Believing what we know: Pharmacy provides value

BURNIS D. BRELAND

Am J Health-Syst Pharm. 2007; 64:e18-29

I would like to thank Dr. John R. Reynolds and Mr. William A. Gouveia for their wonderful hospitality and Northeastern University for the opportunity to present the 22nd Annual John W. Webb Lecture. I would also like to acknowledge the presence of Mr. John W. Webb and thank him for his inspiration and leadership in hospital pharmacy practice; I especially thank him for being here today.

I want to share a message of love for pharmacy and call for a renewal of emphasis in advancing our practice roles to better serve our patients. To some of our more experienced leaders and previous Webb lecturers, I may say nothing new, but I am going to remind you of things you already know. To our younger practitioners, residents, and students, I hope to seed a vision for hospital pharmacy practice in the future and encourage a passionate drive toward leadership and management excellence in pharmacy practice. I hope to encourage you to believe what you know and live what you believe.

Health care and the practice of health-system pharmacy have changed significantly over the past 50 years since the comprehensive audit of hospital pharmacy was conducted in 1955 and published in the *Mirror to Hospital Pharmacy* in 1964.[1] That publication and many other landmark events have transitioned much of pharmacy practice from a product-oriented practice to a patient-care-focused practice. Expanded medical knowledge, advances in technological equipment and medical devices, and radically increased communication and information exchange have dramatically affected pharmacy and the health care system. The remarkable advances in development of pharmaceutical products through synthetic design, biological modifiers, immune-system facilitators, and gene therapy have markedly increased the number and diversity of pharmaceutical products available to prevent and treat illnesses.

For centuries pharmacists have been caregivers, assisting those in need by providing patients with formulas, remedies, and therapies to treat disease. These remedies have included medications derived from raw products and those that have been chemically engineered. The patient care role of pharmacists and the amount of time pharmacists have allocated to working directly with the patient have varied over the past 50 years as pharmacists have been consumed with adapting to changes in the availability of commercially prepackaged and ready-to-use medications, including intravenous fluids and sterile injectable pharmaceutical products, unit dose medications, and advanced medication delivery systems. As medical and pharmacy technology have changed, health-system pharmacists' roles have changed. Pharmacists are now faced with diverse roles and widely expanded work functions and responsibilities within hospitals, ambulatory care clinics, long-term-care facilities, and home health programs. With the pharmacist's broad scope of knowledge and skills, the pharmacist is faced with vast opportunities to serve

BURNIS D. BRELAND, M.S., PHARM.D., FASHP, is Director of Pharmacy and Clinical Research, Columbus Regional Healthcare System, The Medical Center, Inc., 710 Center Street, Columbus, GA 31901 (burnis.breland@crhs.net).

Presented in connection with his designation as the 2006 John W. Webb Lecture Award recipient, by the ASHP Section of Pharmacy Practice Managers and the School of Pharmacy, Bouvé College of Health Sciences, Northeastern University, Boston, MA. Dr. Breland delivered his award lecture at the ASHP Conference for Leaders in Health-System Pharmacy and presented a lecture as Visiting Professor in Hospital Pharmacy at the Northeastern University.

DOI 10.2146/ajhp070015e

patients and other health care professionals. Pharmacists in hospitals have more work functions, practice opportunities, and responsibilities than can be accommodated with the traditionally available work force and time constraints.

The pharmacist's transition from a product-focused role to a clinical or patient-focused role was especially evident in the late 1960s and 1970s. The curriculum in pharmacy schools took on a new dimension, moving rapidly to include therapeutics courses which required the lengthening of pharmacy school programs to three professional years and later to four years. The concept of training pharmacists as clinicians with expanded knowledge of pathology, pharmacology, and therapeutics evolved through the 1970s and 1980s, and the doctor of pharmacy program was accepted as the route to accomplish a transition toward equipping pharmacists to practice in the clinical patient care environment.

Practice changes were especially evident after the Hilton Head Conference in 1985. This invitational conference helped catapult hospital pharmacy practice toward a focus on the patient, with the pharmacist as a direct provider of patient care, a clinician at the bedside. The idea of a hospital or clinic pharmacist analyzing a patient's illness, including signs, symptoms, laboratory data, and medication regimens, and then providing valuable information that would be used to improve a patient's care was exciting.

The pharmacist's unique body of knowledge was recognized to be very beneficial in the clinical care of patients. Pharmacists took on various specialty practice roles during the 1980s and 1990s, capitalizing on unique knowledge bases. Practice areas including pharmacokinetics and nutrition support were initially popular, and pharmacists recognized a demand for practitioners with clinical expertise in these areas. Physicians lacked training in pharmacokinetics and parenteral nutrition support and generally lacked interest in spending the time required to deal with these specialties. But clinical involvement in these areas opened the clinical doors, and hospital pharmacists quickly recognized windows of practice opportunity that would lead them to the patient's bedside to practice collaboratively with physicians and nurses. These initial clinical opportunities helped pharmacists move toward greatly expanded future clinical practice roles.

In 1989 and 1990, Hepler and Strand[2,3] published articles on a new philosophy of pharmacy practice that caught the profession by storm. This new philosophy of practice described pharmacists as caregivers focusing on the medication-related needs of individual patients. It created a vision in which pharmacists assumed responsibility for individual patients' total pharmaceutical care needs, not just a single aspect of care, such as providing pharmacokinetic recommendations for one or two medications and ignoring the many other facets of a patient's medication-related needs. With this philosophy, pharmacists accepted responsibility for drug therapy outcomes. In March 1990, a Special Feature section of *AJHP* was dedicated to this new philosophy of practice called pharmaceutical care.

In a 1989 editorial published in *AJHP*, Zellmer[4] challenged pharmacists not to be subservient to physicians and the pharmaceutical industry but to accept the mandate of society to be patient advocates and optimize the effectiveness and safety of patients' drug therapy. The pharmaceutical care philosophy of practice gave the pharmacy profession a common vision and purpose that pharmacists could embrace, regardless of their practice site. The vision was clear, but the mechanism to achieve that vision was not. Phar-

John W. Webb Lecture Award

The John W. Webb Lecture Award recognizes a hospital or health-system pharmacy practitioner or educator who has distinguished herself or himself through extraordinary dedication to fostering excellence in pharmacy management.

This annual award was first established as the John W. Webb Visiting Professorship in Hospital Pharmacy by the Northeastern University College of Pharmacy and Allied Health Professions, Boston, Massachusetts, in 1985. In 2006, a memorandum of understanding between ASHP and Northeastern University transferred responsibility for administration of the award to ASHP. Beginning this year, the recipient delivered the award lecture at the ASHP Conference for Leaders in Health-System Pharmacy and presented a lecture as Visiting Professor in Hospital Pharmacy at the Northeastern University. Beginning with the 2007 award recipient, the selection process will be conducted by the ASHP Section of Pharmacy Practice Managers.

Past Recipients

2006	Burnis D. Breland	1995	Rita Shane
2005	David Kvancz	1994	Richard deLeon
2004	William A. Zellmer	1993	Herman L. Lazarus
2003	Karol G. Wollenburg	1992	Bernard Mehl
2002	Harold Kornfuhrer	1991	Sara J. White
2001	Roger W. Anderson	1990	David A. Zilz
2000	Paul W. Abramowitz	1989	William A. Gouveia
1999	Harold N. Godwin	1988	Joseph E. Smith
1998	Bruce E. Scott	1987	William E. Smith
1997	Max D. Ray	1986	Paul G. Pierpaoli
1996	Billy W. Woodward	1985	Robert B. Williams

macy struggled to understand how the philosophy could be operationally transformed into reality.

In 1993, ASHP convened an invitational conference in San Antonio to identify the barriers that inhibited the implementation of pharmaceutical care in health systems.[5] The philosophy of practice had been adopted by the professional pharmacy organizations, but it was evident that the profession was in its infancy when it came to implementing pharmaceutical care. Speakers at the San Antonio conference, including Linda Strand and Max Ray, challenged pharmacy practitioners to identify mechanisms and overcome barriers to implement the concept of pharmaceutical care. It was the work of the participants at this conference to determine why the profession had not made more progress in implementing pharmaceutical care practice models. The participants concluded that a lack of pharmacists' time, a lack of human resources, inadequate clinical training, liability fears of pharmacists, and inadequate pharmacy leadership were significant factors delaying the implementation of pharmaceutical care. Pharmacists were struggling to identify and implement practice models.

A lack of effective pharmacy leadership was recognized as one of the major reasons for the delay in implementing pharmaceutical care practice models. Pharmacy directors were perceived to be reluctant to implement new practice models because they had an inadequate understanding of the futuristic practice concepts, a lack of global vision, an inability to obtain the necessary number of staff members (pharmacists and support staff), and a lack of commitment to this new philosophy of practice. Although acceptance by other disciplines was another concern identified, the primary factors inhibiting the progress of the profession were felt to be factors under the control of the profession itself. It was clear, however, that much work had to be done before the profession could accomplish its goal of implementing pharmaceutical care. Since the San Antonio conference, pharmacy has worked for over a decade trying to develop and implement practice models to accommodate the pharmaceutical care philosophy of practice. Despite ASHP funding many conferences in the late 1990s to promote the implementation of pharmaceutical care and the publishing of untold numbers of articles and presentations on the subject, we are still not where we need to be.[6] We have much more work to do.

Health-system challenges

Health-system pharmacy managers are faced with many challenges that affect their ability to develop patient-focused practice models. Some of these challenges include staffing, the cost of pharmaceuticals, clinical quality improvement, meeting regulatory and accreditation standards, and medication safety.

Medication safety. In 1999, the Institute of Medicine (IOM) released a report citing the dangers of medical errors and the large number of injuries and deaths caused each year by medical errors, especially medication errors.[7] After the report was published, institutions began to more rapidly implement technologies, including automated dispensing systems, enhanced pharmacy computer systems, robotic dispensing systems, bedside point-of-care medication administration systems, and computerized prescriber-order-entry systems in an effort to reduce medication errors. The IOM report created a wave of momentum that enabled pharmacies to purchase pharmacy technology that would not have been possible otherwise. Institutions rushed to install and implement technologies that would make the medication process safer.

Since 1999, the mandate from public advocacy groups, quality organizations, government agencies, and the health care system has been to improve the safety of the medication-use process. Medication safety has become the primary focus of others for pharmacy. Health-system pharmacy has been consumed with technology changes and resultant process changes to address medication safety. While efforts to improve medication delivery processes have been productive, the time spent implementing these changes has, in many ways, diverted efforts away from strategically planning the evolution of pharmacy practice. The IOM report gave pharmacy a significant boost in technology acquisition, but the time required to manage these new systems has further delayed the implementation of effective, patient-focused pharmacy practice models in health systems.

Implementation of automated pharmacy systems was expected to free up pharmacists' time and allow them to concentrate on clinical functions, improving the safety of the medication-use process and patient care outcomes through the optimization of drug therapy. However, as the new pharmacy technology systems were implemented, the drug distribution systems were dramatically changed. As old problems were solved, new problems were created. The automation intended to improve drug distribution systems in many cases significantly changed the systems themselves, requiring pharmacists to adjust to these new systems and diverting their efforts away from patient-focused care. For example, some traditional unit dose cart-exchange systems were eliminated and replaced by automated dispensing cabinets or modified using robotic dispensing. The new systems changed medication distribution processes, and thus pharmacist practice roles were also changed.

Implementation of bedside medication verification systems using barcode technology has been a major focus of many hospitals over the past several years. Since many medication

errors are the result of failures in the medication administration process, the bedside verification process has been targeted as the system with the most significant cost benefits. The bar-coding requirements for individual dosage forms have led to significant changes in product packaging. The limited number of medications containing bar codes at the unit-of-use level and the lack of standardization in bar codes and bar-code readers have created many challenges for pharmacy. Health-system pharmacists continue to struggle to meet their medication packaging needs. Unfortunately, the pharmaceutical industry has been slow to implement readable bar codes on unit-of-use packaging. It is also unfortunate that many companies do not offer products in unit dose packaging, and some have even discontinued products formerly supplied in unit dose packages.

Clearly, as pharmacy technology has evolved, pharmacists' roles and the support roles of pharmacy technicians have dramatically changed. However, automation has not brought the dramatic reductions in pharmacy labor requirements that were hoped for. The changes have merely altered the functions dispensing pharmacists and technicians perform. Technicians who once focused on manually filling cassettes may now be assigned to package products for robots, fill automated dispensing cabinets, spend more time on medication-order entry, solve problems related to automated system issues, or perform other tasks that assist pharmacists in meeting the needs of patients and the institution.

Pharmacy automation has rapidly changed hospitals' drug distribution systems and many pharmacists' dispensing roles, but it has not revolutionized pharmacists' practice at the bedside. It has not provided the time and opportunity needed to dramatically restructure pharmacy practice models to more fully meet all patients' drug-related needs. It has not facilitated the cultural shift that is needed to move the profession toward pharmaceutical care.[8] In fact, the infatuation with technology systems has served as a distraction to the shift from system-based pharmacy services to the pharmaceutical care of individual patients. The challenge still exists to develop pharmacy practice models (using automation and technology effectively) that provide optimum value to the patient by optimizing clinical care and medication effectiveness while maximizing medication safety.

Staffing. The pharmacist shortage has plagued pharmacy over the past two decades, and this factor may have been one of the leading causes for delays in the implementation of pharmaceutical care. Without pharmacists, clinical programs cannot be built or expanded, and labor costs rise as demand exceeds supply. With rising labor costs, justification of new pharmacist positions becomes more difficult. Administrators faced with spiraling labor and supply costs and reduced reimbursement may decide to pay what it takes to get the pharmacist but reduce full-time-equivalent staff positions to a level that maintains labor costs within budget.

Costs. Drug costs are usually seen as a pharmacy director's biggest problem. Unfortunately, drug costs are most often viewed as a pharmacy problem rather than an institution problem or opportunity. Financial officers do not usually see drug therapy as an investment to get the patient well and out of the hospital sooner but as an expense that grows the longer the patient is hospitalized. One of the greatest challenges pharmacy managers face is defending pharmacy budgets. Increasing labor costs due to increasing compensation rates, the need for expanded staff positions, and drug cost inflation rates at double-digit levels have made managing the pharmacy within budget limitations very difficult.

Performance improvement. The pharmacy manager is faced with many other challenges including serving as a leader within the institution in drug therapy management. Development of clinical protocols and pathways to improve quality through standardization of processes has become a major focus. The belief is that by reducing variation in processes, clinical outcomes will be improved and the cost of care will be reduced. Unfortunately, it is the cost of care that is most likely driving the standardization process rather than the potential for advancing the quality of care. The application of scientific evidence to define processes, select drug therapy regimens, and define treatment parameters has become the pharmacist's responsibility in improving quality and reducing costs.

With these and other major issues facing health-system pharmacy managers, it is understandable why there have been delays in implementing practice model changes.

Management excellence

Excellence in pharmacy management—that is what this presentation is about. Management excellence in health-system pharmacy practice is about understanding the pharmacy business within the global health care environment, especially the acute care hospital environment. It is about the never-ending learning of a changing body of pharmaceutical, medical, and business knowledge. It is about perseverance, passion, and believing what you know. Believing what you know—we will come back to that.

Management excellence is learning how to adapt to the rapid changes required in pharmacy practice while providing a vision and leading a group of professionals and non-professionals. It is about meeting patients' needs, organizational needs, and the needs of other professionals. It is about advancing the profession

through the building of a practice model that enables pharmacists to provide safe, effective, and efficient drug distribution systems. It is about assuming responsibility for drug therapy outcomes and meeting the wishes and expectations of the patient. It is about providing optimum clinical value to the patient and economic value to the institution. Pharmacy must bring recognizable, documentable value to the patient and the institution. How can we do it?

Practice models

Pharmacists are valuable to patients. The pharmacist is, or should be, the patient's personal drug therapy advocate, ensuring medication safety and optimizing drug therapy. Pharmacists bring value to the institution through the provision of pharmacy services and pharmaceutical care and efficient financial management of scarce resources.

A major challenge for the pharmacy manager is to develop a practice model with a safe and efficient drug distribution system in which pharmacists have the opportunity to fully demonstrate their abilities. Pharmacists need the time and opportunity to practice their clinical skills and apply their unique knowledge base, where other practitioners accept the pharmacist as a direct caregiver, where pharmacists serve as patients' drug therapy advocates, and where pharmacists do not shy away from assuming responsibility for drug therapy outcomes.

The value of pharmacy cannot be recognized unless a practice model is established that provides hospital and health-system pharmacists with the opportunity to practice contemporary pharmacy practice in their respective institutions. Pharmacists' practice roles must provide traditional core pharmacy services, including drug selection, drug purchasing, drug storage, drug compounding, drug dispensing, and patient monitoring; however, the practice model of the future must allow pharmacists the time, orientation, authority, and responsibility needed to provide clinical, patient-specific care functions.

The pharmacy director must possess a vision of a practice model for the future that will fit the specific institution. The practice model must be based on the types of patients served by the institution, the clinical needs of the patients, the needs of other health care providers, the availability of trained pharmacists, and the willingness of the institution to support the practice model. The practice model should incorporate contemporary pharmacy practice standards and promote advanced pharmacy practice roles.

Education, training, experience, and awareness of practice standards and practice trends help create the practice model vision. Having broad practice experience, including clinical practice experience, helps create a vision that is encompassing, providing an understanding that better enables the individual to address the various practice functions that pharmacy must perform, should perform, or might better perform. Providing a pharmacy service and reaching a level of practice excellence in one specific patient care function or in one specific area may be wonderful, but, if reaching excellence in one area comes at the expense of not being able to provide a well-rounded service that meets the needs of all patients, the opportunity to best serve the institution's patients' needs may be missed. Our practice models need to be well-rounded, providing the core pharmacy functions and the patient-specific clinical functions that pharmacists are expertly qualified to perform. Providing the greatest value to the patient should be the mission of the pharmacist. How to build the practice structure or model to deliver this value is the challenge facing pharmacy leaders. The goal is to provide optimum value through practice excellence.

The vision of the practice model, the mission of the department, and the goals must be shared with other members of the pharmacy department. The vision must also be understood and embraced—the staff must understand and believe in the vision in order to support the vision.

The pharmacy department needs to be united as a pharmacy family to achieve its greatest potential. There must be an effective departmental structure to manage the department, but there also must be leaders within the staff to guide, encourage, support, and nurture others. The director must manage, the director must lead, and the director must create the environment that fosters leadership by others. Creating and sharing the vision are only part of the job, but they are critical to achieving excellence.

Gaining the resources is the next critical component. Trained staff, adequate facilities, appropriate fixtures, and complementary equipment, including information systems and supplies, must be justified and put into place to support the practice model. It is important that all the components be obtained and put together to provide the infrastructure needed to support the practice model. I see the director as being at the bottom of an inverted pyramid. The director must provide the resources needed to support the staff. The staff must be fed with opportunity, information, support, optimism, and passion. The department is only as good as the people, and the people need to believe in themselves. They need to know that they make a difference. They need to see the effect that they are having on patients' lives, and they need to be recognized for the accomplishments of the pharmacy family. Management excellence involves supporting the pharmacy family with resources so that the frontline staff can do their work, providing value to patients and their loved ones.

What is a practice model? A practice model is the operational

structure that defines how and where pharmacists practice, including the type of drug distribution system used, the layout and design of the department, how pharmacists spend their time, practice functions, and practice priorities. The practice model is probably the most important factor determining the role and effectiveness of the pharmacy department. It sets the stage and defines the roles.

The practice model should be specifically described, understood, visualized, and emphasized to pharmacy staff and others within the organization. The staff must understand how the structure contributes to fulfilling the mission of the department. Staff members must understand their individual roles and how each member of the pharmacy family is valuable and serves an important role. The family must work as a team. Members must value the role filled by each other, and they must at all times guard against divisions within the team, which may lead to "us-versus-them" attitudes. Management excellence is helping everyone feel appreciated and that they contribute value to the patient and institution.

Pharmacy staff members need to have the opportunity to change practice roles within the department, gain new skills, and be multifunctional to meet the changing needs of the department and the institution. Giving pharmacists this ability to practice in different areas can help pharmacists develop into more well-rounded practitioners and assist in preventing burnout. Management excellence ensures that staff members are in place to provide uninterrupted services, that they are available in sufficient quantity to handle the workload, and that the staffing and workload are matched appropriately. This requires having competent pharmacists with advanced practice skills and the confidence to practice in different areas, including highly specialized areas, such as neonatal critical care, adult critical care, oncology, and other areas requiring unique practice skills. To provide consistent services, there must be enough pharmacist "generalists" to meet the pharmaceutical care needs of diverse patient populations. Generalists are pharmacists with broad practice skills who can care for patients of all ages with diverse illnesses.

The practice model describes whether pharmacists practice in a decentralized or centralized arrangement. It determines whether pharmacists are based in patient care areas, satellites, the central pharmacy, clinics, or other practice settings. The model determines which pharmacists perform medication-order review, compounding and dispensing functions, and clinical functions. Clinical functions may include drug therapy consultations, medication therapy management, the provision of drug information, patient counseling, and addressing individual patients' drug-therapy-related problems.[9]

Performing these clinical functions may be common in many hospitals. Practice roles have expanded over the past decade, and more pharmacists than ever before are now working in hospitals and health systems performing traditional pharmacist dispensing roles and advanced clinical practice roles. Pharmacists' practice responsibilities have greatly expanded in the provision of patient care and drug therapy management. Pharmacist specialists are now managing nutrition support services, infectious disease services, pharmacokinetic services, anticoagulant services, pharmacotherapy consultation services, clinical research programs, and outpatient pharmacy clinics. Pharmacy has more opportunities to affect patient care than pharmacists have time to provide patient care or pharmacy services.

With so many demands on pharmacists, it is very important that seven basic principles be kept in mind when designing the hospital pharmacy practice model.

1. Each patient deserves to have a pharmacist.
2. Patients should be provided consistent care by the same pharmacist or by another pharmacist who is knowledgeable of the patient's case and his or her care needs.
3. All patient care areas of the hospital or health system should be served by a pharmacist who can oversee patients' drug therapy at all hours of the day, with staffing adequate to meet patients' needs.
4. Pharmacists must strive to recognize the pharmaceutical care needs of patients, and pharmacists must prioritize their work to meet those needs based on urgency and value to the patient.
5. Pharmacists cannot spend an inordinate amount of time performing functions they enjoy more and neglect other work functions that are valuable to the patient.
6. Pharmacists' schedules should be arranged to allow pharmacists to consistently work in specific practice areas to advance their knowledge and skills in those areas.
7. The pharmacist is first responsible to the patient.

Keeping these basic principles in mind when developing and staffing the practice model will help ensure that pharmacists' efforts are focused on meeting patients' needs and providing consistent value to the patient and the institution.

After spending years building a pharmacy program based on the pharmaceutical care philosophy of practice, after working to establish collaborative practice arrangements, and after obtaining highly trained pharmacist practitioners capable of providing the absolute highest quality of pharmaceutical care, the reality hits that a demand for services has been created that exceeds the ability of the pharmacy department to meet. When pharmacists establish their credibility and demonstrate their competence, physicians gain confi-

dence in the ability of pharmacists to manage their patients' drug therapy. The demand for pharmacists' clinical skills can become so great that pharmacists do not have time to perform other basic functions, including medication-order review, order entry or order confirmation, and confirmation that patients are receiving appropriate medication therapy.

The practice model must be structured in such a way that the basic pharmacy services are provided in a consistently high-quality manner. Basic pharmacy services, including the dispensing of medications, are still core functions of a pharmacy department. Providing high-quality clinical pharmacy services is for naught if the basic pharmacy services are neglected. The pharmacy department must always provide basic services, which include providing the right medication to the right patient at the right time in the right strength and dosage form. They must be performed correctly and in a timely manner. If the pharmacy cannot provide quality basic pharmacy services, the institution will lose faith in the pharmacy, regardless of how competent specific clinical specialists may be. Management excellence is never forgetting the basics—never forgetting the importance of providing quality core pharmacy services. Failure to maintain quality core pharmacy services may result in the loss of resources needed to provide advanced clinical pharmacy services. The pharmacy family must recognize the importance of supporting all elements of the pharmacy program.

Is the practice model employed consistent with the philosophy of providing total pharmaceutical care? Is there a strategic plan to design a practice model while recognizing the importance of seizing windows of opportunity along the way? Is the practice model structured to provide comprehensive pharmaceutical care to all patients of the institution?

Pharmacists practice most effectively when they are working directly with the patient at the bedside with direct patient contact. They are most able to influence drug therapy planning when they are involved in patient assessment. They are most able to determine patients' total pharmaceutical care needs when they fully know the patient and his or her medical problems and are fully engaged in collaborative practice. Physicians, nurses, and other caregivers respect pharmacists most when pharmacists share the responsibilities for assessment, planning, monitoring, and patient outcomes. Pharmacists need to practice as close to the patient as possible.

The placement of pharmacy satellites in patient care areas was, and still is, a very effective mechanism to make pharmaceuticals and pharmacists more readily available to patients and other health care professionals. However, the work-force requirements are greater than with a central pharmacy dispensing system, and, more importantly, like the central pharmacy structure, at least one pharmacist has to stay with the satellite to provide dispensing services. Pharmacists need to be mobile; pharmacists need to be in the patient care area when therapy decisions are being made. Pharmacists need to be highly accessible and highly visible in order to be prospectively involved in therapy planning and decision-making.

The practice model that has worked well in my acute care community hospital is one that places pharmacists in all patient care areas of the hospital based from modified satellites. These satellites are actually offices with pharmacy references and computer resources. The satellites (except for surgery) have no drugs but serve as home bases from which pharmacists, technicians, residents, and students may work. The pharmacists use laptop computers, text pagers, and cell phones so that they can easily communicate quickly and efficiently as they move from patient to patient and unit to unit. Most pharmacists practice in the patient care areas, but a highly specialized group of pharmacists and technical staff members practice in the central pharmacy to compound and dispense medications.

Unit-based pharmacists and technicians are responsible for the frontline pharmacist care of patients from 7 a.m. until 11 p.m. daily, seven days per week. This includes medical–surgical units; adult, pediatric, and neonatal critical care areas; labor and delivery; surgery; the emergency department; and the outpatient oncology center. Basing the pharmacist, with support staff, in the patient care areas makes the patient, patient information, and other practitioners more accessible to the pharmacists, and the pharmacists more accessible to the patient and other professionals. Therefore, from 7 a.m. until 11 p.m. daily, medication orders are reviewed and entered into the pharmacy computer system by decentralized pharmacy staff. From 11 p.m. until 7 a.m., the pharmacists and technicians in the central pharmacy provide all pharmacy services. Pharmacists in the central pharmacy are specialized in medication dispensing and distribution, but they also perform many drug therapy management functions during the night shift. Dispensing is performed by central pharmacy staff using the pharmacy robot and automated dispensing cabinets.

Pharmacists practicing in patient care areas complemented by other central-pharmacy-based staff can provide valuable patient care services. This practice model also affords pharmacy staff the opportunity to provide pharmacy services and pharmacist care at a level consistent with the philosophy of pharmaceutical care. However, the demand for pharmacists' services can be so great with this practice model that pharmacists

are required to prioritize work functions. In order to maintain consistency in practice and to provide guidance to pharmacist practitioners on prioritizing pharmacists' activities, we developed a policy on pharmaceutical care. It provides guidance to staff on pharmacists' work functions and prioritizes patient care responsibilities. For example, when time does not allow the pharmacist to perform all requests and tasks identified by the pharmacist and additional pharmacists are not available to offer support, emergency or urgent patient services take priority over nonemergency services, such as inservice educational programs, medication-use evaluations, and protocol development. The priority list should be developed by the pharmacy department and reviewed and revised as staffing and technology systems change.

We have used this practice model for over 18 years and found it to be very effective. The major drawback is the requirement for adequate staffing. Pharmacists and highly trained technicians are necessary to make the model work effectively. The national pharmacist shortage, which is worse in certain rural regions of the United States, has proven to be a major barrier to efficient, consistent operations. To provide collaborative drug therapy and practice pharmacy at an advanced level, competent, highly trained pharmacists and technicians are required. Lack of competent, trained staff can be a major deterrent to building an effective pharmacy program.

Although this practice model was implemented in our institution before the introduction of the pharmaceutical care philosophy of practice, this philosophy closely described our vision for pharmacy practice in our institution. It gave us the terminology to use in describing our practice model and helped us explain the concepts to our own staff and to new practitioners joining the staff.

The pharmacy manager needs to clearly define the practice model, and it is important to continually redefine the model as new staff members join the department and as staff members tend to deviate over time from the plumb line. The director must show consistency, holding the course and focusing on the goals created by the vision. There is also the tendency to give in, take the easier course, make exceptions, compromise your standards, and agree to the wishes of staff members who want to take a different course and may not clearly understand or support the vision. Management excellence is being able to hold the course by discerning right from wrong and knowing which path is best to follow. The key to discerning the right course is to always consider what is best for the patient. Remembering the patient as our first priority will always keep our practice path true to the plumb line.

Advanced practice models

When the pharmacy practice model has been established and pharmacists are practicing in the desired roles, what then? Pharmacists may be performing requested services, such as antibiotic or anticoagulant dosing, but providing these services requires a lot of time. Since the pharmacist: patient ratio is usually too low and pharmacist time is insufficient to handle the workload, how should pharmacists allocate time? The clinical pharmacist working in a medical–surgical unit may be responsible for 35–60 patients or more.

The pharmacist's work functions may include patient assessment, medication-order review, order entry, order confirmation, pharmacotherapy recommendations in response to consultations, management of drug therapy as requested for specific patients, monitoring of all measured serum drug levels, monitoring for drug-related problems, and problem resolution (e.g., drug interactions, incompatibilities, adverse reactions, missing medications). These routine daily functions are in addition to the other tasks that pharmacists may perform, such as participating in cardiopulmonary events, counseling patients, documenting patient interventions, orienting and training new staff, and teaching students and residents. With all these responsibilities, when do pharmacists have time to meet the patient? It is obvious that pharmacists who have been given the privilege to practice at this level are overwhelmed with opportunity. There is more to do than can be done. Each hour, pharmacists decide what gets done and what goes undone. Is it more important to provide drug therapy consultations for a few patients or actively review and monitor drug-therapy-related problems in more, most, or all patients?

The answers to what services or patient care functions are most important for pharmacists to perform may be difficult to find. Pharmacists must prioritize care functions based on professional judgment; unfortunately, pharmacists may not be aware of all the patient's pharmaceutical care needs when making decisions. If pharmacists are focused only on medication-order review, order entry, or answering requests for consultations, the pharmacists may miss some important patient care functions. The real question is, what is most valuable to the patient?

Pharmacy needs to agree on what the advanced practice model of the future for hospital pharmacy should look like. Research into advanced practice models is needed to assist hospital pharmacists in designing practice models that fully utilize the knowledge, skills, and abilities of the pharmacist and provide the greatest value to the patient and the institution. We need studies that will tell us where unit-based pharmacists should focus their time and how the many pharmacist care functions should be prioritized and carried out. It is unlikely that the supply of pharmacists will be adequate to meet all the phar-

maceutical care needs of all patients. If the supply is adequate, it is unlikely that the institution will be willing to incur the labor costs that would be required. Therefore, it is important that the pharmacy profession defines the practice model of the future.

We have worked for almost two decades to build our current practice models based on the pharmaceutical care philosophy of practice. We have worked for over three decades to gain the collaborative practice opportunities and clinical practice rights that we now possess. The philosophy of pharmacy practice known as pharmaceutical care helped establish a vision of pharmacy practice. It is now time to rethink the philosophy and recognize where we are in terms of patient needs, practice ability, work force, and organizational and national health care priorities. If we have in place a strong patient-focused practice model and a relatively abundant work force but still cannot meet the numerous practice demands, where do we go from here? Our pharmacists may be very busy providing patient care services, but are they the services that deliver the most value to the patient?

Pharmacists become frustrated very quickly when the opportunity to practice at an advanced level is realized, but they spend long hours (beyond their assigned work time) trying to meet the most critical patient care needs while leaving many important recognized needs unmet. Management excellence is more than providing the opportunity; we must also manage the process. We must understand what pharmacist functions are most important to the patient and how the pharmacist can deliver the greatest value. We need to strategically design practice models based on accumulated evidence that will enable pharmacy to deliver the greatest value to the patient.

Practice standards

Pharmacy practice standards should provide guidance to hospital pharmacy directors. They should tell us how to design the hospital pharmacy program and the functions that should be performed. We need practice standards that offer guidance for establishing practice models. ASHP has provided a valuable service to hospital and health-system pharmacists over the years by establishing and maintaining practice standards. Unfortunately, hospital pharmacists are not thoroughly aware of ASHP's practice standards and, consequently, do not always apply these standards.

Do the standards reflect contemporary pharmacy practice? Although there is a process in place to periodically review, update, and maintain ASHP's practice standards, more effort should be directed at ensuring the adequacy, appropriateness, and up-to-date status of the standards. The completeness of our ASHP practice standards needs to be evaluated, and I believe that an ASHP commission should be established with the purpose of continually reviewing the standards, their completeness, their pertinence, their correctness, and their applicability to contemporary pharmacy practice.

Management excellence is easier to achieve when we have the right tools in place. ASHP needs to work toward more fully equipping our hospital pharmacists with current, relevant, practical practice standards that guide our steps toward providing high-quality pharmacy services and optimum pharmacist care to individual patients.

Unfortunately, hospital pharmacy practice is currently driven more by the standards of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) than by our own professional practice standards. JCAHO sets priorities for health-system pharmacists by mandating accreditation standards, which consequently dictate procedures involved in the medication-use process. Since medical safety, and specifically medication safety, is currently a major focus of JCAHO, the accreditation survey is heavily focused on the medication-management process within the hospital (i.e., the selection and procurement, storage, ordering and transcribing, preparing and dispensing, administration, and monitoring of medications).[10] The intent of the JCAHO standards and the National Patient Safety Goals is to drive quality and safety in hospitals and health systems. However, the pharmacy department spends more time focusing on JCAHO priorities than institution-specific patient priorities. To measure the degree to which the institution is meeting its standards, JCAHO focuses on specific indicators including handwashing, medication reconciliation, and core measures, such as time to administration of an antibiotic for patients admitted with community-acquired pneumonia. The institution may become so focused on addressing the current hot issues of JCAHO that the institution loses sight of the importance of overall quality within the institution in meeting patients' needs.

The pharmacy profession needs to lead the way in advocating medication safety and effective medication management within hospitals and health systems. JCAHO should be able to follow the lead of ASHP and require adherence to practice standards identified by the profession. However, pharmacy is not being proactive enough; JCAHO is being proactive. Therefore, pharmacy finds itself being reactive to JCAHO's "hot-button" issues of the year, through the standards revisions and interpretations, the latest sentinel event alert, or the newest National Patient Safety Goal. ASHP must take a leading role in defining medication-management practice standards within hospitals and health systems. ASHP needs to work more closely with JCAHO to affect the content of the medication-management standards and their interpretations in order to improve the

quality of pharmacy practice and the usefulness of the survey process.

The profession, through professional associations like ASHP, should be responsible for providing relevant practice standards by which accrediting organizations may effectively evaluate the pharmacy department and overall institution's performance related to medication management. I propose that ASHP offer to write the medication-management standards and the standards' interpretations for JCAHO. ASHP needs to take a more active role in the development of medication-management standards, since pharmacists spend more time addressing JCAHO practice standards than ASHP's "best practice" standards. Until pharmacy exhibits more initiative to set quality practice standards related to medication management that can be accurately and effectively used to measure departmental and institution performance, we will have to accept the initiatives set by JCAHO. It is difficult to ensure management excellence related to survey standards when the profession has little to do with standards development.

Education

Availability of a trained work force is essential to developing an effective pharmacy practice model. The schools of pharmacy have made significant progress in changing the curriculum to meet the educational needs of today's pharmacists. The graduates have good clinical knowledge bases, and residencies advance this knowledge. Residencies help pharmacists develop the practice skills needed to work in the advanced practice models.

Clinical clerkships provide excellent learning opportunities for pharmacy students, but it is important that pharmacy students be taught under a slightly different model than medical students. Placing pharmacy students on patient rounds on a medicine service in a university teaching hospital with physicians but without a pharmacist practitioner as a role model may misdirect the pharmacy student toward diagnosis and disease management rather than focusing on the patient and medication management. It may also give the student the perspective that pharmacy practice primarily consists of attending rounds with a team and planning and monitoring drug therapy. Pharmacy students need practicing pharmacists as role models, and students need to see pharmacy practice models in hospitals that are meeting the pharmaceutical care needs of patients. Students need to visualize the importance of all elements of the medication-management process, and they need to be given practice responsibilities during their clinical clerkship training programs.

Pharmacy residency programs are essential for training and preparing new pharmacy graduates to practice in the advanced practice roles needed in today's hospital pharmacy practice models. Today, residents who successfully complete a well-rounded pharmacy practice residency are able to start practice in advanced practice models and perform competently and with confidence. These practitioners are highly sought after and somewhat difficult to find because of the high demand. In order to ensure an adequate supply of trained pharmacist clinicians with the long-standing pharmacist shortage, it is best to train your own future practitioners. Conducting a quality residency program requires a strong commitment from all the pharmacy staff. There are significant financial costs required to offer a residency program, but the residency program is one of the best investments a hospital or health system can make toward ensuring practitioners for the future.

Regardless of how excellent the manager is, the pharmacy program will never reach its full potential without knowledgeable trained staff in adequate numbers. Management excellence involves developing multiple strategies to ensure availability of a trained work force, and succession planning is an important part of preparing for the future.

Leadership

What is leadership? A fairly comprehensive definition offered by experts is "the process of influencing an organized group toward accomplishing its goals."[11] Both strong leadership and competent management are essential for developing an effective pharmacy practice model. One is not sufficient without the other. The pharmacy director should lead the way, but finding all the answers necessary to implement and maintain the right practice model and make the system work must be a shared responsibility. The department director needs to take the lead role in defining a vision that others may share, but others must also demonstrate leadership to make the practice model a reality. Building a consensus on practice roles based on common values is also critical. The pharmacy family needs to agree on principles, ideals, and commitment to the practice model.

Demonstrating management excellence in hospital and health-system pharmacy involves performing many key tasks well. Management consists of planning, organizing, implementing, and controlling. The following list is somewhat of an extrapolation of these basic management functions to hospital pharmacy practice management:

1. Understand the environment,
2. Develop and share a vision,
3. Recognize needs and opportunities,
4. Create opportunities and strategies,
5. Justify and gather resources,
6. Take advantage of opportunities,
7. Equip the staff,
8. Provide the framework (practice model),
9. Lead, direct, and show the way,

10. Nurture and coach,
11. Mentor and train,
12. Assess the processes and outcomes,
13. Adapt to change,
14. Maintain flexibility, and
15. Assess and understand the needs.

The pharmacy manager must understand the environment, from the local institution level to the state and national levels. This includes understanding national health issues such as quality initiatives and reimbursement practices. It involves gaining awareness of the needs of the institution related to pharmacy, the politics within the organization, and the key leaders and stakeholders within the institution. Having an understanding of pharmacy systems, practice models, and practice standards helps create the vision for the scope of services and establishment of the practice model.

Recognizing the patient care and medical staff needs and seizing opportunities to meet those needs create opportunities for the department. Acting on these unexpected opportunities may definitely alter the initially envisioned practice model, but it can also provide the opportunity to expand the pharmacy program or take it to a new level of practice.

Justifying new programs or expanding practice roles is essential for obtaining the resources, especially staff, to meet the new practice requirements. Ensuring that staff are trained to meet the new roles and that work schedules are appropriate to meet the workload requirements consistently, seven days a week, is essential. Offering a service or providing a patient care function inconsistently does not promote confidence in the pharmacy.

Determining the practice model to include where and how staff will be allocated and their practice roles and responsibilities comprises the skeleton of the pharmacy department. Pharmacy managers typically do not put enough emphasis on strategically defining the practice model and helping staff understand their roles and relationships with other pharmacy staff members. Nurturing and mentoring are crucial to staff development, and ongoing planning to fill vacancies is essential, especially during a pharmacist shortage.

It is important to assess the quality of the pharmacy program, the level and completeness of services offered, and the extent to which the pharmaceutical care needs of patients are being met. The manager must continually evaluate the quality and extent of pharmacy services and pharmacists' functions to ensure that patients' needs are being met and that value is being delivered to the patient and recognized by the institution.

Flexibility to change is important, as medical knowledge and technology are continually changing. Change is inevitable, and our ability to seize opportunities created by change to improve the pharmacy program is another example of practice excellence. Always look for the opportunity that adversity and crisis may create. Management excellence is turning tragedy into opportunity.

Value

What is the value that health-system pharmacy affords to the patient, to the institution, and to society? Do practice models that give pharmacists the opportunity to provide direct patient care and work collaboratively with other caregivers offer more total value than traditional practice models, which are primarily focused on drug distribution? The pharmacy and medical literature have provided convincing evidence that clinical patient care functions performed by health-system pharmacists provide value.[12] These studies confirm what practicing pharmacists know: pharmacists improve drug therapy outcomes by optimizing medication therapy and increasing patient safety.

The current opportunity pharmacy has to increase its role in patient care has been emphasized by pharmacy leaders.[13] The emphasis on patient safety has created new opportunities and demands for pharmacists' skills. However, the concepts of clinical pharmacy practice and pharmaceutical care must be recognized and merged into realistic practice models for the patient to recognize the full benefits of the pharmacist's ability.

Key ingredients

There are many actions and personal attributes that contribute to excellence in pharmacy practice management. I have tried to point out some of these in this discussion on developing hospital pharmacy practice models. However, I believe some of the most important ingredients of management excellence have not yet been mentioned. They are passion for pharmacy, determination to improve the profession, and a sincere caring attitude for helping people in need. Passion can justify programs that numbers cannot. Believing in a program or practice model is the most important ingredient to convincing others. Pharmacists know that health-system pharmacists providing patient care functions in an integrated practice model that provides quality traditional compounding and dispensing services, along with pharmacists' clinical management of drug therapy in a patient-specific form, provide conclusive value to patients and the institution.

Now back to the point we discussed much earlier. Do pharmacists believe what we know? We know what we believe but do we believe what we know? We know that pharmacists improve drug therapy outcomes, that pharmacists improve the health of patients, that patients value pharmacists, and that pharmacists deliver significant financial value to the institution. If we believe what we know, then we should be more assertive in carrying the message that pharmacy provides value. We should advocate

adequate numbers of pharmacists to meet patients' pharmaceutical care needs, and we should aggressively build practice models that provide opportunities for hospital pharmacists to use their skills to the fullest benefit of the patient. We need stronger pharmacy leaders and managers who will believe what we know and stand for what we believe.

As pharmacy managers, we should look at ourselves as servant leaders supplying our staff with the resources and opportunities needed to meet the individual pharmaceutical care needs of our patients. As servant leaders, we should put the needs of those we serve ahead of our own interests.[14] We are best able to accomplish our purpose by putting our patients' needs first and then supporting the needs of our staff so they may serve our patients to the best of their ability.

Summary

The evolution of hospital and health-system pharmacy practice over the past 50 years has positioned pharmacists to provide a wide array of pharmacy services and to perform diverse patient care functions. Overall, pharmacists are better trained clinically and pharmacists are better qualified than ever before to plan and manage patients' drug therapy independently or in collaborative practice arrangements. However, the hospital pharmacy department is challenged with the demand for extensive pharmacy services, and pharmacists are overwhelmed with opportunities to provide patient-specific functions. Pharmacists striving to provide pharmaceutical care are forced to prioritize patient care functions, and seldom are all of a patient's pharmaceutical care needs met. Developing an effective pharmaceutical-care-oriented practice model will improve the ability of pharmacists to provide patient-specific pharmacist care and improve the overall delivery of pharmacy services. The effective practice model will thus improve patients' health outcomes and provide significant value to the patient and the institution.

Excellence in pharmacy leadership and management is essential to meeting the challenges in pharmacy today and in the future. However, management excellence may be a relative concept that is difficult, if not impossible, to actually achieve, but we must strive to demonstrate characteristics of excellence as we lead and manage our pharmacy programs. We must work tirelessly to the best of our ability using the knowledge and talents we have to design pharmacy programs so that our pharmacy family can provide the greatest value to those in need—our patients. We must study and learn more about variations in practice models so that we can make our medication systems safer and more effective. We must determine what pharmacist functions are most valuable to patients, and we must reconcile differences in value to patients and value to the institution. We must be patients' primary drug therapy advocates. We must also delineate and promote our practice standards, not just minimal standards but also our best practices. All hospital pharmacists should know what patient care functions and services are most important and how pharmacy can provide the greatest value.

Pharmacists observe daily the benefits of pharmacists' care to patients, and we know with confidence that pharmacists help patients make the best use of medications. Now our responsibility is to create practice models that give pharmacists the opportunity to deliver optimum value.

We must renew our commitment to patient-focused pharmacist-provided care. We must build effective practice models that give pharmacists the ability to provide patient-focused care. And, we must communicate the value of pharmacist care and pharmacy services. We must believe in ourselves.

Management excellence is creating the environment where pharmacists believe what we know. Pharmacy delivers value. In this, I believe.

References

1. Francke DE. Mirror to hospital pharmacy: a report of the audit of pharmaceutical service in hospitals. Washington, DC: American Society of Hospital Pharmacists; 1964.
2. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Pharm Ed.* 1989; 53(suppl):7s-15s.
3. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Hosp Pharm.* 1990; 47:533-43.
4. Zellmer WA. The 1980s in review. *Am J Hosp Pharm.* 1989; 46:2465-6. Editorial.
5. Implementing pharmaceutical care. Proceedings of an invitational conference conducted by the American Society of Hospital Pharmacists and the ASHP Research and Education Foundation. *Am J Hosp Pharm.* 1993; 50:1585-656.
6. Zellmer WA. The role of pharmacy organizations in transforming the profession: the case of pharmaceutical care. *Pharm Hist.* 2001; 43:75-85.
7. Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human: building a safer health system. Washington, DC: National Academy Press; 1999.
8. Zellmer WA. Helping people make the best use of their medications. *Am J Hosp Pharm.* 1990; 47:529. Editorial.
9. Strand LM, Morley PC, Cipolle RJ et al. Drug-related problems: their structure and function. *DICP.* 1990; 24:1093-7.
10. Comprehensive accreditation manual for hospitals: the official handbook. Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations; 2006:MM-1.
11. Wren JT, ed. The leader's companion: insights on leadership through the ages. New York: Free; 1995:42.
12. Bond CA, Raehl CL, Franke T. Interrelationships among mortality rates, drug costs, total cost of care, and length of stay in United States hospitals: summary and recommendations for clinical pharmacy services and staffing. *Pharmacotherapy.* 2001; 21:129-41.
13. Hepler CD. Clinical pharmacy, pharmaceutical care, and the quality of drug therapy. *Pharmacotherapy.* 2004; 24:1491-8.
14. Rinehart ST. Upside down: the paradox of servant leadership. Colorado Springs, CO: NavPress; 1998:161.