



*“The ultimate determinant of our progress is the strength and persistence of will of each individual practitioner.”*

————— **PAUL G. PIERPAOLI** —————

*(1995)*

*At the time he received this award, Paul G. Pierpaoli was Director of Pharmacy at Rush-Presbyterian St. Luke’s Medical Center in Chicago, Illinois, and Professor of Pharmacology, Department of Medicine, Rush Medical College. He was also Assistant Professor of Health Systems Management at Rush University.*

## **An Iconoclastic Perspective on Progress in Pharmacy Practice**

**T**he opportunity to deliver this year’s Whitney Lecture is the consummate honor of my career. I accept the award in recognition of the many colleagues, residents, and students who have helped me learn and grow over the years. In *The Human Condition*, political philosopher Hannah Arendt said, “For excellence, by definition, the presence of others is always required.” Harvey A. K. Whitney’s work in the pharmacy department at the University of Michigan Hospital began a tradition of excellence and accomplishment in our profession. Whitney’s successor was Don E. Francke—in my mind, this century’s greatest pharmacy thought

leader and practice innovator. I served a residency with Don Francke, and I am particularly indebted to him for his guidance and mentorship. Tonight's celebration is not so much about honoring the individual recipient as about reaffirming our purpose as a group of committed professionals. I'd like you to join me in revisiting and reassessing some elements of our progress in pharmacy practice.

## Observations on my journey

Some might view me as a soldier of fortune, since I have held six positions as a director of pharmacy, the last three of these in academic medical centers. But I can assure you that my professional itinerancy was not a quest for a higher salary or more prestige. Each of my six pharmacy director positions represented a road less traveled for me as a professional—an opportunity to reinvent myself, to transform practice to a higher level than what I found upon arrival, and to leave some footprints. During my journey, I have learned much about myself and my profession.

I speak tonight from an iconoclast's perspective, in part because the tradition of excellence that we celebrate this evening is the borne fruit of iconoclasts—people who sought to challenge and overthrow accepted beliefs. Leaders and practice innovators from every era of hospital pharmacy have been iconoclasts. Thought leaders like Doug Hepler, Bill Zellmer, and the late George Provost have challenged us to change our professional philosophy. They have changed meaning for us. Pharmaceutical care exemplifies this evolution in philosophy; it has recast pharmacy in a new context with a more compelling meaning.

Iconoclasts profess that not all is well and that things can be improved. From this perspective, I will comment on several areas:

- ▶ The disparity between the profession's purported level of practice and reality,
- ▶ Some of the forces and trends shaping and influencing our progress and destiny, and
- ▶ The profession's ongoing quest to reconcile its interest with its purpose.

## What the numbers tell us

By most objective standards, pharmacy practice in the acute care setting has advanced substantially in the past four decades. The first comprehensive survey of the status of pharmacy practice in hospitals was conducted in 1957, and the results were published in 1964 as *Mirror to Hospital Pharmacy*.<sup>1</sup> The document contained a prophetic foreword by Joseph A. Oddis, then Executive Secretary of the American Society of Hospital Pharmacists. Oddis called the survey results "truths more revealing than we would like them to be." Yet, he said, "It is only in knowing these truths that we will be able to proceed toward orderly improvements. For the first time, we can work from the truth."

The publication of the *Mirror* was a watershed marking the beginning of ASHP's commitment to improving pharmacy practice in America's hospitals and fulfilling our social purpose as a profession. Our progress is documented in nine subsequent surveys conducted by ASHP, the latest of which was published this month.<sup>2</sup> Moreover, thanks to the work of Cindy Raehl, "Cab" Bond, and their colleagues, we now have detailed information on our progress in advancing clinical services.<sup>3,4</sup> Their recent work suggests some good news about pharmacy's contribution to reduced hospital mortality rates.<sup>5</sup>

Still, considerable work remains for us in advancing practice, especially in view of pharmacy's newly avowed purpose of pharmaceutical care. The survey results, when viewed across three decades, are impressive, but it is my belief that our progress is equivocal at best, especially over the past 10 years. Reviewing the results of the nine surveys elicits more questions than answers. It compels an iconoclast to view the glass as not half full but half empty.

The ASHP survey results indicate that great progress was made in the decade from 1974 to 1985 on virtually all practice fronts.<sup>6,7</sup> In fact, there was a fourfold increase in the number of hospitals that reported having complete unit dose distribution and i.v. admixture services, 24-hour service, and some basic elements of clinical services. These surveys, of course, depend on self-reporting, which may very well bias the results. But during that decade hospitals reporting having both a complete unit dose drug distribution system and an i.v. admixture service increased from 10% in 1974 to 50% in 1985; 24-hour pharmacy service moved from 6% in 1974 (only 17% for large hospitals) to 43% in 1985 (72% for large hospitals). However, only 10% of hospitals had "comprehensive services": complete unit dose drug distribution and i.v. admixture services plus three or more clinical services that were defined in the survey instrument.

A decade later, the ASHP survey indicated that 64% of hospitals have both complete unit dose drug distribution and an i.v. admixture program and that gaps still exist in 24-hour pharmacy coverage. Although it is difficult to gauge precisely, about one in three hospitals has comprehensive services as defined by the ASHP survey instrument. What is more, 8% of the surveyed hospitals in 1994 did not have the services of a pharmacist for more than 10 hours per week.<sup>2,8</sup> Interestingly, 88% of the survey respondents reported some level of computerization, but 84% of the responding hospitals do not have a direct order entry option for prescribers and only 8% expressed the intent to develop such a capacity in the next year. Official ASHP policy states that direct electronic order entry is the preferred method of prescribing.

The statistics cited for clinical services in the 1994 ASHP survey are also quite revealing upon close examination. The most commonly reported clinical services were adverse drug reaction surveillance programs, medication error management, patient counseling, and drug-use evaluation; about 50% of the respondents had these services. Such services, I would remind you, are explicitly required by the Joint Commission on Accreditation of Health Care Organizations. Fifty-three percent of the respondents noted that pharmaceutical care, as described in the ASHP Statement on Pharmaceutical Care,<sup>9</sup> was provided to virtually none of their patients. Moreover,

less than one third of the respondents provided this level of care to less than 25% of their patients. Raehl, Bond, and colleagues, in their 1989 and 1992 surveys, also reported that even the most common direct patient care services were provided to only a small number of inpatients. In fact, if one adjusts for the high percentage of respondents offering adverse drug reaction reporting, drug-use evaluation, and inservice education, most services (with the exception of pharmacokinetics, at 54%) are below the 45% level of implementation.

Too often, I believe, we are long on talk and short on action when it comes to changing our level of practice. How can we, in good conscience, make the case for a transformation to pharmaceutical care for the mainstream of patients when, to date, we have not yet made such a transformation for those patients who are acutely ill in our hospitals and who are in greater peril of drug misadventuring by virtue of their disease acuity and level of drug therapy intensity? If such care is so critical, why is it not being demanded in hospitals?

## **Practice standards and reality**

Effective and safe drug therapy is a major determinant of the outcome of acute care. Yet, our objective measurements indicate that our progress may have slowed considerably. Our adherence to the substance and spirit of the standards contained in the 243 pages of the *Practice Standards of ASHP 1994–95* is still a far-off vision for all too many of us practicing in hospitals. I never cease to be surprised at the enormous gap between what is said and written about hospital pharmacy service programs, levels of practice, and “big names” (especially at major teaching hospitals and academic medical centers) and what actually exists in those settings. There are pharmacy departments all over this country whose scope of service and general stature within their own hospitals are a far cry from the ideals and goals of the profession. Here are a few examples:

- ▶ In a large hospital in a major metropolitan area, cancer chemotherapy is prepared by nursing personnel on nursing units, with little or no connection to pharmacy.
- ▶ In some academic medical centers, clinical pharmacists who are designated as clinical faculty of colleges of pharmacy have virtually no service responsibility or formal organizational accountability through the hospital’s pharmacy service. It is questionable whether such faculty members could justify their existence as practitioners in the absence of students, yet we expect future generations of pharmacists to see them as role models.
- ▶ Clinical pharmacists are sometimes assigned to and funded by medical departments with virtually no linkage to the pharmacy department’s service mission.
- ▶ In pharmacy departments with highly differentiated levels of practitioners, “clinical pharmacists” (or in some cases, “pharmaco-

therapists”) are exclusive providers of what I would term boutique clinical services. What happens when these providers are ill or on vacation?

- ▶ Positions of directors of pharmacy are being eliminated, as part of “operations improvement” or “re-engineering” efforts. Are positions of clinical director of radiology or laboratory medicine or chief of medical staff ever eliminated?
- ▶ In too many hospitals, the recruitment of a director of pharmacy assumes as much importance as a decision to change sources of supply of commodity products in the hospital’s general stores unit. It has always been my fervent contention that the position of director of pharmacy is as critical to a hospital’s mission as any other clinical service directorship. Hospitals that ignore this tenet diminish their capacity to accommodate to rapid change in their operating environments or to contribute to the achievement of desirable clinical or operational outcomes.

I have always been offended by a pharmacy department that is either nominally or functionally relegated to ancillary service status. The dictionary defines *ancillary* as “subordinate, subsidiary” or “inferior in order or importance.” How does this square with a belief that the services of a pharmacist are critical? I realize that the term ancillary may be only a conventional designation, but too often it has more significance than we would care to admit.

I sense that thousands of pharmacists in America’s hospitals, and tens of thousands in other settings, are leading “lives of quiet desperation,” to use the words of Henry David Thoreau. Thoreau might have been describing pharmacists’ situation when he wrote, in *Walden*:

*What is called resignation is confirmed desperation . . . . It appears as if men had deliberately chosen the common mode of living because they preferred it to any other . . . , they honestly think there is no choice.*

Are there no other choices for these pharmacists?

## **The unmet need for medication management**

Drug misadventuring and iatrogenic drug-related injury are now described as major public policy issues. In 1989, Henri Manasse<sup>10,11</sup> described the problem in a clear and detailed fashion. A short time later, Brennan, Leape, and coworkers<sup>12,13</sup> provided unequivocal evidence of the incidence and nature of adverse events in hospitalized patients. They found that 19% of the adverse events were drug related. Recently, in *The Journal of the American Medical Association*, Leape<sup>14</sup> projected that iatrogenic injuries in hospitalized patients cause at least 180,000 deaths per year, which he said was “the equivalent of three jumbo jet crashes every two days.” (Not all of these fatalities

are drug related, of course.) The public has had little awareness of the severity of the problem of hospital-acquired injuries. Leape noted that such injuries are not widely reported by the media because they occur one at a time in 5000 different locations across the country. Some highly publicized recent events indicate that this may be changing.

Findings on the prevention of prescribing errors by pharmacy departments<sup>15</sup> and the presentations at ASHP's Conference on Understanding and Preventing Drug Misadventures<sup>16</sup> further describe the unmet need for effective medication management. The iconoclast would ask, Have we really made that much progress when the most fundamental elements of drug-use control and clinical services for preventing drug-related error are still considerably out of our grasp?

For at least a decade, our colleagues Neil Davis and Michael Cohen have been promoting awareness of the importance of preventing drug misadventuring, and significant progress has been made. Since the 1985 Hilton Head Conference on directions for clinical practice in pharmacy<sup>17</sup> and the dissemination of Hepler and Strand's concept of pharmaceutical care,<sup>18</sup> many pharmacists have earnestly begun transforming their philosophy of practice. Some—a minority—are developing an organizational structure that facilitates pharmaceutical care. The profession has been trying desperately to make a crucial cultural transition that Zellmer<sup>19</sup> described as “bringing *pharmacists* rather than *pharmacies* closer to patients” to act as their advocates.

## Whither pharmaceutical care?

Virtually all of pharmacy's practice constituencies have embraced a new purpose—helping people make the best use of their medications. The concept of pharmaceutical care has provided a basis for reprofessionalization as well as an organizing purpose for pharmacy practice. If we fully embrace the concept on a personal level, it also offers the promise of dignity and self-esteem for individual practitioners.

Hepler and Strand<sup>18</sup> described pharmaceutical care as a maturation phase for pharmacists, not unlike a person's reaching social maturity. It reflects an expectation that one thrives by using one's power to serve something bigger than oneself as well as accepting responsibility for one's actions. Hepler and Strand acknowledged the implicit bureaucratic constraints that make such maturation and transition difficult. Hepler<sup>20</sup> had previously described this maturation to pharmaceutical care as the synthesis of two core activities: dispensing pharmacy from the pre-1960s era and clinical pharmacy that subsequently emerged.

Despite the widespread support for pharmaceutical care, some perceive it as either the exclusive domain of an elite corps of clinical pharmacists or merely the old wine of clinical pharmacy in a new wineskin called pharmaceutical care. It concerns me to see the term bandied about by drug companies trying to market products and by pharmacy benefit management companies whose express purpose often appears to be controlling costs rather than maintaining patients' health.

It is much too early to predict whether pharmaceutical care will take root and flourish. I hope my cynicism is not warranted; what we are witnessing could be the crystallization of an idea and the challenges of early adoption and diffusion. But one

thing is certain: We have a national problem of drug misadventuring that results in significant morbidity and mortality, ineffective care, and unnecessary and unacceptable costs. It is incumbent on all health professionals to “first do no harm,” and to work to restore health; pharmacists practicing pharmaceutical care can make a major contribution. Pharmaceutical care will not emanate from professional organizations, the educational establishment, or the profession in a collective sense, but from individual practitioners and leaders in practice environments.

## **Trends in the profession and society**

Individual pharmacists need *will* as well as *skill* for the profession’s cultural transition. I believe we have become preoccupied with imbuing individuals with skill at the expense of will. Witness our preoccupation with the Pharm.D. degree. We may have unconsciously created a generation of newly educated and trained practitioners who seek what I term “turnkey” clinical practice positions instead of opportunities to create new practice models or, better still, to elevate less-than-optimal practice. Such attitudes may have their roots in unrealistic clinical faculty role models, simulated residency training programs, and a professional literature that promises more than is being delivered. The slow pace of progress in elevating practice standards in hospitals could be related to such mindsets, but I sense that the problem is more complicated. For one thing, clinical pharmacists were in great demand during the past decade, and positions were filled by individuals who possessed the Pharm.D. degree but had little or no experience. When some naive directors of pharmacy failed to effectively nurture such practitioners, the problem grew worse.

The slowdown in growth of health care job opportunities may be starting to sober up the current generation. Recent figures from the U.S. Department of Labor show that, in 1994, 254,000 new jobs were created in the health care sector, representing just 10% of all new jobs in the economy. In contrast, there were 388,000 new health care jobs in 1990, one fourth of all new jobs. Moreover, there now appear to be more practitioners chasing fewer attractive positions.

The sustained progress in hospital pharmacy practice from the early 1960s to the mid 1980s was, in part, a reflection of a health care policy agenda that operated on the deficit model: If we made up for capital and human deficits in the system, it would function well.<sup>22</sup> Acute care hospital capacity ballooned from 3.3 beds per 1000 population in 1950 to 4.5 beds per 1000 in 1980. Medical and other health professional manpower and health services capacity more than doubled in the same period. Hospital pharmacy owes its great progress during that period to a cadre of strong leaders, most of whom were nurtured by residency training programs in the 1950s, 1960s, and 1970s, and to ASHP’s promotion of educational programs and practice innovations in the public’s interest.

Pharmacists entering the profession today face an unprecedented challenge to improve medication management, as well as the challenge of the cultural transition to pharmaceutical care. For them, will is as important as skill. They need the nurturing of a profession that speaks the truth and does not shroud its mission and responsibility to patients, and of an academic community that views the professionalization

process not only as an educational experience but also as a social experience that inculcates in students the values that will support pharmaceutical care. I am encouraged by a recent report on changing the culture within our pharmacy schools, which addresses the linkage of professional socialization and pharmaceutical care.<sup>23</sup>

Managed care's influence will undoubtedly lead to a further reduction in hospital bed capacity. The closure of more than 600 hospitals (some 100,000 beds) in the next five years has been projected. Nationwide health care expenditures in 2000 are expected to range from \$1.4 to \$1.7 trillion, with expenditures for hospital care dropping from 38% to 35% of the overall tab. Forty percent of the U.S. population is expected to be enrolled in health maintenance organizations and 40% in preferred-provider organizations. Less than 3% of the population will have traditional fee-for-service coverage without restrictions on choice of provider. Increasing provider consolidation and integration will continue as providers seek their market share of fewer and fewer available dollars.

Slowly, the Medicare and Medicaid populations will be moving to managed care arrangements; perhaps this is the final frontier for HMOs. Surviving hospitals can expect profit margins to shrink from an average of 4% to 2%.<sup>24</sup> In short, the growth of acute care in the 1960s through the 1980s is history.

From my personal observation and my analysis of the last two or three ASHP surveys, it is increasingly apparent to me that some of our important advances in practice are beginning to erode, notwithstanding euphemisms like "operations improvements," "re-engineering," and other "big six" management consultant terms. Ask any hospital pharmacy director how things are going these days, and the answer is likely to fall between "Lousy" and "We're holding our own." Staff are pressed to do more with fewer resources, and the buffer capacity for what was minimal staffing is now either marginal or nonexistent.

Given this scenario, residency training opportunities in hospitals, which have been a wellspring of leadership development, may diminish substantially over the next several years. It is imperative that new venues reflective of changing delivery patterns be developed as soon as possible, to prevent further slowing of our progress in practice innovation and advancement. Directors of pharmacy have an obligation to develop such opportunities, especially as hospitals become components of integrated health care delivery systems. Thanks to the leadership and vision of ASHP, we are positioning ourselves to understand and participate in this structural change in health care. The conference on integrated delivery systems in July in Chicago is just one of the strategic initiatives designed to help shape our destiny in this time of change.

## **Purpose versus interest**

Let's turn now to the matter of our profession's ongoing ambivalence about reconciling its interest with its purpose. In his time, Don Francke was the major iconoclast in pharmacy. He continually reminded us, through his writings in the 1950s, the *Mirror to Hospital Pharmacy* in 1964, and his commentary titled "Let's Separate Pharmacies and Drugstores" in 1969,<sup>25</sup> that the progress of hospital pharmacy and ASHP was dependent on the adoption of a philosophy of service that put purpose above

interest. It was this philosophy of purpose that fueled the enthusiasm and passion of our leaders and individual practitioners during the formative years of hospital pharmacy. Francke articulated this purpose in 1964 in the *Mirror*: “To provide pharmaceutical services as an integral part of the total patient care concept in the interest, safety, and welfare of the public health.”<sup>1</sup>

In effect, placing purpose above interest is about the profession’s spreading the truth to its members, society, and its future practitioners. Our newly defined purpose of pharmaceutical care, which has its roots in the purpose stated by Francke, indeed represents the maturation of which Hepler speaks. Given the challenges we face today, including the preoccupation with corporate interests, risk sharing, costs, and what has been termed the “monetization” of health care,<sup>26</sup> we face a steep upgrade in our road to progress in practice. These are “the best of times and the worst of times”; the promise of pharmaceutical care may well coincide with the opportunities provided by a drastically changed culture, structure, direction, and system of health care in America. The safe, effective, and efficient use of drugs as a means of maintaining health is one of the major unmet needs of our times.

In a recent issue of *AJHP*, a nonpharmacist member of the *Journal’s* staff presented a cogent and riveting consumer perspective of pharmaceutical care.<sup>27</sup> Stephen Kepple conveyed his experiences: the absence of any level of palpable awareness of the pharmacist’s role in his own hospital care, let alone any public understanding of the concept of pharmaceutical care as it has been espoused by the profession. Kepple may be right on target.

Whether or not the public and payers associate pharmacists with the solution to the unmet need for medication management is of grave importance to us as a profession. We have precious little time left to provide convincing reason for our existence.

I see one possible future for the practice of pharmacy already taking shape: a movement toward two distinct plateaus of practice. I fear that one plateau will be inhabited by pharmacists who are content with a core activity of dispensing and traditional prescription service. Where a drug product is treated as a commodity moving through a continuum of health services and is considered one of many variable expenses to a health care executive or an employee benefits manager. The pharmacy practitioners on this plateau will be, by and large, product production managers overseeing an array of automated dispensing technology and technicians in chain pharmacies, food outlets, mail order enterprises, and so on. Some of them will have a very modest role in patient communications; others will not have any. These pharmacists have, in many instances, already made a personal choice between their interests and their purpose. I do not in any way choose to demean or denigrate such pharmacists. It is conceivable that they may face personal economic peril; as profit margins continue to erode, many corporations (both for-profit and nonprofit) will not be able to sustain the costs of employing individuals essentially because they are legally franchised to practice pharmacy by a board of pharmacy. My sincere hope is that fewer practitioners will be on this plateau than on the other.

Practitioners on the other plateau will be those who have made a conscious choice to embrace pharmaceutical care as a purpose, on both an intellectual and an emo-

tional level. These practitioners will not view themselves as an elite simply by virtue of possessing a degree or a pedigree that characterizes them as a hospital pharmacist, a health-system pharmacist, a clinical pharmacist, a pharmacotherapist, or a clinical faculty member of a school of pharmacy. Certainly, they will have differentiated practices, and reasoned specialization will be a fact. They will be pharmacists who function in different settings along a continuum of health care services to contribute to optimal health status—a high and noble calling.

The ultimate determinant of our progress is the strength and persistence of will of each individual practitioner. In terms of the exercise of power, all individuals in a free society or corporate environment have three distinct choices—exit, voice, and loyalty.<sup>28</sup> They can leave (exit). They can stay and contribute as expected (loyalty). Or they can stay and try to change the system (voice).

## **Importance of organizations and pharmacy schools**

Each practitioner's personal journey as a professional, however, is made possible and productive through the support of professional organizations that exercise true leadership—organizations that do the right things and constantly focus their constituents on their purpose by professing and demonstrating the truth. They consistently restore our vitality as individuals in the interests of the patients we serve.

Pharmacy's destiny as a profession is, in large measure, linked to the sense of community that its practitioners share. Our history of organizational fragmentation and political posturing will no longer serve us, given the unprecedented changes in health care. Any group that seeks to place its purpose above its interest must focus on commitment and not control. Regrettably, we have, through our fragmentation and pursuit of political interests, concentrated on the latter. I entreat pharmacy's organizational leaders to get beyond the rhetoric of purpose and establish some relevant organizational means, possibly not unlike a federation arrangement, for meeting the challenge of professional survival.

Our educational establishment is equally critical to the achievement of our destiny. For too long, the practice community and schools of pharmacy have had an uneasy relationship. From the 1940s through the early 1980s, the practice community in pharmacy ceded its claim on influencing its destiny to an academic community that exalted the basic sciences or the business ethic of pharmacy at the expense of the advancement of clinical practice. We have paid dearly for the lack of leadership and commitment to practice innovation in most schools of pharmacy during that period. The urgent situation in which the practice community now finds itself is partly due to two generations of pharmacists who, in too many instances, were never truly professionalized. Professionalization has to begin in school and be nurtured by classmates, clinical preceptors, and practitioners, not disgruntled pharmacists leading lives of "quiet desperation." Fortunately, some practitioners were exposed to excellent role models or had residency preceptors as mentors; we trusted it to chance, however.

During the past decade, a small but dedicated and persevering new generation of practitioners who did become properly professionalized and a small number of enlightened academic leaders have finally begun to forge true partnerships. These partnerships are

built on a commitment to a noble purpose—pharmaceutical care. This bodes well for us. But such partnerships are far from the mainstream. The unmet educational needs are great, whether we speak of addressing the needs of the two generations of practitioners who have not been the beneficiaries of the clinically oriented Pharm.D. curriculum or the broader issue of effective professional socialization.

## Conclusion

Our personal professional journeys are the major determinants of our destiny as a profession. I hope that your personal professional journey will continue to be as fulfilling as mine has been and that “we can all work from the truth,” to use Joe Oddis’s prophetic words from the *Mirror to Hospital Pharmacy*.

## Acknowledgments

Permit me to acknowledge “the presence of others” in my own personal journey. My family—Arlene, Steven, and Paul—shared all the peaks and valleys and at times paid dearly for my being consumed by that journey. I also want to acknowledge my late parents, Gaspare and Olga Pierpaoli, immigrants who came here without material resources and without the benefit of any formal education in their native country. They brought only their hopes, dreams, and enormous resolve and motivation for a better life for themselves and their children. By their example, they imprinted in my mind the importance of finding dignity and self-esteem through the pursuit of a worthy cause, doing the right things, and sheer hard work and dedication.

I have the good fortune of having many friends, including many of the past Whitney Award recipients. There are some individuals, however, who have been especially instrumental in my personal journey: Henry Palmer, Doug Hepler, Herman Lazarus, and John Webb, who helped me dust myself off and get up again at an early and formative point in my career. Friends, residents, and students, at the University of Connecticut Health Center and the Medical College of Virginia Hospitals, who helped forge a new practice destiny in those hospitals. Donald Rucker of Chicago and Alex Berman of Cincinnati, who continue to be wonderful friends and have inspired me in countless ways.

In my present position, I’m blessed with a superb professional, technical, and support staff, especially my professional partner and associate, Jim Hethcox, and our entire department’s management team. I am also thankful for the support of the chairman of the department of medicine, Dr. Stuart Levin; the vice president of medical affairs and dean of Rush Medical College, Dr. Eric Brueschke; and the hospital administration.

---

---

(For the complete list of references cited, please see page 1763 of the *American Journal of Health-System Pharmacy*, Aug. 1995.)

*Harvey A. K. Whitney Award Lectures (1950–2005)*

© 2006, ASHP Research and Education Foundation. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, microfilming, and recording, or by any information storage and retrieval system, without written permission from the American Society of Health-System Pharmacists Research and Education Foundation.

[www.ashpfoundation.org](http://www.ashpfoundation.org)