Health-system pharmacy: New practice framework and leadership model

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As we all know, the practice of institutional and hospital (now health-system) pharmacy has had a relatively short history. To prepare for this presentation, I reviewed the Mirror to Hospital Pharmacy and reconfirmed my understanding of the dramatic changes that have occurred in our practice in a very short period of time.¹

Historical perspective

Practice. In the late 1950s, the level of practice was very limited in both scope and the number of practitioners involved in the institutional setting. Drug distribution was generally accomplished with floor stock, and relatively no patient-specific dispensing occurred. Significant attention was given to bulk compounding, assays, and quality-control services. There were many institutions without the service of pharmacists, and even larger institutions did not provide pharmacy services 24 hours a day. In 1957, almost 4700 of the approximately 7000 hospitals in the United States lacked the services of a full-time pharmacist.

Hospital pharmacy practice developed rapidly over the next several decades through the dedication of several pioneers. Many of us here today are the product of these individuals' efforts and will forever be grateful for their innovation and persistence. The 1960s saw the development of the more sophisticated drug distribution systems, including patient-specific multiple-day medication supply systems, and ultimately the beginning of the unit dose distribution system. The 1970s saw the refinement of the unit dose system and the growth of centralized i.v. admixture services. In the 1970s and early 1980s, clinical pharmacy activities involving direct patient care expanded. The decades of the 1980s and 1990s continued with increased emphasis on clinical programs and refinement of drug distribution systems. During this time, increased attention was given to...
cost-containment strategies because of the consolidation occurring within organizations and decreased reimbursement rates from government programs and managed care organizations. In the new millennium, issues of cost sensitivity continue, but added is the public's heightened awareness of safety issues and pressures to decrease the potential for medical errors. While the focus of this pressure is on overall medical care, medications have been the major target.

**Leadership.** To address the area of leadership from a historical perspective, I again reference the *Mirror to Hospital Pharmacy,* as it addresses the administrative responsibilities of the hospital pharmacist.

Thus, while the hospital pharmacist is first a pharmacist, he functions, in addition, as a combined business manager, accountant, procurement and pricing expert, production and distribution engineer, and liaison officer. . . . recognition must be given to the role of the pharmacist as the head of an important department of the hospital, one in which well-balanced emphasis must be given to both the professional and managerial roles of the pharmacist. At the same time, the pharmacist, himself, must lead the way by fully recognizing his dual professional and managerial functions and in preparing himself to do the jobs which are his as a department head and as a professional man.²

While this was the dilemma in the 1950s, it continues today and directly pertains to the concept that I will be discussing in this lecture.

**Education.** In discussing the education of pharmacy leadership, we must first address the education of pharmacists in general. Over the past several decades we have seen the education of pharmacists change from an apprentice-style education, with the Ph.C. or Ph.G. designations, to the more traditional bachelor of science (B.S.) degree. This transition formalized academic training and offered a limited number of liberal arts courses within the curriculum. In the 1960s, the B.S. degree pharmacy programs began to require five years to complete, to expand electives, and to incorporate clinical knowledge-focused course work. Throughout these developments, little or no attention was given to hospital and general management topics. We all remember the "drugstore accounting and marketing" course work and its limited value to the institutional setting. The courses in hospital pharmacy management, in most colleges, were elective and provided only an overview, at best.

The most significant advance in hospital pharmacy management occurred between the early 1950s and 1960s, with the introduction of master of science (M.S.) degree programs specifically designed to equip individuals to lead hospital pharmacy departments. Most of us here today are graduates of such programs. These programs were most often affiliated with hospital pharmacy residency programs and were generally conducted concurrently over a two-year period. These M.S. programs included some general management courses and specific course work that pertained to the operation of hospital pharmacy departments. These programs have served the practice well. Today, many large and academic institutional departments are led by individuals who have completed this type of academic and postgraduate residency training. There is a problem, however, in that many of these programs have changed, been discontinued, or, in some cases, not adapted to the current health care environment.

**Today's health care environment**

**Complexity.** I would like to quote past Webb Lecturer Bernard Mehl³ from his 2001 Harvey A. K. Whitney lecture.

At the time I entered the profession, there were two major areas of practice, community pharmacy, where 90% of pharmacists practiced, and hospital pharmacy, where only a small number could be found. . . . Medicine, nursing, and pharmacy were the major professions that treated the ill, but there was very little integration between them in the process. "Health care" is an expression that may have existed at the time but was not frequently heard and did not have the meaning it has today. There was not a concern in obtaining health care coverage, and the costs were affordable. Drugs were prescribed and prescriptions were filled at the corner drugstore. Prices for prescriptions were reasonable, and patients did not have any concerns in reference to being able to obtain their medications. Medical care and pharmacy practice were much more simplistic. There was no unit-of-use distribution, no drug information practices, no such person as a clinical pharmacist, and no direct relationship between the hospital patient and the pharmacist, and technology was a mortar and pestle.

In the remainder of his Whitney address, Dr. Mehl reviewed our profession's place in today's complex environment and the challenges it faces. The speech was particularly insightful and has been very helpful to me.

The complexity of pharmacy practice today is tremendous. We all struggle with performing multiple tasks simultaneously and making on-the-spot decisions and changes in organizational direction with little or no advance notice. We also have to deal with multiple health care professionals and administrations within and outside our departments—many times outside of our own control.

**Volume.** We are dealing with increasing volumes of activity. Drug therapy is ever increasing in its involvement and importance to overall health care. With the continual release of new agents, the potential...
number of patients receiving drug therapy from multiple specialists, and the sheer volume of drugs, the potential for prescription duplication, interaction, or confusion is very high.

**Staffing.** Personnel issues are significant to the practice of pharmacy. The first major issue within the past several years has been the shortage of all types of pharmacy staff. Pharmacists are in very low supply throughout the country and have reached critical shortages in some regions. Recent American Hospital Association data indicate that, on average, approximately 21% of institutional pharmacist positions are currently unfilled.

Part of the shortage is related to the transitioning of all pharmacy education programs to the entry-level doctor of pharmacy (Pharm.D.) degree, so that many colleges have no graduates for a year. Pharmacy technicians are also in short supply. More and more states are moving to the requirement of certified pharmacy technicians, which, while a good direction, has limited the number of technician applicants for an ever increasing number of positions. In some cases the limited number of technicians available has made it impossible for pharmacists to perform more clinical and managerial functions.

**Economics.** Health care institutions have been having a very difficult time within the past two decades with the reimbursement for pharmaceuticals and have only recently begun to be reimbursed for cognitive pharmacy services. A major problem with past billing systems for pharmaceuticals is that reimbursement has generally been product based. With cutbacks in product-based reimbursement rates, it is very difficult to justify salaries for additional staff members to expand clinical services and direct patient care functions. There have also been inadequate studies that justify the cost of the clinical services of pharmacists, and most hospital administrators have little appreciation of this level of practice.

**Technology.** In addition to information technology, such as pharmacy information systems, drug distribution technology is rapidly becoming available for deployment in many aspects of institutional pharmacy practice. However, this availability is actually creating a dilemma for some pharmacy managers. Many are still struggling with decisions regarding its application. Some institutions have made decisions that are helpful, and others have made decisions hastily without adequate analysis, resulting in failure and frustration.

**Leadership in health-system pharmacy**

**Past performance.** Leadership in institutional practice over the past several decades has been excellent, and the results prove it. Many of us are part of this phenomenal developmental process. I know how highly we regard our mentors and other leaders who have done this for all 35 plus years of my practice. We have and how we got to where we are today. It never ceases to amaze me how little new pharmacists know about the history of institutional practice. I am equally distressed that new pharmacists do not recognize the names of John Webb, Clif Lalonde, Don Francke, Herb Flack, Paul Parker, Don Brodie, Win Durrant, and so many others, including all of you in the John Webb Lecturer group. I challenge each of you to make this “history lesson” part of your continued relationship with students, residents, and staff. I have done this for all 35 plus years of my practice, and I continue to be impressed and inspired every time I recount stories for my students and residents.

**Current status.** Opinions are mixed about the current level of hospital pharmacy leadership within the United States. In many respects, the leadership at most large and academic institutions would be classified as good or adequate. However, I think it could be argued that many current directors of pharmacy are under siege, or at least do not feel that they have the necessary resources to do the job they are asked to do. Also, because of mergers, acquisitions, changes in ownership, and recommendations of consultants, many feel uncomfortable about their responsibilities or uneasy about their future. Because of decreased reimbursement rates, many pharmacists are pressured to control or limit the cost of drugs. This is very difficult at a time when new breakthrough therapies are being developed that may significantly increase the rate of curing diseases and improve the quality of life. The need for pharmacoeconomic data is great, but in most cases these data are not readily available.

**Future needs.** As most of us realize, there is a pending shortage of pharmacists to fill positions that will be vacated by many in senior leadership positions today. One of the most serious questions for us is, What model of leadership do we really need? Basically, the pipeline of the traditional director-type person is dry. With the change in curricula at all U.S. schools of pharmacy to Pharm.D., the emphasis on the traditional post-B.S. master’s degree has diminished, with only a few exceptions. I believe we need to focus on the type of additional leadership skills required to meet today’s challenges and types of practice. This leadership model must capitalize on the fact that the graduates today have a much stronger clinical base, but be very much aware that they still lack most of the fundamentals for management in today’s complex administrative environment.

**Organizational fit**

**Institutional structure.** The orga-
organizational structure of health care institutions varies in many ways, but major differences usually reflect aspects of ownership, teaching responsibilities, and university affiliations. During the 1990s, a dramatic shift continued toward the development of integrated health care systems. Although the position of pharmacy within the various structures has remained somewhat constant, changing paradigms of pharmacy practice warrant a reconsideration of pharmacy's administrative and operational structures. Traditionally, pharmacy has been perceived as an ancillary service department primarily responsible for the distribution and control of drugs and medical supplies. In this capacity, the pharmacy usually reports to an administrative officer who manages other similar departments, such as materials management and central sterile supply. Often, the administrative officer may be the manager of the materials management department, emphasizing that pharmacy's principal role is product acquisition and distribution. In other organizations, pharmacy may be grouped with clinical service departments, such as laboratory, radiology, and pathology. While pharmacy may be administratively aligned with clinical departments, these departments primarily provide diagnostic services versus therapeutics. With pharmacists' increasing activities in the management of drug therapy, pharmacy does have a therapeutics role, can contribute to direct patient care, and is more closely aligned with other departments that provide direct patient care, such as nursing, surgery, respiratory therapy, and physical therapy. In some academic institutions, the recognition of pharmacy's enhanced role in drug therapeutics has redefined the practice of pharmacy. This recognition has justified pharmacy inclusion into the medical department structure versus hospital department structure and administrative alignment with departments of medicine, surgery, and pediatrics.

While drug distribution remains an essential function of pharmacy, the pharmacist's role must be expanded and redirected toward accountability for managing the appropriate use of drugs. This is difficult to accomplish when the traditional organizational structure treats pharmacy as an ancillary service responsible for materials handling. With the increasing complexity and costs of drug therapy, pharmacy should be organizationally positioned in a manner that enables and enhances direct involvement with the provision of drug therapy. The organizational structure should be conducive for an environment of ongoing collegial relationships with those responsible for the overall clinical management of patients.

**Departmental structure.** The traditional structure of most pharmacy departments is built around the role of drug distribution, acquisition, and control. Organizational structures usually include sections for inpatient drug distribution, outpatient drug dispensing, purchasing, and inventory control. While most pharmacy departments today have components responsible for the provision of clinical services, these components are rarely the primary focus of the department's overall management structure. The clinical practitioners generally report to, or through, the clinical coordinator. As clinical programs have developed over the past two decades, with clinical practitioners assuming greater responsibility and accountability for drug therapy costs and outcomes, no commensurate efforts have been made to elevate clinical practitioners to senior levels within the department's management structure. This less visible role for the clinical practitioners has impeded the ability of many pharmacy departments to make significant gains in clinical practice.

A more effective pharmacy structure would focus on managing the appropriate use of drugs. While the appropriate use of drugs requires the safe and efficient distribution of drugs, these are not the most crucial components contributing to their appropriate use. The greater contribution will come from the redeployment of personnel from distributive tasks into drug therapy decision-making and monitoring.

Drug distribution and control functions will remain; however, a more formal autonomy for clinical practice pharmacists should emerge. This clinical practice activity should not functionally be placed within a traditional drug distribution structure, but elevated within the organizational structure to demonstrate that clinical practice is of equal importance to the traditional role for pharmacists in drug distribution. This is not the case in most pharmacy departments today, and this change will not be made easily. Beyond changing the organizational structure, the most difficult implications involve adjusting the administrative outlook and practices of current pharmacy department managers to elevate staff skill levels to meet pharmaceutical care requirements.

**Experience at M. D. Anderson Cancer Center**

**Organizational change.** Institutional structure. The M. D. Anderson Cancer Center (MDACC) is a component of the University of Texas system. The organization's structure is complex and contains components not generally found in most health care institutions, even most university teaching hospitals. For example, while the institution does not grant degrees, it has major organizational sections relating to formal academic and research activities. Within the overall structure, there are three general organizational units that resemble the more traditional health care institution structure: administration and finance, patient
care administration, and hospital and clinics administration.

Before 1986, the pharmacy at the M. D. Anderson was a major component of the hospital and clinics administration. The principal levels of the pharmacy’s responsibility and accountability were those of drug distribution, acquisition, and inventory management. As with most pharmacy operations, the M. D. Anderson deparment of pharmacy was expected to produce accurate and timely patient billing for products dispensed, and as a diagnosis-related group-exempt institution, to produce a substantial profit margin for the institution. In addition to the room charges, principal profit centers for the institution were the operating room, intensive care unit, laboratory medicine, radiology, and pharmacy. M. D. Anderson’s pharmacy department head reported to an associate administrator responsible for all ancillary services, such as social services, nutrition and food services, physical therapy, and materials management. While the pharmacy had daily interactions with the medical staff and was included in drug therapy-related committee activities, it had no formal organizational relationship to the medical staff structure and its administrative structure. The administrative structure of the medical staff is more formalized than in many academic health care institutions in that all physicians are full-time employees of the institution. The division heads of medicine, surgery, radiology, radiotherapy, pathology, laboratory medicine, and pediatrics all reported to the vice president for patient care. With the pharmacy reporting to the vice president for hospital and clinics, the line of communication was often cumbersome and did not lead to the efficient and collegial relationships necessary for pharmacy to initiate direct patient care services and activities—the practice of pharmaceutical care.

Beginning in 1981, the institution began a strategic planning process that directed all departments to identify methods to enhance current levels of activity to meet institutional and overall health care challenges for the future. The process involved the development of projections for subsequent years. This process gave the pharmacy the opportunity to identify services that involve direct patient care functions in addition to refinements in the more traditional operational components. As these plans were reviewed in institutionwide forums, it became apparent to both senior management and medical services that pharmacy needed to become more integral to the patient care component. Consequently, in 1984, the pharmacy was given the opportunity to submit a plan and a proposal to become a full clinical division reporting directly to the vice president of patient care. At the same time, a similar structure was proposed for the nursing department. In 1986, both pharmacy and nursing were established as full clinical divisions.

This structure allowed the head of the pharmacy division to not only report to the same vice president as the medical divisions, but also attend routine division head meetings. More importantly, it opened efficient lines of communication for day-to-day activities and future planning. This restructuring was an essential prerequisite for the pharmacy to discuss and gain medical staff support for implementing several future programs involving the expanded role of pharmacists in direct patient care.

Pharmacy organizational structure. While the overall administrative changes were critical to future pharmaceutical care program development, the pharmacy also needed to restructure internally. The pharmacy structure at M. D. Anderson was traditional and focused on the major responsibilities of product acquisition and distribution. The operational structure contained specific sections responsible for inpatient drug dispensing, outpatient drug dispensing, investigational drug management, purchasing, and inventory control. Patient-oriented clinical services were extremely limited, principally revolving around the provision of drug information. First, a new structure was developed that established a formal clinical services section, which was separate from any drug distribution and drug information functions, and a new assistant director for clinical services was appointed. As clinical specialists were recruited, they were assigned to different medical specialties (e.g., leukemia, bone marrow transplantation). Later, as the program expanded and additional clinical positions were added, the assistant director position was eliminated, and each clinical specialist began reporting directly to the division head.

Technology application. The intensity of drug use at a cancer center is extremely high and involves a level of complexity that exceeds most, if not all, types of medical care. In 1996, the purchases of pharmaceuticals at M. D. Anderson exceeded $54 million. Also, some drugs are obtained at no cost to support the more than 800 currently active investigational protocols. Pharmacy drug distribution responsibilities at M. D. Anderson include preparing over 4000 i.v. admixtures daily, dispensing more than 5000 unit doses of non-i.v. medications daily, preparing over 500 outpatient i.v. doses (primarily chemotherapy) daily, dispensing more than 800 traditional outpatient prescriptions daily, and managing over 600 patient-specific infusion devices daily. In addition, the pharmacy is responsible for dispensing the drugs and managing the infusions for more than 850 courses of cancer chemotherapy per month. Not only are drug therapy volumes high, but the complexity and toxicity of chemotherapy agents require extreme caution to manage significant side effects and guard against any potential for medication prescribing, dispensing, and administration errors.
For more than 20 years, the unit dose dispensing method was used at M. D. Anderson for all non-i.v. medication doses. This system involved the dispensing of supplies of unit dose packaged drugs in individual patient drawers. While new orders were filled immediately after the pharmacy received physicians' orders, a routine 24-hour replacement supply was dispensed each day. This extremely time-intensive system was generally justified on the basis of safety and time-savings for nursing administration. As efforts were underway to eliminate any unnecessary use of personnel time and allocate time for redeployment to a more clinical patient care function, an analysis of the potential use of mechanized systems or robotics equipment was initiated by the pharmacy division in 1993.

The first system included in the analysis was the Pyxis system. This system involves the placement of electronically controlled medication cabinets on each nursing unit for direct product retrieval by nursing personnel. The medications can only be removed after the pharmacy has reviewed the physician's order and electronically authorized its release in accordance with the directions specified in the medication order. Controlled substances was the first class of drugs designated for use within the Pyxis system. Later, the medications used “as needed” were added to the system to provide rapid access to these drugs and eliminate the necessity of individual dispensing transactions by pharmacy staff.

The next application of drug distribution mechanization was the analysis and implementation of the automated pharmacy station (Rxrobot). This robot is centrally located in the pharmacy and its installation at M. D. Anderson occupies a space approximately 10 feet wide, 10 feet high, and 30 feet long. Using barcode labeled special packaging, it dispenses the patient-specific doses immediately after receipt of the physician’s order and dispenses the routine 24-hour replacement medication supplies.

As with unit dose dispensing, the pharmacy division at M. D. Anderson had been providing i.v. admixture services for the past 20 years. The labor associated with this complex activity was particularly intense, with over 4000 patient-specific doses prepared each day. Over 50% of the pharmacy staff allocated to inpatient drug distribution was dedicated to i.v. drug order review and preparation. In 1994, a feasibility study was initiated to consider the option of outsourcing a portion of the i.v. admixture service workload. McGaw CAPS, located in Houston, was chosen to evaluate the outsourcing effort. The facility was located approximately two miles from M. D. Anderson. Because of the remote location, many logistic details were established regarding the types of doses they would prepare and delivery schedules. This also included the necessity for the M. D. Anderson pharmacy division to prepare most of the first doses, with the subsequent doses prepared by the McGaw CAPS facility. As the orders are reviewed at the hospital, they are simultaneously transmitted electronically and by fax to the outsourcing pharmacy. The McGaw CAPS pharmacists reinterpret the physicians' orders and verify their interpretation with that of the M. D. Anderson pharmacists. This double verification represents an important safety check that requires immediate reconciliation of any discrepancies. The early outsourcing activity was limited to parenteral nutrition solutions, but later was expanded to all other types of medication doses, including antimicrobials, electrolytes, and antineoplastic agents. When the outsourcing program reached full implementation in 1996, the outsourced volume reached approximately 2600 doses per day, representing more than 65% of the total daily production volume.

Redeployment. M. D. Anderson uses the process of monitoring drug therapy as the principal method to assess both past and current drug use. The pharmacy computer system has the capability to retrieve information about drugs used in the past, including specific agents, all drugs within a specific therapeutic category, drugs used by a particular service or specific physician, drugs used within defined time periods, and deviations from drug-use policies. The ability to retrieve this type of data is valuable because it allows us to target future areas for clinical pharmacy assignments, measure the effectiveness of drug-use policies, and assess the impact of clinical pharmacy interventions. Beyond retrospective drug therapy monitoring, pharmacists at M. D. Anderson are engaged in monitoring patients' therapies on a daily basis. As a member of the health care team, the pharmacist is given the responsibility to continually monitor therapies for patient outcomes and identify any potential adverse effects that may result from using medications. Physicians also give the pharmacist delegated authority to modify values, such as dosage or dosing frequency, and to make recommendations for drug discontinuance or initiate the use of new agents.

Pharmacists at M. D. Anderson also conduct a pharmacokinetic dosage consultation service. In this case, pharmacists monitor patients with diseases that can alter drug metabolism or excretion. They monitor not only the effects of the drug therapy but also the laboratory values that indicate each patient's ability to metabolize or excrete various drugs. The pharmacists are given the authority to modify dosages of these drugs based on the laboratory values. Pharmacists also provide monitoring of patients receiving total parenteral nutrition therapies. The critical medical status of these patients requires constant monitoring of routine drug therapies and electrolyte levels that
are affected by the complex parenteral nutrition formulations.

Because of the time savings created by the use of automation, mechanization, and outsourcing, it was possible to redeploy staff and enhance the pharmaceutical care activities of the current 16 clinical specialist positions. The cost of the redeployed staff was $490,797 (approximately 6% of the personnel budget). This facilitated full-time clinical coverage in most of the high-drug-use medical services. The strategy for the deployment of clinical pharmacy specialists centered on all drug therapies but targeted specific high-cost, high-volume therapeutic agents. These included antimicrobials, antineoplastic drugs, antiemetics (ondansetron and granisetron), growth factors (filgrastim, sargramostim, and epoetin), i.v. immune globulin, and products used for parenteral nutrition programs. In 1993, overall drug expenditure at M. D. Anderson was $72 million. After the first year of implementing pharmaceutical care interventions, and with equivalent patient volume, the cost of drugs (not inflation adjusted) decreased to $65 million in 1994, to $57.9 million in 1995, and to $54.7 million in 1996 (Figure 1).

To perform an economic comparison of these reduced expenditures at a specific point in time, an adjustment for inflation must be made. According to the U.S. Bureau of Labor Statistics, drug-cost inflation was 4.7% in 1994, 2.5% in 1995, and 2.4% in 1996. Following an adjustment to a 1993 perspective (accounting for inflation from 1993 through 1996), drug expenditures included the following reductions: 13.75% ($9.9 million) in 1994, an additional 13.2% ($8.2 million) in 1995, and an additional 7.6% ($4.1 million) in 1996.

Between 1993 and 1996, inflation-adjusted expenditures for specific therapeutic categories reflected the following changes: antimicrobials decreased 29.5% from $7.1 million to $5 million; antineoplastic drugs remained relatively constant but decreased 12.5% from $20.8 million to $18.2 million; the two antiemetics, ondansetron and granisetron, decreased 32.8% from $5.34 million to $3.6 million; the three growth factors, filgrastim, sargramostim, and epoetin, decreased 26% from $12 million to $8.9 million; i.v. immune globulin decreased 38% from $2.9 million to $1.8 million; and the group of products used for parenteral nutrition programs decreased by $1.1 million. These savings, resulting from pharmacists’ interventions, plus formulary management and initiatives in the acquisition of drug products, reduced annual drug costs in 1996 by 31% ($22.2 million) from drug expenditure levels in 1993.

These analyses are still being continued. The projections for savings for 2002 exceeds $40 million. Impact. A cost–benefit analysis was conducted at M. D. Anderson to identify all costs that were invested in a project to increase efficiencies in drug product acquisition, drug-use, and drug delivery systems and the associated costs resulting from improved efficiencies. The analysis was limited to three years (1994–1996). Components of the project included

- Expansion of clinical programs,
- Implementation of the automated pharmacy station,
- Implementation of Pyxis Medstations, and
- Implementation of an outsourcing contract for i.v. admixture services.

Cost and benefit data are summarized in Tables 1 and 2. The net present value of the project was calculated and is presented in Table 3.

Return-on-investment. This cost–benefit analysis demonstrates that the cost of benefits far exceeds the cost of investment at M. D. Anderson. While the analysis was conducted over a three-year period, the value of the investment should be maintained or increased as pharmacists’ clinical activities mature with no additional costs of personnel, service fees, or capital equipment.

Philosophy of management and leadership

Traditional thinking. Over the years, most of us have believed strongly that those with senior leadership positions should be specifically trained in subject matter similar to what each of us learned in our M.S. or Pharm.D. management-orientated programs over the past two to three decades. We also are quick to suggest the value of residencies with experi-

Figure 1. Reductions in drug costs resulting from pharmacists’ interventions, formulary management, and initiatives in the acquisition of drug products (not inflation adjusted) at M. D. Anderson Cancer Center.
in 1996.

take the time, or do not have ability,
sures that they physically just cannot
they are so occupied with daily pres-
directors of pharmacy generally do
our departments, the vast majority of
management focuses well beyond
today have learned that we can and
cus.
 gains while in leadership positions.
the 20+ years of experience that one
substitute or preplanning better than
potential training. Of course, there is no
eral training. Of course, there is no

Departmental management fo-
cus. While many of us in this room
today have learned that we can and
must expand our leadership and
management focuses well beyond
our departments, the vast majority of
directors of pharmacy generally do
not understand this. In many cases,
they are so occupied with daily pres-
ures that they physically just cannot
take the time, or do not have ability,
to step back and question their role
as leaders and managers. They are so
consumed with staffing, recruitment
and retention, cost pressures, admin-
istrative reporting issues, and so
to many other issues that they are just
barely able to keep up.

Drug-use focus. When pressures,
especially those related to institu-
tional cost control or reduction, are
presented, the normal administrative
directives focus on personnel. This is
quite normal since, in general, over-
all institutional costs are dominated
by the high ratio of personnel to oth-
er expenses. However, we in pharma-
cy are quite different and have a very
high product-to-personnel ratio. At
my own institution, we are even
more unusual with an 87-to-13
product-to-personnel ratio. While
there are many times when admin-
istrative directives are made to cut or
hold product-cost growth, the aver-
age administrator (or consultant)
will often direct general overall per-
centage reductions. This unusual ra-
tio within pharmacy departments of-
ten results in personnel cuts or limits
on needed personnel growth to meet
increasing service demands.

A combination of focuses. The
concept of general departmental and
drug-use management is not new.
Many of us have been involved in
this thinking for years, but back in
1981, Dr. Donald Brodie summed
up this thinking in his Harvey A. K.
Whitney address when he said,
“During my search for identity of a
mainstream function for pharmacy, I
proposed that drug-use control was
that function. . . . the sum total of
knowledge, understanding, judg-
ments, procedures, skills, controls, and
ethics that assures optimal safety in
the distribution and use of medications.”

Of course the management of all
activities is important, and issues of
personnel and other departmental
functions must be managed appro-
riately. However, it is essential that
pharmacy leaders convince them-
selves first, and then administrators,
that with the appropriate number of
properly trained pharmacists, there
are many times when adminis-
tative directives are made to cut or
hold product-cost growth, the aver-
age administrator (or consultant)
will often direct general overall per-
centage reductions. This unusual ra-
tio within pharmacy departments of-
ten results in personnel cuts or limits
on needed personnel growth to meet
increasing service demands.

New training and education
programs

I believe we need to focus on de-
veloping new post-Pharm.D.-graduate
training programs. I believe that the
most appropriate degree would be the
M.S. degree. However, I believe that

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<th>SPECIAL FEATURES</th>
<th>Framework and leadership model</th>
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Table 1.
Costs of Pharmacy Operation, in Dollars, at M. D. Anderson, 1994-96

<table>
<thead>
<tr>
<th>Item</th>
<th>1994</th>
<th>1995</th>
<th>1996</th>
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<tr>
<td>Clinical staff expansion</td>
<td>490,797</td>
<td>505,521</td>
<td>520,687</td>
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<tr>
<td>APS maintenance fee</td>
<td>0</td>
<td>30,500</td>
<td>31,384</td>
</tr>
<tr>
<td>I.V. admixture services</td>
<td>1,015,887</td>
<td>1,179,457</td>
<td>1,438,235</td>
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<tr>
<td>outsourcing fee</td>
<td>500,000a</td>
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<td>0</td>
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<tr>
<td>Pyxis machine rental fee</td>
<td>342,900</td>
<td>392,796</td>
<td>436,297</td>
</tr>
<tr>
<td>Room renovation</td>
<td>121,000a</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Total cost</td>
<td>2,470,584</td>
<td>2,108,274</td>
<td>2,426,603</td>
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*APS = automated pharmacy station. The maintenance fee for the APS was $0 in 1994 because of the existing warranty.

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<tr>
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<tbody>
<tr>
<td>Reduction in drug expenses</td>
<td>9,900,000</td>
<td>18,100,000</td>
<td>22,200,000</td>
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<tr>
<td>Reduction in personnel costs</td>
<td>697,133</td>
<td>718,047</td>
<td>739,588</td>
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<td>for i.v. admixture services</td>
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<td></td>
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<tr>
<td>Reduction in personnel costs</td>
<td>393,120</td>
<td>404,914</td>
<td>417,061</td>
</tr>
<tr>
<td>after implementing robot system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduction in personnel costs</td>
<td>396,438</td>
<td>408,331</td>
<td>420,581</td>
</tr>
<tr>
<td>after implementing Pyxis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase in net revenue after</td>
<td>400,660</td>
<td>400,660</td>
<td>400,660</td>
</tr>
<tr>
<td>implementing Pyxis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total benefits</td>
<td>11,787,351</td>
<td>20,031,952</td>
<td>24,177,890</td>
</tr>
</tbody>
</table>

*This represents a decrease in the total pharmacy personnel budget of 8.4% in 1994, 8.7% in 1995, and 8.9% in 1996.

*This represented a decrease in the total pharmacy personnel budget of 4.6% in 1994, 4.7% in 1995, and 4.9% in 1996.

Table 3.
Net Present Value of Pharmacy Services, 1994-96

<table>
<thead>
<tr>
<th>Variable</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net present value of benefits, $</td>
<td>50,280,114</td>
</tr>
<tr>
<td>Net present value of costs, $</td>
<td>6,361,289</td>
</tr>
<tr>
<td>Net present value of project, $</td>
<td>43,918,825</td>
</tr>
<tr>
<td>Benefit-to-cost ratio</td>
<td>7.9</td>
</tr>
</tbody>
</table>

*Net present value (1993 perspective) calculated using a 5% discount rate.
sufficient course work could come from master of business administration (M.B.A.) or master of public health (M.P.H.) degree programs.

Clinical base. An important feature of this new academic degree and training program will be the stronger clinical base that the entry-level student will have. While some students will come directly from the entry-level Pharm.D. programs, I believe that more students will have completed advanced postgraduate residency training and have substantial work experience.

Management principles. There are many traditional, but especially executive, M.B.A. programs that would serve as excellent models and actually should be considered as potential joint partners with the new program. Other potential partners are the public health schools located in several of our universities. It is important to realize that the focus of general management principles must apply equally to traditional departmental management and the broad concept of drug-use management. Also, to free personnel from routine mechanical functions, special attention and education and training must be given to the evaluation and selection process for the application of current state-of-the-art technologies.

Financial and analytical skills. Management courses should include general managerial accounting and finance principles but be taught in an application to practice manner. Pharmacoeconomics should be a major component to focus on topics such as cost-benefit, cost-utility, and other methods of decision analysis.

Broad health care scope. A broad health care scope may be obtained from schools of public health, which offer a multitude of courses, such as health economics, health policy, health promotion, and health services research methodology. The majority of the college of pharmacy health (M.P.H.) courses, and one-third M.P.H. courses, and one-third college of pharmacy health-system pharmacy-specific courses. The majority of the college of pharmacy courses (including seminars) are required, but there is a broad array of elective courses in both the M.B.A. and M.P.H. areas. We are marketing the program to new graduates but are also targeting those in current practice to enroll in an “executive M.B.A.” style. Most of the courses are available in the late afternoons, evenings, and weekends. While most interest comes from pharmacists now practicing in staff or supervisory roles, we are specifically focusing on those pharmacists in clinical roles. I still believe that many of our future leaders will emerge from this group. However, based on my many years of experience and day-to-day observations, I also know that most need this type of education and emphasis to succeed.

Professional organizations. The American Society of Health-System Pharmacists (ASHP) has been fortunate to have had a very proactive membership and elected leaders. I would like to close this discussion with a few quotes from the most recent past presidents of ASHP, Max (Mick) L. Hunt. In his inaugural address, entitled “Building the Fire Within,” he addressed the leadership issue in a very eloquent, but forceful manner.

But, I see a danger on the horizon, and my question to you today is this: As our established leaders wind down their careers, who will step forward to take their places? Who will be among the next generation of leaders? What types of skills are needed to fill their shoes? And, how do we, as individuals and as a Society, nurture that process?

He goes on to discuss several ideas regarding advice to current individual practitioners, current mentors, and ASHP. He listed several topics for ASHP to consider and act upon and I certainly concur with his recommendations. They include:

- Accomplishing the leadership plank that is part of the ASHP Leadership Agenda.
- Expanding the role of ASHP’s Pharmacy Practice Management Advisory Group to include a focus on leadership development,
- Challenging the ASHP Board and staff to develop forums similar to the current practice to enroll in an “executive M.B.A.” style. Most of the courses are available in the late afternoons, evenings, and weekends. While most interest comes from pharmacists now practicing in staff or supervisory roles, we are specifically focusing on those pharmacists in clinical roles. I still believe that many of our future leaders will emerge from this group. However, based on my many years of experience and day-to-day observations, I also know that most need this type of education and emphasis to succeed.

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- Challenging the ASHP Board and staff to develop forums similar to the old ASHP institutes where stab-
Published leaders and emerging leaders can network,

- Strengthening ASHP residency standards to include more emphasis on leadership development,
- Including leadership and mentoring topics at ASHP educational meetings,
- Challenging the ASHP Board and staff again to develop a program within ASHP that recognizes outstanding practice managers, perhaps in collaboration with the American College of Health Care Executives, and
- Actively working with state affiliates to support leadership development programs and share ideas among states.10

I believe we all can agree with this direction for ASHP and thank Mick Hunt for this emphasis.

I trust that this discussion has been meaningful to each of you and will challenge us all. I am honored to have been chosen as this year’s John W. Webb lecturer and feel that it is fitting to his name and career to be discussing these practice and leadership topics.

References
2. Ibid, p 23.