients. **Setting:** Nine practices within the Virginia Ambulatory Care Outcomes Research Network (ACORN). **Patients:** All adult patients presenting for care between April and July 2006. **Intervention/Instrument:** Approximately 600 postal surveys and 20 interviews completed by patients who received assistance. Interviews conducted with 20 practice clinicians and staff at 4 practices. **Outcome Measures:** The patient surveys and interviews examined prior attempts to change health behavior, nature of the patient/provider relationship, experience during the office visit and with the type of assistance chosen, perspective on the overall model and specific aspects of it, and suggestions for improvement. Clinician and staff interviews explored prior approaches to health promotion and experience with EHRs, implementation experience, perspective on the overall model and specific aspects of it, and suggestions for improvement. **Results/Conclusions:** We describe clinicians', staffs', and patients' perspective on the advantages and disadvantages of the model and suggestions for improvement. We also identify and discuss any differences in perspective between these groups.

PS287-Evaluating Community Based Nutrition Education Programs: The Food Literacy Partners Program

Kolasa, Kathryn, Brody School of Medicine at East Carolina University; Rawl, Rebecca; Whetstone, Lauren; Lee, Joanne

Context: Many community based health improvement initiatives are implemented without a formal evaluation plan. However, in today's world of evidence based strategies, programs are asked to demonstrate their value. The Food Literacy Partners Program (FLPP) is a five year old learn and serve nutrition program designed to increase the quality and quantity of evidence based nutrition education in a rural community. Primary care providers are involved as advisors to the program. **Objective:** To demonstrate the utility of the LOGIC

model(<http://www.wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf>) to evaluate the effectiveness of a community nutrition program in improving food and nutrition knowledge and behaviors of participants and their confidence in teaching nutrition to peers. **Design:** A logic model was developed to evaluate the program effectiveness. The logic model will be presented. **Setting:** Community setting in rural eastern North Carolina. **Participants:** 321 adult volunteers have completed 20 hours of FLPP nutrition education training and provided at least 20 hours of community service. **Results:** The LOGIC model provided a framework to evaluate the FLPP. The use of

the model guided the investigators to include multiple methods of evaluation concurrently. A variety of data were available to inform the evaluation including past project reports, past course evaluations (n= 120), the North Carolina Physical Activity and Nutrition (PAN) monitoring form (n=29), an electronic original survey of graduates (n=78), and guided interviews with program instructors (n=7). The results allowed identification of consistency in response using both quantitative and qualitative sources. Use of the logic model allowed efficient and accurate definition of strengths and weaknesses of the project's interventions and provided recommendations for change and strategies for achieving sustainability. Conclusion: The logic model is a useful method for planning evaluations of community based health improvement initiatives.

PS288-A Comprehensive Practice-friendly Model for Promoting Healthy Behaviors

Krist, Alex, Virginia Commonwealth University; Burgett, Amy; Devers, Kelly; Flores, Sharon; Frazier, Charles; Johnson, Robert; Jones, Resa; Kerns, William; Rothemich, Stephen; Wilson, Diane; Woolf, Steven

Context: Linking clinical and community resources can potentially provide patients with necessary support to facilitate health behavior change. Electronic health records (EHR) can help clinicians offer the “5 As”: identify patients with unhealthy behaviors (A1), advise them to improve behaviors (A2), help achieve agreement on next steps (A3), and facilitate follow-up on progress (A5). Offering intensive assistance (A4) often exceeds the capacity of busy clinicians but can be provided by existing counseling programs if easy referral mechanisms were available. Objective: To test a package of interventions, which include the EHR prompts and the counseling programs providing intensive assistance, designed to assist patients with healthy diet, increased exercise, smoking cessation, and alcohol moderation. Design: Pre-post design. Setting: Nine practices, using a common EHR, within the Virginia Ambulatory Care Outcomes Research Network (ACORN) are participating. Patients: All adult patients presenting for care between April and July 2006. Intervention/Instrument: An EHR prompt system facilitates delivery of A1-3 and A5 in the office and helps refer patients to up to nine months of assistance (A4) from one of four counseling options: telephone counseling, group classes, online assistance (including the MyHealthyLiving website and / or e-counseling), or usual care. Outcome Measures: The main outcome will be changes in health behaviors of a random sample of patients seen during the intervention period. Data will be collected from questionnaires mailed to 2400 patients at baseline and 4 and 9 months after seeing their physician. Information from the EHR, a second survey mailed to patients receiving intensive counseling, records maintained by counseling centers, and semi-structured patient and clinician interviews will be used to determine RE-AIM parameters of the intervention. Results/Conclusions: We will present data on

the magnitude of health behavior change, patients' experiences with intensive counseling, and the RE-AIM findings.

PS289-Privileging Criteria to be Able to Perform Colonoscopies and Esophagoduodenoscopies (EGDs) in Healthcare Facilities

Reece, Scott; Cougill, Andrew; Wilson, Le Anne; McKenzie, James, Ball State University

Context: The performance of colonoscopy and EGDs are within the scope of family medicine. The AAFP, the American Society of Gastrointestinal Endoscopy, the AMA, and the JCAHO have competency-based criteria for endoscopy privileging. However, opinions vary on how to obtain and evaluate these competencies. To date, no research could be identified that has examined the criteria used by healthcare organizations to grant privileges to perform colonoscopies and EGDs. Objective: To determine the criteria necessary to be privileged to perform colonoscopies and esophagoduodenoscopies (EGDs) in healthcare organizations in the United States. Design: Cross-sectional, self-report, confidential mail survey with one follow-up to non-respondents. Setting: Healthcare facilities. Participants: A random sample of members of the National Association Medical Staff Services (NAMSS). NAMSS is a professional association comprised of individuals (N~4,000), not institutions (ie, hospitals), who are responsible for overseeing the privileging process in their institution. Instrument: The investigators created an original instrument. The instrument was determined to be content valid by a jury of experts and pilot tested for usability. Outcome Measures: Criteria to be privileged. Results: To be determined. Conclusions: To be determined.

PS290-QuitLink: Partnering Clinical Practices and Telephone Quit Lines to Leverage an Improvement in the Quality of Tobacco Counseling in Primary Care

Rothemich, Stephen, Virginia Commonwealth University; Woolf, Steven; Johnson, Robert; Flores, Sharon; Burgett, Amy; Villars, Pamela; Rabius, Vance

Context: Counseling by clinicians promotes smoking cessation, but routinely providing more than brief advice is difficult in most US primary care practices. Barriers include competing demands and inadequate office support systems. Objective: Telephone quit lines, whose staff deliver more effective intensive counseling, are proliferating in the US, but few work closely with clinicians to provide feedback or forward requests for cessation medications. Whether such a partnership improves outcomes has not been studied. We present an ongoing trial (ClinicalTrials.gov #NCT00112268) of such an intervention. Design: Cluster-randomized controlled trial. All practices implemented smoking status as a routine vital sign before a 3 month baseline, followed by allocation and analysis by practice. Outcomes are measured over 9 months. Setting: 16 primary care practices in metropolitan Richmond, Virginia participating in the Virginia

Ambulatory Care Outcomes Research Network (ACORN). **Participants:** 1368 adult smokers had participated in an exit survey at 6 months. **Intervention:** The intervention combines: (1) an expanded “vital sign” screening by rooming staff (ask, advise, and assess); (2) fax referral of preparation-stage smokers to the American Cancer Society quit line; and (3) quit line feedback to providers, including progress reports and prescription requests. **Outcome Measures:** The primary outcome is the frequency of intensive counseling (more than simple advice to quit), reported by patients in exit surveys. The study includes a qualitative component with interviews of patients and practice staff about the intervention. **Results:** Preliminary data at 6 months reveal intensive counseling in intervention practices increased from 31% to 41% (+10%) while in control practices it remained at 34%. **Conclusions:** Exit surveys from this period suggest that the intervention is producing an increase in intensive counseling, although data collection must be completed to achieve adequate statistical power and assess sustainability. Details of the QuitLink system and the preliminary trial results will be presented.

HYPERTENSION (PS291-PS295)

PS291-Conventional Versus Automated Measurement of Blood Pressure in the Office: The CAMBO Trial

Kirby, Allison, Memorial University; Godwin, Marshall; Dawes, Martin; Grant, Curry; Kaczorowski, Janusz; Kiss, Alexander; Tobe, Sheldon; Myers, Martin

Context: Hypertension control is imperative to decrease cardiovascular morbidity and mortality. Blood pressure, as measured by the BpTRU, better predicts ABPM results than does conventional measurement of BP in the office. It is unclear if management is improved and targets more readily met when the BpTRU is used to manage hypertension vs. conventional measurement. **Objective:** To determine if automated office BP can improve the management of systolic hypertension while achieving similar ambulatory BP control with fewer medications, fewer adverse effects, fewer visits, and no increase in clinical events. **Design:** Cluster randomized control trial. **Setting:** Primary care centers. **Participants:** Physicians (n=30) will be local area family physicians. Eligible patients (n=300) include those with systolic hypertension and > 45 years of age, currently receiving antihypertensive therapy (systolic BP ≥ 140, diastolic BP ≥ 90 mmHg), newly diagnosed patients about to receive antihypertensive therapy (systolic BP ≥ 160, diastolic BP ≥ 95 mmHg). **Intervention/Instrument:** Doctors will be assigned to either intervention where hypertension management decisions are based on BpTRU, or control where decisions are based on conventional method of BP measurement. The BpTRU is a validated, automated device which measures 5 readings without anyone present in the office, minimizing observer error, and white coat effect. **Outcome Measures:** Main: Differences between mean systolic office BP at years one and two and mean awake

ambulatory BP will be compared for manual versus automated office BP. Secondary: Differences between the manual and automated office BP vs. mean 24-hour ABPM and nocturnal ABPM, reproducibility of office BP, documented adverse effects, intensity and cost of drug therapy, and clinical events. **Anticipated Results:** Automated systolic office BP will exhibit a closer relationship than manual office BP to the mean awake systolic ambulatory BP and will be associated with fewer adverse events, less intensive drug therapy, lower drug costs, and no increase in clinical events. **Conclusions:** If the BpTRU can be shown to improve BP control in hypertensive patients, its use could prevent or delay adverse cardiovascular events.

PS292-Study of Some Plasma Level Cations in Dyslipidemia

Bistriceanu, Sofica, CMI, Romania

Context: Plasma calcium, magnesium are useful in conducting treatment of disorders. Aim: to reveal difference between plasma calcium, magnesium, correlation between them in dyslipidemia accompanied or not by diabetes mellitus type II. **Design:** This year, in author's office, a cross sectional study was performed for two groups of patients diagnosed with dyslipidemia (I), dyslipidemia and diabetes mellitus (II). Patients with liver and renal diseases were not included in the study. 35 laboratory data sets for each group were selected from medical records. CIA software was used to analyze data. **Results:** For the group with dyslipidemia and diabetes mellitus data were different from the ones recorded for patients with dyslipidemia: - Plasma calcium: mean 8,5 /vs 8,3 ; SD: 0,56 /vs 0,76. SE: 0,095 / vs 0,129; 95% CI for the mean: 8,293 to 8,679 / vs 8,080 to 8,606. - Plasma magnesium: mean 1,1 / vs 1,3; SD: 0,32 / 0,47 ; SE: 0,055 / 0,080 ; 95% CI for the mean 1,003 to 1,225 / vs 1,152 to 1,476. - Pearson's r correlation coefficient: -0,467 / vs -0,041. 95% CI for Pearson's r correlation coefficient: -0,692 to -0,158 / -0,369 to 0,296. - Spearman's rank: -0,452 / -0,049; 95% CI for Spearman's rank: -0,683 to -0,140 / -0,376 to 0,289. SE: 0,177. - In the group I, patients' age ranged from 46 to 82 years, 68% women. - In the group II, patients' age ranged from 41 to 81 years; 54,12% women. - **Conclusion:** plasma magnesium and degree of correlation between plasma calcium and plasma magnesium decrease in diabetes mellitus associated with dyslipidemia. Supplementary magnesium intake is necessary in conducting treatment for dyslipidemia accompanied by diabetes mellitus. Further data will be completed until September 2006, to increase the power of the study.

PS293-Feasibility of a School-based Program to Raise Community Awareness of High Blood Pressure

Viera, Anthony, University of North Carolina-Chapel Hill; Rake, Kristen; Garrett, Joanne

Context: Despite the existence of national guidelines and over 70 antihypertensive medications, 42% of hypertensives are not being treated, and up to 75% of those treated are not at goal blood pressure. Over 30% of adults are not even aware that they have hypertension. Innovative strategies aimed at the

community level might lead to improved hypertension awareness and control. **Objective:** To pilot test a school-based intervention designed to not only raise children's awareness of the health risks of high blood pressure and strategies that can help reduce those health risks but also to serve as an innovative means of deploying home blood pressure monitors in an effort to raise community awareness. **Design:** Pilot, crossover trial. **Setting:** Public school in a suburban community. **Participants:** Fifth grade students (n=67) and their parents/guardians. **Intervention:** (1) Classroom didactic about hypertension followed by an in-class laboratory consisting of measurement of blood pressure using automatic oscillometric devices. (2) Automatic blood pressure devices taken home by students for measurement of parent/guardian blood pressures with a form of immediate feedback provided. **Main and Secondary Outcomes:** (1) Child and parent/guardian knowledge about high blood pressure, (2) parent/guardian intent to have blood pressure checked by health professional, (3) reported control of blood pressure among parent/guardians with hypertension. **Results/Conclusions:** This pilot study is currently ongoing. Results will not be available until June/July 2006. Importantly, as a pilot study, our goal is not to demonstrate effectiveness but to assess feasibility in preparation for a larger trial.

PS294-Home Blood Pressure Monitoring - the Patient's View

DeAlleaume, Lauren, University of Colorado; Quintela, Javan; Zittleman, Linda; Parnes, Bennett
Context: Blood pressure is poorly controlled in many hypertensive patients. Home blood pressure monitoring (HBPM) has been shown to increase patient adherence to antihypertensive therapy and may improve blood pressure control. Few studies have evaluated patient perceptions of HBPM. **Objective:** To determine how patients experience and utilize the HBPM component of the FREEDOM study; a randomized controlled trial investigating a comprehensive intervention to improve the management of cardiovascular risk factors in patients with diabetes. **Design:** A qualitative survey of intervention subjects from the Freedom study. **Setting:** Eight primary care practices from CARENET and HPRN, two practice based research networks affiliated with the University of Colorado, caring for ethnically diverse rural and urban underserved populations. **Patients:** English or Spanish speaking adults with type 2 diabetes mellitus. **Intervention/Instrument:** Patients are trained in the use of an automatic oscillometric home blood pressure monitor and are asked to report their average monthly blood pressure via an interactive telephone system, mail in postcards or the internet. Ongoing feedback is provided to both the patient and the patient's physician. We will conduct a telephone survey exploring patient experience with HBPM including; frequency of blood pressure measurement, reporting behavior, perceived value of HBPM and the impact of HBPM on patient perception of health status and self

efficacy. The effect of HBPM on adherence and lifestyle will also be assessed. **Outcome Measures:** Qualitative analysis of patient responses correlated with patient demographics and other characteristics. Reported monthly average home blood pressure readings from the initial 10 months of the study. **Results/Conclusions:** We anticipate that the results of this survey will help physicians determine which patients are candidates for HBPM. This study will also provide insights into patient barriers to the use of HBPM and methods to encourage optimal use.

PS295-An Intensive, Protocol-based Approach to Achieving Blood Pressure Target in Patients With Essential Hypertension in Primary Care

Godwin, Marshall, Memorial University of Newfoundland; Birtwhistle, Richard; Seguin, Rachelle; Casson, Ian; Delva, Dianne; MacDonald, Susan; Lam, Miu
Context: Less than half of hypertension patients achieve recommended blood pressure (BP) targets. Physicians seem to be aware of what the targets are but transferring that knowledge to practice seems elusive. Lack of a structured algorithm for treating hypertension may be part of the problem. **Objective:** Will an intensive scheduled management (ISM) approach to hypertension treatment improve attainment of BP targets. **Design:** An effectiveness trial; a cluster randomized design using family physicians and their hypertensive patients. **Setting:** A family medicine practice-based research network in Kingston, Ontario, Canada. **Patients or Other Participants:** Patients with a diagnosis of essential hypertension who are managed by family doctors and who are on medications but whose BP is not at target, or who are about to be started on anti-hypertensive medications. **Intervention:** A structured approach to increasing number and dosage of anti-hypertensive medication until BP target is reached. Patients are seen every 2 weeks for 8 visits, if BP is not at target then medication is increased by next usual increment or new medication started at usual starting dose until patient is on three medications or BP target is achieved. **Outcome Measures:** Mean daytime blood pressure on 24 hour automatic blood pressure monitoring (ABPM). Secondary outcomes were BP by the BpTRU device and BP by nurse. **Results:** Patients in the control group were slightly older than patients in the interventions group, otherwise both groups were equal at baseline. Immediately after the intervention (16 to 20 weeks from baseline) the average blood pressures in the intervention group, as measured by ABPM and BpTRU, were significantly lower than the control group. At 12 months post baseline (about 7 months after the end of the intervention) the significant differences remained for the BpTRU measured blood pressures but not for the ABPM. When the paired differences between baseline and 12 months were compared there was significant decrease in BP in the intervention group but not in the control group. **Conclusions:** An intensive scheduled approach to increasing anti-hypertensive medication every two weeks until target is achieved results in better blood pressure control than usual care.

OBSTETRICS (PS296-PS303)

PS296-OB Trends at a Community Hospital

Stone, Kurt, Rapid City Regional Hospital; Engle, Deeanne

Context: Rapid City Regional Hospital has had a noted increase in the number of inductions over the past 20 years. As more patients express a desire to know exactly when they'll deliver their babies, thought must be given to what the pregnancy outcome will be. A significant number of inductions are performed for fetal macrosomia. However, the literature regarding this indication remains controversial. With this in mind, induction and spontaneous labor rates across 20 years were examined, as was the condition of the babies at birth. **Objective:** To determine obstetrical trends when comparing 1985, 1995 and 2005, including maternal weight, gestational age at delivery, inductions, spontaneous deliveries and the outcomes of all deliveries, including Caesarian sections (c-s), shoulder dystocia, birth weight and Apgar scores. **Design:** Retrospective case review. **Setting:** A community hospital with approximately 1,500 deliveries per year, located in Rapid City, SD. **Participants:** Patients were selected based on their date of delivery. **Outcome Measures:** There was an increase in labor inductions over the 20 years, as expected. Caesarian section rates also increased, though were lower than national rates. **Results:** Preliminary results are as follows: for 1985, inductions were 5%; none went to primary c-s. Primary c-s rate for spontaneous labor was 13%. In 1995, the induction rate was 22%. Of those inductions, 33% went to primary c-s. The primary c-s rate for spontaneous labor was 13%. In 2005, 46% of patients were induced, with a primary c-s rate 16%. Primary c-s rate for spontaneous deliveries was 18%. **Conclusions:** Induction rate is significantly increased over the past 20 years. There has been a corresponding increasing in the c-s rate. However, the c-s rate in 2005 for spontaneous versus induced labor is similar.

PS297-Differences in Psychosocial Risk Perception Between Providers and Women With Problematic Substance Use in Pregnancy Using the ALPHA Form

Midmer, Deana, St Joseph's Health Center; Ordean, Alice; Kahan, Meldon

Context: Substance use during pregnancy is associated with serious medical, psychiatric and social problems. **Objective:** To compare the responses of pregnant substance-using women on the ALPHA form with those of a nurse and a physician in a specialized family medicine treatment program. Our research questions were: 1) Do the women complete the second ALPHA form differently than the first? 2) Do the physician and nurse complete the forms differently? **Methods:** **Design:** Convenient and consecutive sample of pregnant women attending the Toronto Center for Substance Use in Pregnancy at St. Joseph's Health Center in Toronto, Canada. **Interventions:** Women attending for a first visit completed the self-report ALPHA form before being seen by the program nurse and physician. Immediately after

the visit the women completed the self-report ALPHA again. The nurse and physician completed an ALPHA response version that included all the items on the self-report and indicated their appraisal of the psychosocial health of the women. Women received a small gift certificate for a national chain store upon completion of the forms. **Outcome Measures:** Scores of the women and providers on the ALPHA response form. **Results:** Although 2 women refused, 22 women completed the forms. There was a high overall correlation (intra-rater reliability) between the woman before and after the visit. However, overall, there was a low correlation between the women's responses and those of providers, with the least correlation with respect to substance abuse issues ($P=.009$). A high correlation (inter-rater reliability) was demonstrated between the responses of the nurse and the physician. **Conclusions:** Perceptions about psychosocial health, especially related to substance use, were significantly different for pregnant women and their providers, with women perceiving their psychosocial issues as less serious.

PS298-Meeting in Strange Places: An Exploration of the Experience of Childbirth When Women Are Attended by an On-call Family Physician

Roberts, Suzanne, Saint John Regional Hospital; Miedema, Baukje

Context: Fewer Canadian family physicians provide intrapartum care because they consider it too disruptive to their lives. A shared care call group may minimise the disruption. How do women experience childbirth when they are attended by an on-call family physician? **Objectives:** The objectives of this study are: to understand women's experiences of childbirth when they are attended by a physician they have not met previously, and to identify the positive and negative factors that influence the brief but intense interaction between patients and physicians during labor, in this situation. **Design:** a qualitative phenomenological study. **Setting:** A city in New Brunswick, Canada that offers tertiary maternity care. The family practice call group consisted of 9 family physicians. **Participants:** Purposeful sampling was used to recruit participants from the call group physicians' practices. Inclusion criteria were to have been attended during childbirth by an unknown family physician, to be 6-12 months post partum and to give birth to a live infant. Participants ranged from lower to middle socio-economic status. **Results:** When women feel vulnerable about the events of childbirth they also describe feeling vulnerable about being attended by an unknown physician. Women described feeling less vulnerable when they felt that the on-call physician communicated well and spent time and provided attention. Care characterized by these qualities enabled the on-call physician to convey caring, empathy, and competence and promotes a sense of trust. **Conclusion:** This study demonstrates that a shared call group in family practice maternity care is a viable model of care. The recommendations for clinical practice are: 1) to discuss the model of intrapartum care with women antenatally, 2) promote

a sense of open communication by discussing a woman's birth plan during the early stages of labor, and 3) visit women during their postpartum hospital stay.

PS299-Practitioners' Preferences of Models of Obstetrical Care in Ontario

Stewart, Moira; Brown, Judith Belle; Trim, Kristina; Freeman, Thomas; Kasperski, Jan; Smith, Carrie, The University of Western Ontario

Context: In Ontario and across Canada, low risk, obstetrical care has shifted from family physicians to the specialized care provided by obstetricians. This shift has also meant that women are delivering their babies outside of their communities, in tertiary care hospitals, are more likely to have a caesarean section, and receive fewer supportive services post-delivery. **Objectives:** The purpose of this study was to identify acceptable models of obstetrical care. By surveying four professional groups it was designed to provide insight into the concordance among the professions. **Design:** Mail-out Survey. **Setting:** Four Health Regions of Ontario **Participants:** Participants included all registered midwives (N=322) and obstetricians (N=647) in Ontario and a stratified random sample of nurses (N=750) and family physicians (N=750). The overall response rates were: midwives – 82%, family physicians – 78%, obstetricians – 80% and nurses – 80%. **Instrument:** Practitioners were mailed a questionnaire that asked whether or not they would consider practicing in several models of obstetrical care. Models were developed by consensus from a multidisciplinary obstetrical key stakeholder group from Ontario. **Outcome Measures:** Preferred models of obstetrical care. **Results:** Models of care presented in the survey reflected a continuum of service delivery. These models ranged from current practice as a solo practitioner within two different call arrangements (take all call, or set call period) to a multi-professional or interprofessional clinic **Setting.** Family physicians do not prefer any models that would have them practicing intrapartum care. Obstetricians and midwives had a strong preference for solo practitioner models along with an interest in multi-professional practice. Possible explanations for these trends will be discussed. **Conclusions:** The results will provide direction to policy makers regarding strategies that will encourage the retention of current practitioners, the likelihood of recruiting newly graduated practitioners and the re-employment of those practitioners who have left obstetrical practice.

PS300-Family Medicine Obstetric Fellowship Graduates: How Many Are Still Delivering Babies?

Schwedock, Nick, McLennan County Medical Education and Research Foundation

Context: The number of family physicians that deliver babies has continued to decline. There are no published reports on the influence obstetric fellowships have on their graduate's long term practice of obstetric care. **Objective:** To determine the percentage of family medicine obstetric

fellowship graduates still delivering babies. **Design:** Quantitative Survey. **Setting/Participants:** The survey was sent to participating fellowship directors (13 of 23) and forwarded to all graduates with valid emails (50). **Instrument:** Online survey: demographic information and participation in vaginal, vacuum, forceps, and Cesarean deliveries. **Outcome Measures:** The percentage of fellowship graduates performing vaginal, vacuum, forceps, and Cesarean deliveries at the start of practice and currently. **Results:** 56% of surveyed fellows responded. After fellowship completion 89% were performing vaginal and vacuum deliveries, 29% were performing forceps deliveries, and 79% were performing Cesarean deliveries. After an average of 3 ½ years of practice, 79% were performing vaginal and vacuum deliveries, 21% were performing forceps deliveries, and 64% were performing Cesarean deliveries. General open ended comments on the survey revealed that 29% of respondents want certification upon fellowship completion. It was also mentioned frequently that there is a lack of standardization between programs. The survey process revealed there is no accreditation for OB fellowships unlike other fellowships, and therefore no centralized tracking and no information about the number or characteristics of fellowship graduates. A few programs did not even have records of all their previous graduates. **Conclusions:** The survey results show that even among physicians who self-selected for additional training in obstetrics, a lower than expected number of fellowship graduates are currently delivering babies and very few are using forceps. The study also revealed that there is no tracking of graduates on a national level and tracking by individual programs varies widely.

PS301-Family Medicine International Adoption Clinical Practice Survey

Lerberg, Kristen, University of Wisconsin School of Medicine and Public Health; Temte, Jon; Conway, Jim; Potter, Beth; Miller, Catherine

Context: International adoption is increasingly common in the US The extent to which family physicians participate in international adoption care, however, is unknown. **Objective:** To determine the experience, interest and comfort level of family physicians in providing medical care for families with children who were adopted internationally. **Design:** Cross-sectional online survey. **Setting:** Wisconsin. **Participants:** Physicians (n=1463) from the Wisconsin Academy of Family Physicians. **Instrument:** 15-item web-based survey distributed by email. **Outcome Measures:** numbers of international adoptees seen in clinic; opinion regarding appropriateness of family medicine as venue of care; comfort levels in areas of international adoption care, usual sources of information; topics for additional training. **Results:** Of the 246 respondents (17% response rate), most (57%) provided care to at least two international adoptees. Physicians received most of their information from personal experience (70%), journal articles (43%), and adoption agencies (29%). CME lectures (16%), textbooks (8%), and CME workshops (2%) were rare sources

of information. Physicians felt moderately to extremely comfortable with assessing growth and development, providing immunizations and conducting medical examinations, whereas few had comfort with counseling on adoptive breastfeeding, adoptee adolescent issues and special needs adoption. The majority of respondents (83.9%) felt that it was very or extremely appropriate for family physicians provide this care and 94.3% felt additional training would be beneficial. Medical examination, medical record review and pre-adoption counseling were among the most preferred topics for additional training with format preferences of CME lectures/seminars, online resources, and journal articles. **Conclusions:** Most family physicians in Wisconsin are involved in the care of children who were adopted internationally. Several areas within the general care of these children were identified as areas in which these physicians feel a need for additional training. Most clinicians desire further educational opportunities with the preferred formats being CME lectures/seminars and online resources.

PS302-Predictive Value of the Thumb to Forearm Flex Test on Rates of Progression Through Labor in Nulliparous Women: A Pilot Study

Maxon, Kimberly, University of California- San Diego; Achar, Suraj

Context: In 2006, there remains a paucity of information regarding factors that influence labor progression. There is currently no reliable tool for family physicians or obstetricians to predict ease of vaginal delivery. **Objective:** To test the thumb to forearm flex test (TFFT) as a predictive tool to identify a subset of women who may progress quickly through labor. **Design:** Retrospective pilot study. **Setting:** University of California, San Diego Medical Center. **Participants:** English or Spanish speaking postpartum inpatient females, ages 15-45 years. Participation included 38 primiparous and 101 multiparous post-partum women, ages 16-43 years, 64% delivered vaginally, 36% delivered by cesarean section, between May 2004 and September 2004. 67% Hispanic, 22% Caucasian, 11% other. Women with outcome of fetal demise or medical center faculty/housestaff were excluded. **Instrument:** TFFT, measurement of finger, elbow, and knee extension, by direct observation and goniometer, and questionnaire. **Outcome Measures:** Difference in labor duration: active phase first stage (APFS) (4-10cm cervical dilation) and second stage based on the TFFT and based on secondary measures. Relationship between cesarean section due to dystocia and TFFT. **Results:** Mean duration of APFS labor was 2.17 hours versus 7.83 hours in TFFT+ versus TFFT-primiparous women respectively, $P=0.001$. There was no difference in second stage labor, multiparous women, or secondary hypermobility measures. Power was not sufficient to determine any relationship between rates of cesarean section and TFFT. **Conclusions:** The thumb to

forearm Stretch Test may play a clinically significant role in predicting rapid rates of progression through the labor in nulliparous women. If the results of this study are confirmed in the future, this could have important implications regarding how labor precautionary advice is provided by family physicians, obstetricians, and nurse midwives.

PS303-Stepped Care Treatment of Postpartum Depression

Gjerdingen, Dwenda, University of Minnesota

Context: Postpartum depression, the most common serious complication of the postpartum period, is seen in approximately 10-20% of women who have recently given birth. Unfortunately, over half of cases remain unrecognized, and fewer still receive appropriate care. Given the significant impact of postpartum depression on mothers and their families, and given that family physicians have opportunity to screen for, and treat this disorder, this topic is of great importance to family medicine. **Objective:** To test the feasibility of implementing a postpartum depression screening/stepped care treatment program within the context of well-child visits, also, begin to look at the impact of the intervention on mothers' and infants' health. **Design:** Randomized controlled trial. **Setting:** 4 family medicine residency clinics and 3 community-based pediatric clinics. **Participants:** Approximately 400 English-literate women, age 12-50 years, whose 0-1 month old infants receive care at one of the participating clinics. **Intervention:** "Stepped care treatment" of postpartum depression includes: informing mother and her physician of depression diagnosis; providing active depression treatment, printed patient education on postpartum depression, and case manager phone calls every 2 weeks until the patient is in remission; and "stepping up" the level of care for women who do not respond to their initial treatment. **Outcome Measures:** rate of completing depression screens during office visits, mothers' mental health and work productivity, mothers' and infants' days ill and health care visits. **Results:** It is anticipated that it will be feasible to screen for postpartum depression during well-child visits, and that stepped care treatment will help to improve mother's mental and physical health. **Conclusions:** Research is in progress, and enrollment rates are currently excellent. However, several methodological modifications were necessary to enhance enrollment at some of the slower clinic sites; these modifications will be discussed.

PRACTICE-BASED RESEARCH (PS304-PS318)

PS304-Comparison of Small Group Versus Individual Learning Using a Case-based Module and Practice Reflection Tool: A Preliminary Study

Armson, Heather, University of Calgary; Kinzie, Sarah; Roder, Stefanie; Elmslie, Tom; Wakefield, Jacqueline

Context: Interactive small group discussions appear to be effective in promoting practice change. Can individual structured reflections provide similar commitment-to-change when using the same case-based modules and practice

reflection tools? **Objective:** To compare the commitment-to-change statements and key practice issues identified by participants of a structured individual learning program with those who participate in small group workshops. **Design:** A prospective comparative study of individual versus small group learning. Both quantitative and qualitative methods are being used to compare information from the practice reflection tools in the two different learning programs. **Setting:** Structured educational sessions in the community setting. **Participants:** Canadian family physicians; 6 small group workshops (7-14 physicians/workshop), 36 **Participants** in the individual learning program. **Intervention/ Instruments:** Two learning programs (AdHoc small group workshops with a trained peer facilitator versus a structured practice-based individual learning program) each using the same evidence-based educational module and an individual practice reflection tool. **Outcome Measures:** Commitment-to-change statements and the key practice issues considered are taken from the practice reflection tool. **Results:** Preliminary evaluation of the commitment-to-change statements from the structured individual learning program versus small group workshops was as follows: 81% versus 73% of physician planned to make practice change(s); 17% versus 26% considered practice change(s); and 36% versus 21% confirmed their current practice(s). Within three months of reviewing the module, 90% of the individual learners versus 79% of the workshop learners indicated they implemented changes in their practices. **Conclusions:** Preliminary results suggest similar or greater commitment-to-change statements were made by the participants in the structured individual learning program. Further analysis is in progress to determine whether there are any qualitative differences in self-reported practice changes.

PS305-Literacy in Primary Care: Comparison of Wisconsin to National Approaches and Attitudes

Smith, Paul, University of Wisconsin; Temte, Jon; Grasmick, Mike; Jaeger, Amber; Yasek, Van
Context: Low literacy is prevalent (40%) and affects patients' health status. **Objective:** To assess the attitudes and methods to improve communication with low literacy patients used by clinicians from WREN (n=90), a university department (UW-DFM: n=309) a state academy (WAFP: n=1358) and a random sample of the AAFP members not practicing in Wisconsin (AAFP: n=500). **Design:** A 12-question survey was sent by e-mail with a hyperlink for online data collection to all Wisconsin providers. This same survey was mailed to 250 AAFP physicians. 250 additional AAFP physicians received a postcard containing a URL for an online survey. **Setting:** US Primary care offices. **Participants:** 462 clinicians. **Instrument:** The survey URL was emailed to Wisconsin participants. Non-respondents received two reminder emails. Paper surveys or a postcards with a survey URL were mailed to AAFP **Participants**. Non-respondents received two additional reminder letters or

postcards spaced at three week intervals. **Outcome Measures:** Response rates across 5 groups and 3 methods of survey distribution. Prevalence of low literacy, impact on the quality of care and patient outcomes, frequency of screening, steps taken to improve communication, and impact of low literacy on patient's health status, quality of life and satisfaction. **Results:** Response rates were 60% (WREN), 19% (UW-DFM), 18% (WAFP), 38% (AAFP-mail) and 2.8% for (AAFP-postcard-URL). All groups significantly underestimated the prevalence of low literacy to a similar degree (17.4%), and had similar estimates of the impact of low literacy on health outcomes. Significant differences were found between Wisconsin Clinicians and non-Wisconsin Clinicians in the rates of screening for low literacy (7.1% vs. 17.5%). **Conclusions:** Clinicians recognize the importance of low literacy in the health of their patients, but underestimate its prevalence, and few employ screening. WREN accurately represents Wisconsin but has difference from a national sample.

PS306-Using a Common Set of Measures to Combine Data Across PBRNs: A Report From Prescription for Health

Fernald, Douglas, University of Colorado HSC at Fitzsimmons; Cifuentes, Maribel; Dickinson, Miriam; Green, Larry

Context: Routine assessment of multiple health risk behaviors in primary care is important, yet comparing results across different interventions and practices using different measures is difficult. **Objective:** Describe challenges and approaches for standardizing data across 10 projects. **Design:** A common set of brief patient measures was proposed to compare outcomes across settings, interventions, and populations. Projects funded in 10 primary care practice-based research networks (PBRNs). To facilitate use of common measures we convened expert consultants to identify measures, consulted with IRBs, shared proposed measures early, brought funded projects together, convened a steering committee, negotiated and refined final measures, and disseminated uniform updates. **Setting:** Prescription for Health is a Robert Wood Johnson Foundation initiative aiming to improve health behaviors related to smoking, risky drinking, unhealthy diet, and physical inactivity by redesigning delivery of primary care. **Patients or Other Participants:** Practices and patients varied across projects. **Intervention/Instrument:** Administration of the common survey instruments and interventions varied across projects. **Outcome Measures:** Selection/refinement of measures, IRB/HIPAA considerations, data aggregation logistics, meta-analysis approaches, investigator preferences, collaboration activities, practice-level data additions, and cross-project study finances. **Results:** A viable study: COMBO—Common Measures, Better Outcomes. Refinement of measures, study design modifications, combining patient- and practice-level data, understanding minimum data for meta-analysis, and adding expenditure data. We anticipate being able to describe baseline patient characteristics and outcomes for up to 30,000 patients on four health behaviors

and quality of life, along with characteristics of over 100 primary care practices. **Conclusions:** Agreeing on a common set of measures and their implementation is a first step to link routine medical practices into the scientific enterprise. There is great potential for a set of data that yields practical knowledge applicable to clinical practice. Differing research designs across the 10 projects may limit analytical capabilities.

PS307-Multimorbidity in Diabetic Patients and Adherence to Screening Guidelines in Primary Care

Balasubramanian, Bijal, UMDNJ-Robert Wood Johnson Medical School; Tallia, Alfred; Scott, John; Ohman Strickland, Pamela; Crabtree, Benjamin

Context: Primary care physicians provide care to a significant number of patients with multiple chronic illnesses. Previous research has focused on the effect of multimorbidity on health care resource utilization and the overall quality of life. There are no studies, however, that examine how the presence of several concurrent chronic conditions influences physicians' adherence to screening guidelines. **Objective:** To examine the effect of multimorbidity in diabetic patients on adherence to screening guidelines by family physicians. **Design:** Cross-sectional analysis of baseline chart audit data collected for an NIH-funded group randomized quality improvement trial of an intervention to improve management of multiple chronic illnesses. **Setting:** 55 family practices in New Jersey and eastern Pennsylvania. **Participants:** 1843 patients selected randomly from practices participating in the Using Learning Teams for Reflective Adaptation (ULTRA) project. **Outcome Measures:** Proportion of screening tests received by eligible patients, based on current guidelines for each service (smoking, hypercholesterolemia, and mammography). The proportion of screening tests provided (categorized as $\geq 50\%$ and $>50\%$) were compared in patients with diabetes alone ($n=389$), diabetes and hypertension ($n=571$), diabetes, hypertension, and CAD ($n=55$), and none of the above diseases ($n=821$). **Results:** Diabetic patients with hypertension and/or CAD were less likely to receive $>50\%$ of screening tests as compared to those without these conditions (39.0% vs. 31.5%, $P=0.0009$). In addition, the proportion of screening tests received decreased in a dose-response relationship among patients with no multimorbidity, those with diabetes alone, and those with diabetes and other multimorbidity (Cochran-Armitage test for trend statistic = -5.82, $p < 0.0001$). **Conclusion:** Provision of screening tests to patients declines as the number of concurrent chronic illnesses increase. Because multimorbidity is a common feature of primary care practice, innovative strategies are needed to enhance physicians' adherence to screening guidelines among patients with multimorbidity.

PS308-Recruitment for Practice-based Research Network Studies

Werner, James, Case Western Reserve University; Stange, Kurt; Weyer, Sharon

Context: The environment for practice-based research has changed dramatically. **Objective:** We set out to identify new strategies for practice recruitment that are needed in the current environment, compared to formerly effective strategies. **Design:** We conducted a comparative case study of 3 research studies in the same practice-based research network (PBRN) between 1992 and 2006. By reviewing study records and conducting interviews, we identified strategies that were successful in recruiting practices. **Setting:** A practice-based research network in northeastern Ohio. **Participants:** Practice-based researchers, practitioners and health care system partners. **Results:** For the first study (1992-1996), recruitment involved securing the buy-in of the practice physicians(s). Retention required continued permission from the physician with support from key office staff members. During the 2nd study (1997-2002) physician buy-in remained important, but permission from practices' affiliated or owning health care system also began to be necessary. By the time of the 3rd study (2003-present), increasingly health care system ownership or influence, along with HIPAA and IRB requirements required first recruiting through complex hierarchies in the health care system, then recruiting the practice through both the medical director and the administrator. In addition, the rapid rate of change and growth in demands on practices required a strategy of continuous re-recruitment rather than retention in order to retain changing practices within the study. Networks across the country experienced similar changes. **Conclusions:** Changes in the environment for practice-based research requires development of strong relationships at the level of both the practice and its larger system. Once recruited, practices require ongoing re-recruitment so that the study remains viable within rapidly changing practice and system demands and priorities. These findings may affect the agenda of acceptable research questions for practice-based research, and imply that practice-based network research will require greater infrastructure support and partnership development in the future.

PS309-Patient Satisfaction With Primary Care

Sangster, John; Litner, Michelle; Gerace, Toulia; Jordan, John; Cejic, Sonny; Weston, Wayne; Bell, Katherine; Mequanint, Selam; Boisvert, Leslie, University of Western Ontario

Context: Patients at the Byron Family Medical Center (BFMC) evaluated the quality of their family practice care before and after the medical practice became a Family Health Group (FHG). **Objective:** To assess patients' satisfaction with services 1-year before and 1-year after the BFMC became a FHG. **Design:** Survey design, modified Dillman method. **Setting:** Multi-disciplinary primary care practice. **Patients or Other Participants:** Stratification occurred on three factors: primary care physician (125/team), gender (50% male, 50%

Female), and age. Patients were excluded if they participated in the pilot study (n=110) did not understand written English. **Intervention/Instrument:** A modified version of the General Assessment Survey, previously piloted at BFMC, was sent to patients at Time 1 (T1: June 2003), then sent to the same sample at Time 2 (T2: Sept 2005). **Outcome Measures:** Main outcome measure is patient satisfaction **Results:** Response rates at T1 and T2 were 71.9% and 72% respectively. There were 230 valid pairs for analyses. Most respondents were females (T1: 52.1%; T2: 56.1%), between the ages of 46-75 (T1: 46.2%; T2: 54.9%) Patient satisfaction with the reception staff decreased significantly ($P=.023$) from T1 to T2, as did satisfaction with time waiting for appointment to begin ($P=.000$). The majority of respondents at T1 (81.9%) reported to be in good health, as did the majority at T2 (79.7%) T1 respondents were very satisfied (78.3%) with the overall services provided by the BFMC, T2 shows that satisfaction improved, 81.6% of respondents were very satisfied overall with the services provided by the BFMC ($P=.033$) **Conclusions:** Patients at the BFMC expressed greater overall satisfaction with the BFMC after becoming a FHG, however, many of the individual services (Physiotherapy, Social Work, Nurse Practitioner, Public Health Nurse, Family Medicine Nurse and Family Medicine Resident) at the BFMC showed no significant change in levels of satisfaction.

PS310-Exploring Unmet Needs Among Urban Youth Seeking Health Care

Baquero, Maria, Albert Einstein College of Medicine; McKee, M. Diane; Newlander, Katrina

Context: Unmet health care needs are common among low-income, urban adolescents. **Objective:** Among adolescents accessing health care, to explore perceptions of their health needs, satisfaction of these needs, and factors related to unmet needs, such as confidentiality issues and provider continuity. **Design:** Semi-structured face-to-face interviews conducted with adolescents seeking primary care. Interviews were transcribed and subjected to qualitative analysis. **Setting:** Three primary care practices in the Bronx serving a mostly minority, low-income population. **Participants:** English-speaking adolescents aged 14-19 seeking care for any reason (n= 22). Fourteen respondents were female adolescents; twelve had some type of health insurance coverage. **Results:** Some (n= 9) respondents mentioned minor unmet needs; others (n= 7), described major unmet needs primarily related to sexual and mental health. The latter finding may be linked to a prevailing view among adolescents that providers' roles are limited to addressing physical health concerns alone. Adolescents seeking care in urban safety net settings typically report confidential care from their providers. Respondents essentially understood the confidential nature of the patient-provider exchange and valued the care and health information offered to them. Continuity with providers was

variable. Overall, adolescents expressed positive views of clinicians, particularly regarding interpersonal skills and professionalism. Most described honest disclosure of sensitive information, such as sexual activity, especially when assured of confidentiality. **Conclusions:** Adolescents seeking care in urban health centers indicate minor unmet physical needs as well as significant unmet needs related to mental and sexual health. Efforts to expand perceptions regarding the scope of needs that providers can address are required. A strong foundation of confidential care represents a useful platform for expanding these services in line with a model we are developing about urban care delivery.

PS311-Rehabilitation in Primary Care: Satisfaction of Patients and Team Members

Letts, Lori, McMaster University; Richardson, Julie; Chan, David; Baptiste, Sue; Coman, Liliana; Edwards, Mary; Price, David; Hiltz, Linda; Stratford, Paul; Law, Mary

Context: Canada is undergoing primary care transformation, including the integration and evaluation of rehabilitation in primary care, and issues of chronic disease management. **Objectives:** This poster focuses on a secondary project objective: to determine whether patients and practitioners in a primary care **Setting** show greater satisfaction as a result of a rehabilitation intervention compared to patients who do not receive the intervention, and for the practitioners compared to prior to the intervention. **Design:** Single blind randomized controlled trial. Satisfaction evaluated with mixed methods: satisfaction questionnaire administered to all study participants and interdisciplinary team members. Qualitative interviews conducted with a sub-sample of intervention group participants and team members. **Setting:** The rehabilitation intervention was offered at an academic family health center. **Participants:** Questionnaire: All study participants (n= 303) (44 years of age and older, with chronic disease, who had attended their physician's office at least 4 times in the previous year). All members of the interdisciplinary team (n=26) (physicians, medical residents, nurses, nurse practitioners, and social workers) were surveyed with 11 respondents. Qualitative interviews: Purposive sampling: intervention group participants (n=11) with varying exposure to the rehabilitation intervention; and team members with representation across varying disciplines (n=7). **Intervention:** A case management approach with individualized assessment and treatment; 6-week chronic disease self-management group; rehabilitation information web-site. Satisfaction evaluated 18 months after introduction of the intervention. **Outcome Measures:** Patient Satisfaction Questionnaire (PSQ-18) modified for rehabilitation. A qualitative interview schedule gathered in-depth information. **Results:** Satisfaction with rehabilitation comparing intervention and control group responses. Descriptive data on the satisfaction of team members. Themes from the qualitative interviews will enhance understanding of the quantitative data. **Conclusions:** Satisfaction should be evaluated as one component to

understand the introduction of rehabilitation in primary care. Mixed methods can be used to evaluate satisfaction.

PS312-Predictors of Successful Management of Opiate Addiction with Buprenorphine in a Rural Family Medicine Setting

Holt, Christina, Maine Medical Center; Loxterkamp, David

Context: Opiate addiction is a growing problem in family practices throughout the US. Strategies to treat opioid addiction are gaining foothold among primary care providers, who are poised to provide full spectrum of services for these patients. Treatment with buprenorphine in abstinence focused programs is now available, but little is known about who can successfully be treated, and whether optimal patient care needs to focus on abstinence-only goals. This study analyzes an ongoing buprenorphine treatment program to assess risk factors and predictors of successful treatment in a rural primary care setting. **Methods:** Physicians in a rural family practice were certified to prescribe buprenorphine to outpatients. Subjects were enrolled in a convenience manner from the community, excluded if they were unwilling to discontinue drug use, to attend counseling sessions, or to make clinic appointments. The community setting was rural, with minimal alternate treatment resources. Outcome measures tracked were duration of enrollment in buprenorphine program, length of time with abstinence from substances and attendance at counseling meetings. **Results:** 75 patients enrolled in the buprenorphine treatment plan, with average age 28.1; 50% staying in the program > 16 weeks. 54% are male, over half have psychiatric diagnoses. Heroin is the drug of choice, however more than 35% use other substances. Those continuing in treatment were more likely to attend counseling sessions, to have access to transportation, to work and to supportive social contacts (specific OR pending full analysis). Characteristics of those with longest abstinence, and predictors of successful abstinence are to be derived from the data, to enable focused attention for those at risk of recidivism. **Conclusions:** Rural management of opiate addiction will require integration of addiction care into primary care practices. This study offers some information about predictors of successful management in the context of a full spectrum community practice.

PS313-Uncomplicated Acute Bronchitis: How Uncomplicated Is It?

Yasek, Van; Grasmick, Michael; Hahn, David, Dean Medical Center

Context: (1) The natural history of uncomplicated acute bronchitis is poorly understood. (2) Asthma in teens and adults often begins after an acute lower respiratory tract illness (aLRTi) such as acute bronchitis or pneumonia. Chlamydia pneumoniae has been associated with asthma initiation and promotion (chronicity and severity). Prospective cohort studies in primary care settings are important to study the initiation (acute phase) of chronic

lung diseases such as asthma and chronic bronchitis, and to detect possible infectious causes that may be difficult to detect, or undetectable, in later disease stages. **Objectives:** (1) Describe the natural history of uncomplicated acute bronchitis ("How long does the cough last?"). (2) Perform a pilot study of the frequency of chronic sequelae (asthma and chronic bronchitis) following an episode of apparently uncomplicated aLRTi. **Design:** Prospective microbiologic and clinical study. **Setting:** Primary care practices within a multi-specialty group practice, an academic family medicine residency, and a practice-based research network. **Patients:** Patients 10 years and older with an apparently uncomplicated aLRTi. **Intervention:** None. **Data Collection Schedule:** Baseline clinical data and throat swab; biweekly telephone follow-up until resolution of the aLRTi (acute phase), then every 3 months until one year post-illness (chronic phase). **Outcome Measures:** Main: Time until resolution of cough. Secondary: Frequency of new-onset asthma and chronic bronchitis; and polymerase chain reaction (PCR) test positivity for C. pneumoniae. **Results:** Thus far, 42 participants have been enrolled (goal: 100-200). None of the initial 29 throat swabs were PCR positive (0%, 95% CI 0% to 12%). Of 44 total chronic phase interviews, 21 (48%) were completed. Many participants failed to answer the telephone, or to return calls. **Conclusions:** Enrolling participants with aLRTi from primary care practices appears feasible, but telephone follow-up has been problematic. C. pneumoniae was not detected in the first batch of participants tested.

PS314-Will Frequent Provisions of Physicians' Hemoglobin A1C Profiles Improve Glycemic Control?

Pye, Yar, Lutheran Medical Center- Brooklyn; Yang, Liming; Wang, Randy; Tin, Myint; Saw, Thazin

Primary care physicians are the first line of care for patients with diabetes. However, their effectiveness is frequently suboptimal. As they are called upon to perform endless missions of preventive, curative and palliative care, these busy physicians need support and systematic feedback about their performance on glycemic control for quality improvement. Many studies demonstrated that different interventions improved diabetic control in primary care settings. One measure is ongoing monitoring of key variables with yearly feedback. It would be interesting to know whether more frequent feedbacks will improve the outcome of diabetic control. The objective of our project is to gauge performance improvement in glycemic control by accelerating provisions of physicians' profiles on HbA1c. This thirty-month-long observational program started at an urban-setting family medicine clinic in January 2004. All diabetic non-pregnant patients aged 20 or over were included (n=360). After physicians' profiles on HbA1c were provided once in 2004, patients without HbA1c for six months or high HbA1c over 9.5 were recalled. Average HbA1c (calculated from last known HbA1c values within last six months) was improved from 8.3 to 8.2 and uncontrolled group (HbA1c 9.5 and above) was reduced from 26% to 24% at the end of 2004. Provisions

of feedback and recall were intensified to semi-annually in 2005 with further improvement of HbA1c to 7.6 and uncontrolled group to 12%. The percentage of known HbA1c results was around 75% throughout the project. Feedbacks and recalls will be further accelerated to quarterly for the first two quarters of 2006. At the end of study in July 2006, practice profiles on HbA1c will be gauged to see any further reduction of average HbA1c and the percentage of uncontrolled group. Our paper may show that this accelerated feedback program may make physicians more effective in the delivery of diabetic care.

PS315-Primary Care Pathway to Improve Breast Diagnostic Care

Eberl, Margaret, SUNY at Buffalo; Mahoney, Martin; Fox, Chester; Watroba, Nancy; Edge, Stephen

Context: Initial diagnostic testing is a critical component of breast cancer treatment, but up to 30% of women with abnormal findings on mammography (Breast Imaging Reporting and data system, BI-RADS, 0, 3, 4 and 5) do not get appropriate follow-up evaluation. A multi-faceted practice intervention, consisting of automated monitoring using administrative claims data, primary care physician notification, and provision of a care pathway, can improve the rate of optimal follow-up of abnormal mammograms. **Objective:** to determine the impact of a multi-faceted practice-based intervention (utilizing electronic medical record monitoring, a standardized physician care recommendation pathway, physician notification and care management) to enhance optimal follow-up testing for abnormal mammograms. **Design:** A practice intervention using automated electronic record monitoring, coupled with primary care physician notification of mammogram findings, care pathways, patient education for abnormal mammograms. **Setting:** A large medical practice with 6 locations (one urban, 5 suburban). **Outcome Measures:** the electronic health record is being monitored for BI-RADS code for each mammogram and being matched with claims data from the payer. Care is then being monitored by claims data to assure appropriate and timely follow-up. **Results:** The results of this intervention will be measured against specific outcomes measures for BI-RADS 0, 3, 4 and 5 mammograms compared to women in the 4 preceding years. It is anticipated that the intervention will positively impact the rate of completion of timely follow-up for abnormal mammograms. **Current Challenges:** The biggest challenge is physician education and buy-in. This is being addressed at routine provider meetings. Distinguishing between tests not being ordered and tests not being completed due to patient refusal is important and will be tracked.

PS316-Developing a Nurse Practitioner Practice Based Research Network

Weyer, Sharon, Case Western Reserve University

Context: Only three primary care nurse practitioner (NP) practice-based research networks (PBRNs) exist in the US. **Objective:** To identify the representativeness of a new NP PBRN and potential contributions of NPs to patient education, coordination of care, and a holistic and empowered approach to the evaluation and management of patient needs in primary care. **Design:** A descriptive survey following an invitation to participate in a PBRN relevant to NP primary care practice. **Participants:** Respondents to a survey mailed to all 1018 nurse practitioners in 17 counties in Northeast Ohio using a mailing list obtained through the Ohio Board of Nursing. **Instrument:** The mailed survey will gather self-reported information about the socio-demographics, practice characteristics, patient population information, and level of interest in participating in a regional PBRN. **Results:** The survey and analyses will be completed prior to the NAPCRG meeting, and will provide important detail on the demographics, service population, practice characteristics and priorities for research in a large sample of NPs. A comparison of these data to national and state NP data and comparisons of those interested and not interested in participating in a PBRN will offer insights into the representativeness and potential impact of future studies of NP practice. **Conclusions:** These data will support the development of NP PBRNs and will inform the interpretation of future studies of evidenced based nursing practice, health care policy decisions and educational needs.

PS317-Assessing the Accuracy of a Physician Self-assessment (PSA) Tool for Quality Assurance

Krause, Julie, University of Buffalo Family Medicine, Inc DBA PCMPIIA; Berdine, Diane; Servoss, Tim

Context: Determining whether physicians are following clinical guidelines for disease management and preventive care represents a key aspect of quality assurance. Traditionally this has been accomplished through full chart reviews that are both time-consuming and expensive. As part of an ongoing quality assurance process, Gold Choice developed a Physician Self-Assessment (PSA) tool and auditing procedure for disease state management and screening adherence. **Objective:** The purpose of this study was to determine whether the PSA represents an effective, valid alternative to conducting full chart reviews in provider's offices to determine whether they are adhering to clinical guidelines. **Design:** Validation study. Physicians were sent self-assessment forms for all of their patients diagnosed with asthma and/or at the appropriate age for receiving mammography. Subsequently, a random sample of charts was subject to full review to verify information provided in the PSA. **Participants:** Physicians who are network providers for a partially capitated managed care program. **Instrument:** Brief self-report PSA questionnaires were developed for asthma management and mammography screening, respectively. The asthma PSA clinical guidelines questionnaire consisted of three questions. The mammography

PSA survey consisted of a single yes/no question. The chart findings were then compared with the providers' PSA survey responses for asthma and mammography, respectively. Outcome Measure: Percent agreement between PSA and full chart review. Results: An 85% concordance was found between the Asthma PSA responses and the chart data. The comparison of the mammography PSA responses to the charts resulted in an 88% accuracy rate. Conclusions: A high degree of correspondence was noted between physicians' PSA responses and information documented in the randomized sample of charts. The accuracy rate for both PSA tools was greater than 80%. These findings suggest that the PSA instrument, combined with a randomized chart audit process, is a valid alternative to full chart reviews in physicians' offices.

PS318-Does Pulse Rate Predict Severity of Acute Infection in Children?

Thompson, Matthew, University of Oxford; Harnden, Anthony; Perera, Rafael; Mayon-White, Richard; Mant, David

Context: Assessing children with febrile illness is a core clinical skill in primary care. The evidence base for the clinical methods currently used to determine which children require further investigation or hospital admission is lacking, and may result in misdiagnosis. We hypothesize that tachycardia can be used to predict the severity of acute infection in children in primary care. Objective: To determine whether tachycardia predicts the presence of serious infection in children we will i) construct age-specific centile charts of pulse rate by temperature for children presenting with acute infections, and ii) assess the optimal "cut-off" point to signal high risk of adverse clinical outcome. Design: Cross-sectional study of children presenting to primary and secondary care with acute infections. Setting: Ten general practice clinics, and one hospital pediatric assessment center in the UK. Patients: Children age 3 months to 16 years presenting with acute infection. Instrument: Standardized measurement of temperature and pulse rate. Final diagnosis and outcome obtained from medical records. Outcome Measures: Primary outcome measure is type of infection (eg self-limiting, focal bacterial, serious bacterial infection). Secondary outcome measures include hospital referral or admission, and type of treatment. Results: A total of 2,700 children have been recruited (1,900 from primary care, and 800 from the pediatric assessment center). We will use regression-based methods to create "centile surfaces" of pulse given age and temperature for different age groups. We will use ROC analysis of outcome data to determine the optimal "cut-off" points. Conclusions: Evaluating children with acute infections in primary care is challenging. Preliminary analysis suggests that tachycardia (adjusted for level of temperature) is more common in children presenting with serious infections. Results: Final results will be presented at the conference. Measuring and interpreting vital signs in

children may be an important, yet overlooked, diagnostic tool in primary care.

PULMONOLOGY (PS319-PS322)

PS319-GpiAG/Leicester Asthma and Dysfunctional breathing study (GLAD)

McKinley, Robert, University of Leicester, LGH; Mellor, Sarah; Thomas, Mike; Pavord, Ian; Scullion, Jane; Watkin, Gillian

Context: Of patients treated for asthma in one family practice, 29% had symptoms suggestive of dysfunctional breathing. Over half showed a significantly improved quality of life following a short physiotherapy based breathing retraining program. Objective: To assess the effect of breathing retraining on asthma-related health status, asthma control and objective indices of asthma in people with symptomatic asthma. Design: Randomized controlled trial. Setting: Ambulatory care. Participants: Family practice patients' aged 18-65 with a diagnosis of asthma who have received at least one asthma prescription in the previous year with and without symptoms of dysfunctional breathing (Nijmegen Questionnaire score of ≥ 23). Intervention: Breathing retraining supervised by a respiratory physiotherapist compared to an attention control of generic asthma education provided by a nurse. Outcome Measures: Asthma related quality of life (Juniper AQLQ), generic quality of life (Euroqol), asthma control (Juniper ACQ), Nijmegen Questionnaire, Hospital Anxiety and Depression, bronchial hyper-responsiveness (methacholine PC20), sputum eosinophil counts, exhaled nitric oxide concentrations, capnography and hyperventilation studies, before and 1 month after the intervention and control procedures. The questionnaires will be re-administered 6 and 12 months following the completion of intervention. Results: Intention to treat analysis using change in asthma-related quality of life in people with and without symptoms of dysfunctional breathing at 1-month as the primary outcome measure. Secondary analyses will examine the effects of the intervention on asthma control, bronchial hyper-reactivity and airways inflammation in people with and without baseline dysfunctional breathing, and the persistence of changes. Conclusion: By 12 April 2005, of the 4949 invited, 150 participants have been randomized, 15 have withdrawn, 105 have completed the 1 month post intervention, 75 the 6 month and 44 the final measures. We are on target to recruit and have data on 212 participants by January 2007 and to report results in 2007.

PS320-AZMATICS: Azithromycin Asthma Trial in Community Settings

Grasmick, Michael; Yasik, Van; Hahn, David, Dean Medical Center

Context: Asthma etiology is unknown. Asthma incidence, prevalence, morbidity and mortality are increasing worldwide for unknown reasons. Current asthma treatments are palliative, not curative. Asthma effectiveness studies are lacking.

Emerging evidence implicates *Chlamydia pneumoniae* infection as a cause for asthma initiation, exacerbation, promotion (persistence and severity) and worldwide prevalence. Open-label and randomized trials suggest positive effects of antibiotics on asthma symptoms. Our previous pilot clinical trial results found positive symptom improvement 3 months after completing a 6-week course of azithromycin. **Objectives:** The primary objective is to investigate whether a 12-week course of azithromycin will improve asthma clinical status up to one year after treatment. The secondary research question is whether treatment effects will differ between patients with “pure” asthma, compared to asthma patients who also have an element of irreversible airflow limitation (“COPD with asthma”). **Design:** Double-blind, randomized trial. **Setting:** Practice-based research network (PBRN) primary care (mostly Family medicine) practices in North America. **Patients:** Up to 600 adults with active asthma (persistent symptoms, or in exacerbation) and objective evidence of reversible airway obstruction. **Intervention:** Tablets of azithromycin or matching placebo for 3 months: one tablet daily for 3 days, then one tablet each week for 11 weeks; each tablet contains 600 mg azithromycin or identical matching placebo. **Outcome Measures:** Primary outcome: Asthma symptoms; Secondary outcomes: Rescue medication use, asthma control, exacerbations, and quality-of-life. All outcome data will be collected over the Internet via patient self-report. Secondary analyses will stratify on smoking and COPD subgroups. **Results:** Six PBRNs have committed to participation; enrollment began in April, 2006, and will end in September, 2007. Study completion is expected in September, 2008. **Conclusions:** Successful implementation of AZMATICS will demonstrate the importance of performing asthma effectiveness studies in settings where the majority of asthma is encountered and managed.

PS321-Step-up and Step-down in Management of Asthma

Wollan, Peter, Olmsted Medical Center; Yawn, Barbara; Bertram, Susan

Context: To respond to changes in severity or frequency of symptoms, asthma therapy should be modified on a regular basis. The NAEPP guidelines term this monitoring and therapy modification step-up and step-down therapy. Although research has often documented under-treatment of asthma, little attention has been given to the prevalence and process of step-down therapy. **Objective:** To identify the frequency and context of episodes of step-up and step-down during management of asthma. **Design:** Medical record review. **Setting:** Family practice in a community. **Subjects:** A randomly selected cohort of asthma patients in Olmsted County, MN, age 7 to 40. **Results:** Medical records of 397 subjects, all with an asthma diagnosis, were abstracted for 2003-4. Subjects were predominately white (81%), median age 20, and 60% women and girls. Asthma severity was

generally not recorded, but 181 met an operational definition of “severe” based on number of ED and office visits, hospitalization, and use of oral steroids. At the baseline visit in 2003, the mean number of asthma drugs per patient was 2.12 (sd 1.1), and did not vary by age or sex ($P=0.92$ and 0.65 respectively). At baseline, 348 (88%) of the subjects had a short acting beta agonist included in their prescriptions, 160 (40%) had an inhaled corticosteroid, 99 (25%) had a leukotriene modifier, 95 (24%) had a combination drug prescribed, 51 (13%) had a long acting beta agonist (not including those taking Advair) often in combination with inhaled corticosteroids or leukotriene modifiers (but not always), 73 (18%) were prescribed oral steroids, 10 (2.5%) were prescribed cromolyn sodium and 6 were receiving nebulizer treatments with an unspecified medication. Over the two years, medications were stepped up 2145 times in 335 subjects, and were stepped down 310 times in 159 subjects. **Conclusions:** Modification of asthma therapy is heavily weighted toward step-up.

PS322-Evaluation of the Adherence to Diagnosis and Management Guidelines for COPD in the Outpatient Setting

Chavez, Pompeyo, University of Texas Medical Branch; Shokar, Navkiran

Context: Chronic Obstructive Pulmonary Disease (COPD) is the fourth leading cause of chronic morbidity and mortality in the United States. Primary care physicians bear the brunt of the responsibility for identifying, diagnosing, staging and treating this disease. The GOLD guidelines are the most important tool for this purpose. However, little is known about whether family physicians are adhering to them. It is important to answer this question, in order to evaluate and improve patient care. **Objective:** 1.) To determine the percentage of patients with COPD that were diagnosed by family physicians on the basis of spirometry, and to describe the proportion diagnosed correctly. 2.) To determine the prevalence of smoking cessation advice given 3.) To determine the type of medications used to treat COPD, and if these were in accordance with the guidelines. **Design:** Retrospective medical record review. **Setting:** University affiliated family medicine clinic serving a racial/ethnically diverse population of 50 000. **Participants:** Two hundred patients with COPD attending a family medicine clinic. **Instrument:** A data abstraction form was designed and used to collect information about mode of diagnosis, smoking cessation counseling and type of treatment. Baseline sociodemographic information will also be collected. **Outcome Measures:** Aim 1: Proportion of patients having had spirometry for diagnosis; proportion correctly diagnosed. Aim 2: Proportion having smoking cessation counseling when indicated. Aim 3: Type of treatment given by class, and the proportion having stage appropriate treatment. **Analysis:** The results will be presented as percentages and a chi square will be used to see if there are any differences among sociodemographic subgroups. **Results:** 134 charts have been

abstracted so far. It is anticipated that spirometry will be vastly underused, that therapy will not be stage appropriate and that smoking cessation advice will be a lacking component.

VULNERABLE POPULATIONS (PS323-PS331)

PS323-Understanding 'In-system' Access to Primary Care: Results From the Comparison of Models of Primary Care Project

Kristjansson, Elizabeth, University of Ottawa; Barham, Vicky; Dahrouge, Simone; Gebremichael, Goshu; Bronsard, Annie; Hogg, William; Russell, Grant; Muldoon, Laura
Context: Accessibility is a cardinal goal of primary care. Population health outcomes are positively related to access to primary care. Thus, it is important to understand how health care delivery systems and other factors influence access. Objectives: This paper, focusing on 'in-system access,' presents selected findings from a large study comparing overall quality of primary care among the four main models of health care delivery in Ontario, Canada. The paper will answer the following questions: 1) Controlling for other factors, does access to primary care differ according to model of delivery? 2) Which individual, practice, and contextual factors predict access to care? 3) Do inequalities in access to care exist? Design: Data are from a large mixed methods study of models of primary care. A conceptual framework guided data collection and analysis. Setting: This study was performed across Ontario, Canada's largest province. Participants: Data collection is in the final stages; we expect to survey at least 5000 patients in 160 practices as well as the primary care providers in these practices. Qualitative interviews were performed with a select sample from these groups. Instrument: The Primary Care Assessment Tool was the basis for surveys of patients and providers. Outcome Measures: The access measures comprised 4 questions from the patient survey. Descriptive statistics, ANOVAs, and multi-level regression analysis will be used to answer the research questions. Results: Preliminary analyses indicate differences in access among primary care models. Our qualitative analysis will help to gain an in-depth understanding of factors that promote or hinder access. Final results will be presented. Conclusion: The insight provided by this research can give practitioners and policy makers guidance on factors that promote patients' access.

PS324-Die Another Day: Hmong Decision Making for Kidney Stones

Culhane-Pera, Kathleen; Lee, Mayseng

Context: Chart review at a urological practice revealed that Hmong patients present with higher rates of kidney stones, uric acid stones, and complications from kidney stones than non-Hmong patients. Objective: Elucidate Hmong explanatory models and decision making processes about kidney stones and urologists' experiences working with

Hmong patients in order to identify factors that need to be addressed to reduce this health disparity. Design: Qualitative exploratory research using in-depth interviews. Setting: Midwestern metropolitan community. Participants: 10/16 Hmong patients with kidney stones who had accepted and refused urological procedures at one urological clinic in one year agreed to participate. Also, 9 family members, 4 traditional healers, and 5 urologists. Results: Hmong concepts of kidney function and explanatory models of kidney stones are a blend of traditional and biomedical concepts. In making decisions about urological interventions, Hmong patients balance fear of disease (ie, pain and renal failure) with fear of doctors (ie, complications from interventions and anesthesia). While patients have variable balance points to accept interventions, the basic philosophy of "die another day" captures people's preference to act today so as to postpone "death" and risk of death – whether by disease or procedure – until tomorrow. While urologists professed their enjoyment of diverse patients, they also expressed frustration, impatience, and anger of patients' decision making processes and fear for patient's wellbeing. Urologists had multiple strategies for dealing with these challenges, with some success in reducing patients' fears of procedures. Conclusions: To improve health care for Hmong patients with renal stones, the Hmong community needs education about the recurrent and nearly asymptomatic but potentially life-threatening nature of kidney stones and needs support to decrease their fears of interventions, while providers need additional institutional assistance in providing care to non-English speaking patients and families.

PS325-Patients' Functional Health Literacy Skills and Quality of Patient-Physician Communication during Family Medicine Encounters

Rogers, Edwin, University of Tennessee Graduate School of Medicine; Wallace, Lorraine

Context: The influence of patients' functional health literacy skills (FHLS) on the quality of communication dynamics during the patient-physician encounter is unknown. Objective: To examine the association between patients' FHLS and patient-physician communication during family medicine encounters. Design: Cross-sectional study. Setting: University-based family medicine clinic in the Southeastern United States. Patients: English-speaking adults ≥18 years of age presenting to the clinic were eligible. Patients too acutely ill, or who had severe visual or cognitive impairment or overt psychiatric illness were excluded. Outcome Measures: A sociodemographic survey and the Rapid Estimate of Adult Literacy in Medicine (REALM) were orally administered to patients prior to their clinical encounter. Medical encounters were audio taped and analyzed using the Roter Interaction Analysis System (RIAS). Communication was evaluated with the RIAS to reflect data gathering, patient education and counseling, rapport building, partnership building, verbal dominance, and patient-centeredness. Results: Of the 225 patients enrolled, 52 had low FHLS (REALM=≤18), while 35

had marginal FHLS (REALM=19-60). The medical encounter was significantly shorter among patients with low as compared to marginal FHLS (11.37 ± 5.00 versus 15.12 ± 6.81 minutes, $p < .00$). When compared to patients with low FHLS, family physicians made more statements related to positive rapport building among patients with marginal FHLS (23.34 ± 10.69 versus 30.14 ± 20.98 , $P < .05$). Patients with marginal FHLS were more engaged during the medical encounter as compared to patients with low FHLS (3.43 ± 4.33 versus 1.75 ± 1.56 , $P < .05$). Family physicians were more dominant and assertive among patients with low as compared to marginal FHLS (3.92 ± 0.33 versus 3.66 ± 0.54 , $P < .05$). **Conclusions:** Physician-patient communication during family medicine encounters differs among patients with low versus marginal FHLS. Physicians spent less time, were less interested in building rapport and were more dominant when working with patients with lower FHLS.

PS326-Using Volunteer Bilingual Hospital Employees as Dual-rolled Medical Interpreters

Salas-Lopez, Debbie, UMDNJ-NJ Medical School; Mouzon, Dawne; Barba, Vincent; Natale-Pereira, Ana; Jimenez, Lissette; Vega, Marielos

Context: Minority populations are expected to comprise 40% of the population by 2030. The Institute of Medicine reports that racial/ethnic gaps in care can be attributed to a range of patient-level (patient preference, treatment refusal, clinical appropriateness of care), provider-level (bias, stereotyping, uncertainty), and system-level factors (lack of interpreters, geography, managed care system). These factors influence the health-seeking process, and have a significant impact on patient-physician/institution interactions, patient adherence to therapeutic regimens, and decision-making during clinical encounters. **Objective:** To assess the effectiveness of a new curriculum ("Bridging Language and Culture in Healthcare Communications," developed by the authors) on improving medical interpreting skills of volunteer hospital employees. **Design:** Intervention study. **Setting:** A large public hospital in Newark, NJ (504 beds with 19,000 admissions per year). **Participants:** 31 bilingual (English/Spanish) hospital employees who expressed interest in serving as a volunteer medical interpreter. **Intervention/Instrument:** Interpreters participated in a one-day medical interpreting training course. Before and after training, interpreters completed role-play mock interpreting scenarios and completed a questionnaire developed by the authors. **Outcome Measures:** Medical interpreting skills (cultural competency knowledge and attitudes) **Results:** It is expected that, after the training course, interpreters will have improved skills in medical interpretation, in addition to improved scores on cultural competency knowledge and attitudes. **Conclusions:** If successful, this curriculum can be piloted to other hospitals looking for effective and feasible methods for training their employees to serve as volunteer medical interpreters.

PS327-Maintaining Medical Student Interest in Working With Underserved Populations Through the Clinical Clerkships

Hill-Sakurai, Laura, University of California- San Francisco; Kelly, Kristen; Wilson, Elisabeth; Ermoian, Ralph

Context: Medical schools aim to encourage student to consider careers that include caring for patient from underserved background and addressing health disparities. Survey research, however, suggests that idealism and altruism, traits associated with choosing such careers, decline among students during their training, with the greatest drop occurring over the required third year clinical clerkships. Little research has examined what clerkship experiences influence interest in choosing careers that include caring for underserved patients. **Objective:** To examine what clerkship experiences affect students' perceptions of working in an urban underserved setting; to explore student strategies in evaluating an "challenging" patient from an urban underserved background. **Design:** Semi-structured interview with hypothetical case discussion; administered before and after required clinical clerkships. **Setting:** Publicly funded medical school. **Participants:** Twenty-two third year medical students. **Results:** Several themes were noted among students whose interest in underserved care remained stable or increased over their clerkships. These students liked to work in a setting where they felt they could "make a difference". They also described satisfaction in working with attendings, residents and students with whom they shared similar values. They noted enthusiasm for exploring the non-medical details of their patients' cultural, social, and personal backgrounds. In talking through a sample patient, these students were skilled at integrating medical and non-medical contextual details of the patient's background. Students less interested in careers focused on underserved care described enthusiasm about other interests (such as specialty care, disease-focused research, etc.) that grew, etc) overtaking previous interests. **Conclusion:** It is hoped these themes can benefit clerkship interventions designed to maintain students' interest in working with patients from underserved backgrounds.

PS328-Effect of Financial Incentives on Improvement in Medical Quality Indicators for Primary Care

Gavagan, Thomas, Baylor College of Medicine; Adams, Gerald; Goodrick, Kenneth

Context: Pay-for-Performance has become increasingly popular among health plans and other purchasers in order to reward providers for achieving specified quality of care targets. However, there is very little research in the medical literature to evaluate its effectiveness. **Objective:** To evaluate the effect of a physician pay-for-performance program on quality of preventive care in a community health center network. **Design:** We conducted a retrospective review of administrative data to evaluate a natural experiment in a network of publicly funded primary care clinics. Physicians in six out of eleven clinics were given a financial incentive for achieving group targets in preventive care such as pap smears

and mammography as well as productivity. Analysis includes comparison of quality indicator performance before and after initiation of incentive and between clinics with incentive and controls. Setting: The safety net system of public community health centers in Houston/Harris County. Physicians are contractually provided by two medical schools which staff 11 primary care health centers between them. Participants: Approximately 110 faculty physicians. Intervention: Beginning in 2002, financial incentives were awarded annually by clinic with one third of the total incentive allocation was determined by reaching quality targets with the remainder determined by physician productivity. The maximum total incentive per physician was \$12,000. Outcome Measures: Outcomes assessed included proportion of patients receiving preventive tests over six years, including before and after onset of the incentive program. A repeated measures mixed model was used to analyze the effect of performance incentives on each indicator. Results: There were no significant differences in the indicators between clinics which had incentives and those that did not. Conclusion: In this retrospective, natural experiment in a community health center setting there was no apparent effect of financial incentives on performance of preventive quality indicators.

PS329-Integrating Mental Health Services for Homeless Mothers and Children in Primary Care

Weinreb, Linda, *University of Massachusetts Medical School*; Nicholson, PhD, Joanne

Context: The prevalence of families among the homeless, typically a single mother with two children, has grown significantly over the past 20 years. Three out of four homeless mothers meet criteria for at least one psychiatric diagnosis. Most homeless mothers have experienced domestic violence and cope with the physical and emotional health sequelae of trauma. Primary health care offers a context for the identification and management of mental health disorders and integrated treatment approaches. Objective: Describe the Homeless Families Program (HFP), a community health center-based, multi-modal intervention in Worcester, MA and one of eight programs selected by SAMHSA as part of its multi-site Homeless Families Evaluation. Design: Describe service record data completed by all staff types (family advocates, behavioral health providers, and primary care providers) and collected during a 12 month period for each encounter in 2002-2003 (N= 7214 encounters) that allow for description of provider roles, and HFP functions, and processes. Descriptive analyses were conducted. Participants: Multidisciplinary providers associated with the HFP. Setting: Federally funded community health center. Results: Data provide evidence of the HFP's flexibility and family-centered services. Over half of HFP encounters focus on behavioral health needs; 75% address basic needs. Health provider encounters commonly deal with parenting issues (35%), child behavior (16%), and mental health and trauma (39%).

Conclusion: It is feasible to integrate services that address physical and behavioral health, and support needs of homeless families in a primary care setting. Behavioral health issues are often the foci of encounters for all provider types. While the primary care setting provides an ideal setting for integrated services for homeless families, successful implementation requires a range of strategies.

PS330-Connecting Youth With Care: Mental Health and Addictions Navigation

Anderson, Ellen, *Vancouver Island Health Authority*; Larke, Susan; Moselle, Kenneth; Jeffery, Donna

Context: The 2002 Canadian Community Health Survey identified youth 15-24 as having higher prevalence (18%) of mental health/ substance use problems than adults over 25 (10%). Youth were less likely to seek help and more likely to perceive unmet need when they did seek help. Objective: To understand referral patterns, service needs, barriers to seeking and receiving service in youth 15-24, using a community based navigation service available to any youth or adult with mental health or substance misuse problems. Design: Community based action research comparing youth and adult data over one year. Observational mixed method study using anonymized assessment and outcome data, collaborative service plans, youth/adult focus groups, service-provider interviews. Setting: Underserved semi-rural population of 17,000 on southwest Vancouver Island in British Columbia, including three First Nations communities. Participants: Youth and adults seeking or referred to navigation service. Youth/adult volunteers for focus groups and interviews. Interviews with service providers from agencies on project steering committee. Intervention/Instrument: Strength-based mental health/substance use assessment and planning tools modified for use with youth. Semi-structured service provider interviews. Youth/adult focus groups. Outcome Measures: Number of clients seeking help, reasons for seeking care, barriers to seeking and receiving care, referral sources, linkage process, service plans and outcomes. Results: Most youth (45%) were referred by family, 30% by school or local employment agency. 72% presented with mood disorders, 39% with family problems, 30% with self-harming behavior, 24% with issues around substance misuse. Most youth were seen with one or more family member. Youth took longer to engage, needed more visits, time and outreach than adults. Conclusions: Youth mental health linkage differs substantially from adult process in the areas of referral, engagement, relationship development, presenting problems, resources, barriers and outcomes. Linkage models must understand and accommodate these differences.

PS331-Photography as Empowering for Aboriginal Breast Cancer Survivors: Suggestions for Primary Health Care

Thomas-MacLean, Roanne, University of Saskatchewan; Poudrier, Jennifer; Brooks, Carolyn

Context: Despite some recognition that Aboriginal breast cancer survivors may have unique health care needs, little research has explored the experiences of Aboriginal women.

Photography has emerged as a new qualitative method which facilitates a participatory approach to research, but its implications for research in primary care have not been examined.

Objective: To explore Aboriginal women's experiences with breast cancer survivorship, with an emphasis on their primary health care needs, while also examining the utility of photography for primary care research.

Design: Qualitative study, using photography and in-depth interviews. Setting: Saskatchewan, Canada.

Participants: Aboriginal women one year post breast cancer diagnosis. Results: While Aboriginal breast cancer survivors

cannot be viewed as a homogeneous group, participants indicated three areas of priority for primary health care: 1) traditional values and beliefs should be discussed; 2) typical support groups may not meet the needs of Aboriginal women; and 3) there is a need to coordinate social services with health care.

Conclusions: Participants found the process of taking photos to be empowering, suggesting that photography may be a vital method of research with marginalized groups. Further, the photographs provided in-depth coverage of key health care issues, which would not have been shared using more conventional means of data collection, such as interviews alone.

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