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Evidence-Based Models of Integrated Management of Depression in Primary Care

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A variety of epidemiologic studies has demonstrated the high prevalence of depressive disorders in primary care [1–4]. Indeed, by patient preference, the majority of treated depressive episodes are in primary care practices [5,6]. This is particularly true for older persons [7,8]. Accordingly, it is not surprising that primary care clinicians place a high priority on recognizing and treating their depressed patients [9,10]. However, formidable obstacles impede appropriate treatment and the prevention of relapse or recurrence, including time pressures, the inclination of both clinicians and patients to focus on presenting symptoms and acute problems, the limits of reimbursement, and the lack of well-organized mental health systems capable of consulting about and treating patients in most primary care settings [9–13].

In response to these obstacles, first-generation health services research has produced multifaceted interventions. The interventions with collaborative care, in which an on-site mental health specialist and the primary care clinician shared the care of depressed patients, most successfully overcame many of

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these systemic obstacles, enhanced the quality care which they provided, and improved the outcomes of patients with major depression [14–16]. The high cost and intensity of collaborative care necessitated a second generation of randomized controlled trials, which were grounded further in the principles and practices of chronic disease care [17,18]. This chronic care model involves the redesign of practice systems, including physician education, patient education, patient registries, and on-site nonspecialist physician extenders supervised by a mental health specialist. This model resulted in an increased frequency of patient contact, with closer monitoring of outcomes and adherence. Compared with the outcomes achieved by usual care, this chronic care model of depression demonstrated significant clinical improvements [19,20]. Contemporary studies incorporating telephone management by nonspecialist physician extenders also demonstrated the effectiveness of off-site interventions by physician extenders [21,22]. Collectively, these second-generation randomized controlled trials (RCTs) demonstrated that when treatment guidelines are integrated into a practice with a multifaceted and longitudinal treatment approach, the intervention systems are superior to usual care practices in terms of treatment adherence, outcomes, and patient satisfaction [23].

The present authors' previous review of second generation RCTs [24] concluded that despite much progress, important concerns remain unresolved. Prominent among them are the following: (1) the interventions often do not persist or disseminate into community practice when the research is completed, or if they do, the effect may not be as strong; (2) it is unclear how well these interventions apply to older persons, given their increased medical comorbidity; and (3) a "voltage drop" occurs when results from efficacy trials are translated into effectiveness trials, particularly when trials have been conducted in nonacademic settings [25]. These and other concerns have stimulated a third generation of related health services studies. This article reviews these four recent studies (Tables 1 and 2), which summarize the design characteristics of the four system-oriented studies. Of particular interest in the following analysis is the manner in which psychiatrists and other mental health specialists can adapt consultation-liaison skills traditionally exercised in general hospitals to the exigencies of primary care practices that subscribe to chronic illness disease management principles. Because of the recent "black box" warnings about suicidal ideation with newer antidepressants [26,27], an important concern in primary care depression management is to maintain primary care clinician comfort with prescribing antidepressants and monitoring for suicidal ideation. Thus, at present, the potential influence of newer caregiving mechanisms on the management of suicidal ideation and behaviors presented by depressed primary care patients must also be considered.

Primary care research in substance abuse and mental health for the elderly

Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) is a multisite trial comparing service use, outcomes,

Table 1
Study design of four multisite studies of depression management in primary care

Feature	PRISM-E	IMPACT	PROSPECT	RESPECT-D
Sponsors	Substance Abuse and Mental Health Services Administration; US Veterans Affairs; Health Resources and Services Administration	John A. Hartford Foundation; California Healthcare Foundation; Hogg Foundation; Robert Wood Johnson Foundation	National Institute of Mental Health	John D. and Catherine T. MacArthur Foundation
Health care organizations	10	8	3	5
Practices	30	18	20	60
Primary care clinicians	153	324	186	180
Psychiatrists	18	7	5	6
Care managers	Not applicable	17	16	9
Patients	2022[a]	1801	598	433[b]
Minimum age	65	60	60	18
Recruitment method	Screening	Screening and PCP referral	Screening	PCP referral
Disorders	Maj dep, min dep, dys, GAD, alcohol	Maj dep, dys	Maj dep, min dep	Maj dep, dys
Comparison group	Referral to mental health specialty care	Usual care	Usual care	Usual care
Randomization unit	Patient	Patient	Practice	Practice
Outcome time points	3, 6 mo	3, 6, 12 mo	4, 8, 12 mo	3, 6 mo

Abbreviations: Alcohol, at-risk drinking; dys, dysthymic disorder; GAD, generalized anxiety disorder; maj dep, major depression; min dep, minor depression; PCP, primary care provider.

[a] 1,390 (69% had a depression diagnosis, without at-risk alcohol drinking).

[b] 987 patients were referred and offered treatment, but all did not meet eligibility criteria for the independent evaluation in the RCT.

and costs in integrated versus enhanced referral models of mental health care for older persons with depression, anxiety, or at-risk alcohol consumption. Integrated treatment models have the following features: mental health services are colocated in the primary care setting, with no distinction in terms of signage or clinic names; mental health services are provided by licensed mental health providers from several disciplines (with back-up from a geriatric psychiatrist); verbal or written communication about the clinical evaluation and treatment plan transpires between the mental health and primary care clinicians; and the patient meets with the mental health care

Table 2
Depression management intervention in four multisite studies of depression management in primary care

System change	PRISM-E	IMPACT	PROSPECT	RESPECT-D
	Integrated mental health services	Care smanager	Care manager	Care manager
Treatment algorithm	No	Yes	Yes	No
Care management location	N/A	On site	On site	Off site
Patient education and self-management	Variable	Yes	Yes	Yes
Case management	Yes	Yes	Yes	Yes
Care management to patient contact	N/A	Face to face; telephone	Face to face	Telephone
Psychiatric supervision	N/A	Face to face; telephone	Face to face	Telephone
Care management counseling	N/A	PST-PC	IPT	Supportive
Psychologic supervision	N/A	Telephone	Face to face	N/A
Mental health specialty treatment location	On site	On site	On site	Off site
Geriatrician supervision	No	Yes	No	No
Depression measure for care management	N/A	PHQ-9	HAM-D	PHQ-9
Outcome measure	CES-D change; no depression diagnosis on MINI	HSCL response = 50% drop; remission = score $\leq$0.5	HAM-D response = 50% drop; remission = score $\leq$10 or $\leq$7	HSCL response = 50% drop; remission = score $\leq$0.5

Abbreviations: CES-D, Center for Epidemiologic Studies Depression Scale; HAM-D, Hamilton Rating Scale for Depression; HSCL, Hopkins Symptom Checklist; MINI, Mini-International Neuropsychiatric Interview; N/A, not applicable.

provider within 2 to 4 weeks after the primary care clinician visit. It is believed that colocating behavioral health care within primary care reduces the stigma associated with traditional mental health systems. Additionally, transportation problems are minimized because visits for physical and behavioral health can be combined. Finally, the colocation of the generalist and specialist can facilitate communication among providers and permit more comprehensive treatment planning.

Enhanced referral models include the following elements: patients are referred to specialty mental health care within 2 to 4 weeks of the primary care

clinician appointment; mental health evaluation and treatment occur in a physically separate location by licensed mental health professionals from several disciplinary backgrounds; and specialized mental health clinics coordinate follow-up contacts if the patient fails to attend the first scheduled visit, assure transportation, and facilitate direct or third-party coverage for the costs of the specialty mental health visit. A key advantage of the specialty referral system is its ability to provide a fuller range of services as dictated by patient needs, (eg, individual and group psychotherapeutic options, which are typically unavailable in the primary care setting). Mental health clinics may also be better able than primary care sites to offer the confidentiality sought by patients receiving behavioral health services.

Previous studies of integrated or collaborative care have compared outcomes with usual care, which consists of informing the primary care clinician of the patient's condition and having the clinician treat or refer the patient as appropriate. PRISM-E, however, uniquely uses an enhanced referral process as the comparison arm. Although access to treatment was enhanced under the comparison referral model, it nevertheless resembled a geriatric mental health specialist's usual practice.

With respect to initial engagement in treatment as an outcome measure, the integrated model has been found superior to the enhanced referral model [28]. Seventy-five percent of subjects with depression had at least one mental health visit in the integrated model compared with only 52% in the enhanced referral model (OR 2.86; 95% CI, 2.26%, 3.61%). Although patients in enhanced referral were more likely to be treated by a psychiatrist, there were no significant differences in remission rates in the integrated versus referral model for major depression (28.2% versus 32.7%) or other depression (57.9% versus 54.3%) [29]. These findings endorse integrated services as the preferred mode of psychiatric care entry by older primary care patients with relatively equivalent outcomes to specialty care.

Improving mood: promoting access to collaborative treatment

Improving Mood: Promoting Access to Collaborative Treatment (IMPACT) is a multisite primary care trial of collaborative [14] and stepped care [16] for late-life depression that integrates brief psychotherapy and medication management [30]. IMPACT draws on earlier studies that focused on adults of all ages and that suggested that the barriers to effective treatment of depression might be more problematic for older adults because of stigma, ageism, and the clinical complexities associated with more frequent medical comorbidity. Thus, IMPACT focuses only on late-life depression and incorporates some design features specific to the elderly.

At each of 18 participating primary care clinics, older adults who met structured diagnostic criteria for major depression or dysthymic disorder were randomly assigned to a collaborative stepped-care program or to care as usual. In the intervention program, a depression care manager

(a psychologist or a registered nurse with training in brief psychotherapy) based in the primary care clinic worked with patients and their primary care physicians for up to 12 months. These patients received a 20-minute educational videotape and a booklet about late-life depression and were encouraged to have an initial visit with the care manager at the primary care clinic. New cases and those needing treatment plan adjustments were discussed with a supervising team psychiatrist (often a geriatric specialist) and a liaison primary care physician (usually a geriatrician) during a weekly team meeting. The care manager then worked with the patient and the patient's regular primary care clinician to establish a treatment plan according to a stepped-care treatment algorithm. However, the patient and the primary care clinician made the actual treatment choices. The IMPACT treatment algorithm suggests an initial choice of an antidepressant medication (usually a selective serotonin reuptake inhibitor) or a course of Problem-Solving Treatment for Primary Care (PST-PC) [31,32], consisting of 6 to 8 brief sessions of structured psychotherapy for depression, delivered by the care manager at the primary care clinic. Care managers received separate ongoing supervision in PST-PC from academic psychologists who were experts in PST-PC. Care managers also referred patients for additional health or social services, as indicated clinically. Depression outcome was monitored with the Patient Health Questionnaire (PHQ-9) depression scale [33] and an Internet web-based clinical information system [34]. During the acute treatment phase, in-person or telephone follow-up contacts were scheduled at least biweekly.

The IMPACT intervention thus includes key components of evidence-based models for chronic illness care [18,35]: collaboration among primary care providers, patients, and specialists; a personalized treatment plan that includes patient preferences; proactive follow-up and outcome monitoring by the care manager; and a protocol for stepped care that includes the targeted use of psychiatric consultation. In contrast to this planned range of services, usual care patients may receive any primary care or specialty mental health care available to the practice.

The 12-month outcomes have shown consistent and significant differences in favor of the intervention [36]. Forty-five percent of intervention patients achieved a reduction of 50% or greater in baseline depressive symptoms, and 25% had complete remission, compared with 19% and 8%, respectively, of usual care participants. Intervention subjects also experienced higher rates of depression treatment and satisfaction with depression care, lower depression severity, less functional impairment, and greater quality of life than did participants who were assigned to usual care. The fact that all practices in the seven participating organizations obtained these results suggests that collaborative stepped-care management is more effective than usual care for resolving depression in a wide range of older people and diverse types of medical care organizations.

Prevention of suicide in primary care elderly: collaborative trial

The Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) is a multisite collaborative study funded by the National Institute of Mental Health in 1998 and conducted by the Late-Life Mood Disorder Intervention Research Centers at the University of Pittsburgh, the University of Pennsylvania, and Cornell University. PROSPECT was designed to assess whether depression treatment in primary care settings can reduce the risk of suicide in elderly patients. The research design of PROSPECT randomized primary care practices either to an intervention arm or to usual care. In practices randomized to the former, a depression care manager (a nurse, psychologist, or social worker supervised by a geriatric psychiatrist and a psychologist) facilitated adherence to a depression treatment algorithm. The algorithm considered antidepressant medication to be the first-line treatment, and it was provided at no cost to intervention participants. In keeping with the algorithm, the care manager obtained information about the patient's clinical status before the office visit and provided it to the physician. This "on-time, on-target" information was designed to influence guideline adherence by physicians and patients. The physician, who was familiarized previously with Agency for Health Care Policy and Research guidelines, made treatment decisions informed by recommendations from the care manager and in keeping with clinical judgment about the patient's clinical needs. The care manager regularly monitored the patient's clinical status and provided relevant education about depression to patients, families, and physicians. The care managers were trained in interpersonal psychotherapy (IPT) and treated patients who preferred counseling to medications or who did not respond to medications alone. Care managers at each site participated in weekly face-to-face supervision with an academic geriatric psychiatrist and received ongoing supervision in IPT from academic psychologist experts in IPT.

In a comparison of clinical outcomes for patients who were provided with care management versus those who received care as usual, results indicate that the care management group achieved a greater and speedier course of depressive symptom reduction [37]. The pattern was not as robust as in IMPACT for depression response (50% reduction in baseline symptoms as measured by the HAM-D) and depression remission (HAM-D ≤ 7). For all depressed patients (major and minor depression), the intervention patients were more likely than usual care patients to have a response at 4, 8, and 12 months. Remission, however, was significantly more likely only at 4 and 8 months for all depressed patients (32.4% versus 24.8% and 41.1% versus 31.8%) or for just major depression (26.6% versus 15.2% and 36.0% versus 22.5%). A separate substudy comparing clinical outcomes with similar treatment in the specialty mental health sector at one site found that patients in the specialty setting had more severe depression but received more intensive treatment [38].

Re-engineering systems for primary care treatment of depression

In 1995, the John D. and Catherine T. MacArthur Foundation charged leading clinicians and researchers in primary care and mental health to make a national difference in the primary care management of depression. Findings from initial projects [10,39–41] and related first- and second-generation clinical trials spawned a three-component clinical model for primary care depression management and a practice change model to support local adoption of the clinical model [42]. Key elements of the clinical model are: (1) centrally based (rather than on-site) care management providing telephone support for patients and feedback to primary care clinicians; (2) more structured primary care management, including the use of a brief depression severity measure (the PHQ-9); (3) weekly telephone-based psychiatric supervision of care managers; and (4) e-mail or telephone contact by the supervising psychiatrist with primary care clinicians as indicated. The practice change model relies on quality improvement programs existing within each health care organization.

The Re-engineering Systems for Primary Care Treatment of Depression (RESPECT-Depression) project worked with diverse health care organizations to apply its elements in three phases. The first phase pilot tested and refined the models in representative community practices selected by each participating health care organization (HCO). The second phase evaluated the model in a randomized controlled trial conducted in additional practices, seeking to improve depression care. The third phase assessed dissemination of the model to usual care and other additional practices. Because the intervention was applied practice-wide, as with PROSPECT, the practice was the unit of randomization. The local organizational team and research team worked together to build the HCO's capacity to support the clinical and practice change models. The HCO quality improvement program was the locus of practice support in implementing and sustaining the depression care clinical model. The research team led capacity-building efforts with phase-one pilot practices and initially did so in phase two, as well. Each HCO quality improvement program became the central and sustaining source of practice support for most of phase two and for phase three. Throughout this process, primary care practices and clinicians were updated with newsletters, reunion meetings, and academic detailing.

Phase one findings of system uptake and programmatic modifications demonstrated strong clinician participation and excellent short -term clinical response rates [43,44]. Similar to IMPACT and PROSPECT, the RCT results of phase two of RESPECT-Depression demonstrated that intervention patients with major depression or dysthymia achieved significantly greater response rates at 3 (53.0%% versus 34.2%) and 6 months (59.9% versus 46.6%) as well as remission rates at 3 (26.2% versus 16.5%) and 6 months (37.3% versus 26.7%) [45]. The primary research objective of RESPECT-D phase 3 is presently being analyzed to determine how many phase-two

practices maintain systemic changes and whether the changes spread to additional practices beyond those participating in the RCT.

Care management and the role of the mental health specialist

The preceding overview of state-of-the-art efforts to systematically modify the management of depression in primary care practice highlights the diverse factors affecting the success of these efforts. The three trials comparing system change with usual care included different depression diagnoses and used different outcome time points and different depression measures. Nevertheless, the results were all positive, with effect sizes in the small to medium range. Given the small number of studies and the differing design features, a summary effect size is not useful. However, taken together, all four of these large, multisite RCTs provide an evidence base that strongly supports the clinical value of systematic changes in primary care to manage depression.

From the perspective of a mental health specialist seeking to optimize the management of depression medical settings, two factors warrant particular attention as the shift continues from efficacy and effectiveness research to wide spread clinical implementation. These factors are care management and the mental health specialist's relationship to this process.

Care management is an intrinsic element of the chronic care model and is used commonly by primary care practices, with patients who experience high rates of chronic illnesses such as asthma, diabetes, and congestive heart failure. Only recently has the relapsing and recurring clinical course of depression raised consciousness to the need to manage this disorder in a manner akin to that used with other chronic illnesses. More specifically, it must now be acknowledged that even when they desire to do so, primary care physicians may be constrained from performing all of the clinical tasks pertinent to managing a depressive episode. The constraint of insufficient time for needed appointments is particularly critical during the acute phase of depression. The problem of managing depression in primary care practice is complicated further by the fact that depressed patients are at high risk for not adhering to the treatments that primary care physicians prescribe for them.

Given these difficulties, increased attention is being devoted to findings that demonstrate that care management can ensure a treatment plan is being followed, symptoms and side effects are being monitored to determine the need for a modified treatment plan, and patients are being educated about their disease and its treatment, including self-management techniques [46,47]. For depression, these studies reveal a spectrum of care management, varying in intensity and cost. The spectrum ranges from a fixed and limited number of highly structured contacts [21,22] to Master's degree level specialists who provide case management and even acute phase versions of time-limited

psychotherapy [30,48]. Table 2 shows the variability in the management of care of chronic depression in the reviewed third-generation studies.

Care management may be delivered through a central telephone resource serving multiple practices or directly within the practice, using internal or shared personnel. Care management that is limited to a basic level of telephone contact requires less mental health training and can be applied to chronic diseases other than depression. However, it may not achieve the same degree of improvement in clinical outcomes as face-to-face care management with psychotherapy. Conversely, internal and face-to-face care management, even if more effective, is more costly. Relieving internal personnel of their previous responsibilities often proves difficult. Without changes in reimbursement policy, externally funded on-site personnel are more likely to be terminated when a research or demonstration program is completed.

Despite these realities, care management is emerging as a meaningful primary care intervention for depression, given the relative shortage of doctoral level mental health specialists trained to work in medical settings, the higher costs of such personnel, and the absence of a clinical need for every depressed patient to see a mental health specialist. Goldberg and Gournay [49] recommended, therefore, that "link workers" serve as intermediaries between mental health providers and primary care clinicians. The care manager, indeed, performed the linkage function effectively in these third-generation health services primary care depression studies.

The present authors suggest that to provide this link with confidence and safety, care managers require regular and systematic supervision by a mental health specialist. Depending on the complexity of the case mix assigned to the care manager and his or her experience with depression, 10 to 30 cases can be reviewed in an hour of psychiatric supervision. This rate compares quite favorably with the one to four cases possibly seen by a psychiatrist in an hour when providing individual therapy or medication management. The third-generation studies indicate that a significant number of depressed primary care patients experience complex psychosocial problems and can benefit from consultation or co-treatment with a mental health specialist. Although better and speedier outcomes may be achieved with specialty sector treatment, the PRISM-E study demonstrates that particularly older patients are the most reluctant to seek help in the specialty sector. It is significant, therefore, that the IMPACT and PROSPECT studies have found that care managers, under specialist supervision, can provide much of the care recommended by contemporary guidelines for managing depression. When a specialist consultation is needed, it can be completed successfully in the primary care clinic. The combination of the care manager and the supervising mental health specialist, therefore, constitutes a potent enabling force. The resources and back-up they provide permits the primary care clinician to fulfill depression screening recommendations more comfortably [50], formulate depressive diagnoses more aggressively, and manage depressive episodes more effectively.

Assessing and managing suicidality

Considering the care manager's role in assessing and treating depression in the primary care sector, can this person also serve as a resource in managing the suicidal ideation and behaviors presented by a subgroup of depressed ambulatory care patients? The significance of this question is highlighted by a growing awareness that the primary care sector potentially can play a crucial role in resolving the public health crisis of suicide [51,52]. Because approximately 45% of persons who killed themselves had contacted their physicians in the month preceding the life-ending act [53], these health care providers and their staff are possibly well positioned to identify, treat, or refer persons at high risk for self-harm. Given this perspective, do the four RCTs described previously provide data regarding the prevalence of suicidal ideation and its course in primary care facilities to gauge the levels of suicide-related efforts that will be required from primary care physicians and depression care managers?

The proportion of patients who are assigned the diagnosis of major depression or dysthymia and who experience suicidal ideation is not comparable directly across the four RCTs, given their differing criteria for defining thoughts of death and self-harm and procedures for assessing such ideation. The PROSPECT investigators [37] determined that 25% of older patients recruited to their treatment trial scored more than zero on the Scale For Suicidal Ideation. The varying risk levels associated with elevated scores, however, were not specified. The RESPECT [34,45,54] researchers did classify such risk levels in a range from none to mild-moderate to severe and even to critical and those patients who required immediate intervention. With regard to the prevalence of clinically significant suicidal ideation at the higher ends of this severity continuum, the three RCTs derived rates of 10%, 11%, and 14%, respectively.

These closely similar prevalence rates across both mid- and late-life populations indicate that primary care practices should be concerned about the small but highly distressed subgroup of depressed individuals whose suicidal psychopathology requires urgent or emergent psychiatric care. The significance of focusing on this subgroup is highlighted by Bartels and colleagues' [54] finding that older patients who experience suicidal ideation tend to withdraw rather than increase contacts with their physicians and other potential sources of support. At any single point in time, primary care physicians and their collaborating depression care managers typically will be responsible for no more than one or two depressed patients at serious risk for self-harm. Given this distribution, the identification and management of high-risk suicidality is likely feasible in primary care practices that choose to assume this clinical responsibility. The potential value to a practice in doing so is emphasized by the finding of the 2001–2003 National Comorbidity Survey Replication [55] that the most serious cases of suicidality ironically experienced

smaller treatment increases during the 1990s than did less serious cases of such psychopathology.

In addition to clarifying the prevalence of suicidal ideation in primary care practices, do the RCTs reviewed previously explicate the clinical course of such ideation in ambulatory medical settings that use depression care managers? The nature of depression care management with suicidal patients remains to be detailed and cause-effect imputations are premature. It is of interest, nevertheless, that the PROSPECT and IMPACT treatment trials with older primary care patients both found suicidal ideation reduced significantly more frequently in practices offering depression care management than in practices offering the physician's usual care. The PROSPECT investigators [37] found this favorable outcome to pertain at 4 and 8 months post-baseline, whereas the IMPACT investigators [34] found it to persist even during the 12-month follow-up period after the 12-month intervention. The RESPECT study design did not permit the comparison of suicidal ideation's course in the face of depression care management versus usual care. However, 76% of the study's mid-life patients who were classified initially at the intermediate level of suicide risk had low or no suicidal ideation 3 months later. Continued improvement on this measure was evident at 6 months as well [56].

The epidemiologic and evidence-based clinical data generated by the four RCTs conducted within primary care practices lead to two important findings. First, the prevalence of suicidal ideation among depressed mid- and late-life patients at the urgent and emergent severity levels is at a sufficiently low rate as to make its management feasible within practices willing to undertake this clinical responsibility. Second, suicidal ideation at these severity levels responds to treatment, and the depression care manager's contribution, supported by a psychiatrist, results in greater reduction of suicidal ideation than in usual care. This additional evidence supports the clinical and policy value of disseminating such models, especially in light of the latest "black box" warnings on suicidal ideation and newer antidepressants.

Discussion

The sizeable number of primary care practices, clinicians, and patients that have participated in three generations of health services research on the management of depression is impressive. The most recent generation of this research focuses extensively on the elderly, and its findings deserve the attention of geriatric mental health specialists. The study results published to date suggest that these system changes produce better outcomes than usual care for depression in a wide range of patients and health care organizations. The findings, thus, have important implications for clinical practice and challenges for health services policy.

Although three of the studies described in this report focused on older people, the totality of findings from this line of health services research

suggests that usual care for major depression or dysthymia in primary care is no longer acceptable for any age group. Although more intensive and expensive treatment in the mental health specialty setting would conceivably produce superior clinical outcomes, most older and primary care patients are more likely to accept depression treatment when it is integrated within primary care. The consistency of this finding suggests that primary care providers and practice administrators need to examine how best to improve depression management. Depending on the size and resources of a practice, at least some components of the chronic disease model, such as care management, could be implemented. For mental health specialists, these studies emphasize the importance of seeking out and being integrated into primary care consultative and supervisory roles so that they can indirectly but effectively serve a larger number of patients. The present authors would also emphasize that for any system change to be successful, it is vital to have substantial administrative support, strong physician leadership advocating the change, and credible data available for feedback [57,58]. Mental health specialists, thus, should prominently ally themselves with administrators and physician leaders in health care organizations delivering primary care.

Although the preliminary findings of these third-generation clinical trials are encouraging, they contain potentially disturbing trends as well. The relatively low remission rates, even with relatively intensive and closely supervised interventions, are disconcerting. It may be tempting to recommend a national policy, which shifts more depression care to the specialty sector, but there will continue to be an insufficient number of geriatric mental health specialists to meet all clinical needs. Accordingly, it is incumbent on geriatric specialists to lobby government and organizational policy makers to offer fair and reasonable reimbursement for care management services and for the telephone or in-person consultation that mental health professionals provide to care managers and primary care physicians.

From a health services perspective, it is remarkable how far the field of primary care depression treatment has come. Nevertheless, service delivery and knowledge gaps remain to be filled, and advocacy for fiscal and administrative policy changes should be of the highest priority. With respect to future health services research that addresses knowledge gaps, it is of paramount importance that investigators help health care organizations test and find the costs of the various components of the chronic care model as it pertains to depression. Research that replicates findings about the better patient outcomes achieved by altered structures of care is no longer a significant need. Investigators, instead, should now help health care organizations and health plans to identify the chronic disease system components and intensity levels at which they can proceed practically and fiscally with needed change. In this context, structuring the collaborative relationship of depression care managers and mental health specialists is a continuing challenge, as is the mental health specialist's optimal manner of collaborating with primary care physicians. For example, some practices may use their

own employees as care managers and require psychiatric consultation or clinical back up on only certain aspects of their caseload once the care managers are experienced.

With overall remission effect sizes proving to be small to medium in magnitude, cost effectiveness may become a barrier to successful dissemination. Accordingly, at least four approaches, used alone or in combination, are recommended in the next generation of studies. The first approach would be to emphasize stepped care, reserving the more expensive service (care management with weekly mental health supervision) for more complex, severe, or resistant cases of depression [16]. Initially a full model might be applied to all depressed patients while the practice becomes comfortable with a structured, disciplined care process. When the practice is ''prepared'' after a certain number of treated cases, the primary care clinician could more selectively use the costlier full model when patients are identified as nonadherent or treatment resistant. More adherent patients could be taught to pro-actively and systematically self-report progress and side effects. A second approach is to include care management as part of the quality improvement division of larger group practices, in order not to count against the small margin of the individual primary care practice. By maintaining or improving quality indicators such as those of Health Plan Employer Data and Information Set, this budget justification would be reasonable. The third approach would be to combine different chronic diseases. The same care manger can be involved in the process of care for different chronic diseases but supervised by different specialists. This approach could focus alternatively on persons having two separate but interacting chronic diseases, such as diabetes and depression. A fourth approach is to form a partnership with health plans and employers to broaden the scope and thus improve cost effectiveness by documenting the effects of these interventions on work absenteeism and productivity [59–61].

In conclusion, the majority of primary care clinicians accept the responsibility for treating depression across the life span [9,10]. Mental health specialists must respect and foster this responsibility. Primary care clinicians are ready to entertain more organized monitoring, follow-up, and collaboration with mental health specialists, as long as the issues of care complexity, role clarification, and costs can be resolved. Disseminating the concepts and tools of systems of depression management to primary care practices while simultaneously addressing policy implications at the level of payers and regulators holds considerable promise for translating this evidence-based research into improved care for the large numbers of depressed patients in primary care.

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