Fifty years ago, a signal event occurred in the history of American healthcare: ASHP published *Mirror to Hospital Pharmacy*, the complete report of the Audit of Pharmaceutical Service in Hospitals. Professional publications come and go, of course, garnering attention among practitioners for a short period of time before being replaced by something newer, more advanced, or more comprehensive. A select few, however, become classics that remain significant in a profession’s consciousness because of their depth and breadth. It is so with the *Mirror*.1

When we look back to the late 1960s, a few foundational events stand out as critical to the practice paradigm shift of clinical pharmacy that changed the profession. Among these were the Audit of Pharmaceutical Service in Hospitals (1957–63), the establishment of the American Hospital Formulary Service by ASHP (1959), Eugene White’s remodeling of his community pharmacy and development of patient profiles,2 the publication of *Mirror to Hospital Pharmacy* (1964), and the 9th Floor Project at the University of California, San Francisco (1966).3 Of these, the *Mirror* served as a cornerstone, both marking how the edifice of American hospital pharmacy would be constructed and containing a time capsule of hospital pharmacy practice for the benefit of generations to come.

In the early 1960s, the authors of the *Mirror* were not interested in aiding future historians; they looked toward a new frontier of professional hospital pharmacy. In the era of the “space race,” the authors characterized the *Mirror* as a “launching pad” to a future of better patient service and increased professionalism among all American pharmacists.4 Full of ambitious ideas, the authors of the *Mirror* put forward audacious proposals without any inkling that Lyndon Johnson’s “great society” program of Medicare would jumpstart their general implementation.5

Copies of the impressive 272-page *Mirror to Hospital Pharmacy* reached the hands of all ASHP members in early 1964 (Figure 1). Hence, the Audit of Pharmaceutical Service in Hospitals and its report get lumped together with innovations of the 1960s, especially the emergence of clinical pharmacy. However, we should view the *Mirror* as a product of the 1950s, a decade of equal significance to American hospital pharmacy. In the realm of community pharmacy, practice had shrunk to “counting and pouring” under the restrictions of the Durham–Humphrey Amendment6 to the Food, Drug, and Cosmetic Act and the passage of state laws prohibiting generic substitution by pharmacists. The restrictive nature of community practice is reflected by the 1952 code of ethics of the American Pharmaceutical Association (APhA), which stated the following: “The pharmacist does not discuss the therapeutic effects or composition of a prescription with a patient. When such questions are asked, he suggests that the qualified practitioner (i.e., physician or dentist) is the proper person with whom such matters should be discussed.”7

In contrast, the subdiscipline of hospital pharmacy inaugurated a variety of innovations to meet the...
challenges of postwar institutional practice expansion after the passage of the Hill–Burton Act of 1946. In the 1950s, pharmaceutical laborato-
ries introduced an exciting array of new drug classes that dramatically increased the amount of prescribing. In addition, drug companies actively copied each other’s new products, flooding the market with unness-
sary duplication. To meet these chal-
 lenges, leading hospitals developed pharmacy and therapeutics commit-
tees, prior-consent agreements, and formularies.

In contrast to community prac-
tice, which was dominated by a fairly uniform network of small owner-
operated shops (and a growing num-
ber of chain drugstores), American hospitals varied from converted rural homes with a few patient rooms to huge urban institutions with hun-
dreds of beds. Pharmacy service in hospitals reflected this variation as well, with many small hospitals ob-
taining medicines from nearby retail drugstores while large hospitals oper-
ated sophisticated pharmacy depart-
ments staffed with pharmacists who had completed internships in hospital practice. The leadership of hospital pharmacy recognized the challenges of advancing the field without a firm comprehen-
sion of this wide diver-
sity. Soon after ASHP was founded in 1942, officers of the Society including Harvey Whitney and Donald Francke expressed the need for a national sur-
vey of pharmacy services.

By the early 1950s, debate grew within hospital pharmacy circles about the nature of such a survey. Some argued for a fairly limited effort based on the Minimum Standard for Pharmacies in Hospitals, while others called for a highly detailed survey. Another sizable component of hospi-
tal pharmacy directors pleaded for no survey of any sort as they felt “deluged with questionnaires.”

A strong advocate in the late 1940s for a comprehensive survey was Robert P. Fischelis, head of APhA and director of the Division of Hos-
 pital Pharmacy, a cooperative effort between APhA and ASHP. In 1950, Donald Francke became the new director of the Division, and APhA applied for a federal grant to conduct a service survey. The grant was not funded by Congress, so other avenues were considered. In 1951, Fischelis put forward a concrete proposal to the policy committee of the Division of Hospital Pharmacy. Over the next few years, the Division weighed sev-
eral different survey options. Late in 1955, Congress passed an appro-
 priation for the Medical Facilities Survey and Construction Act of 1954, which served as the basis for funding the Audit of Pharmaceutical Service in Hospitals for $36,000. A later add-
tion to the original grant brought federal funding up to $70,000, equat-
ing to about $600,000 in 2014.

With the approval in hand, Fischelis and Francke began to plan the Audit of Pharmaceutical Service in Hospitals—Francke would serve as principal investigator and program director of the audit while continuing to work as the director of pharmacy service at the University of Michigan Medical Center, Ann Arbor. Clifton Latiolais, the chief pharmacist at Strong Memorial Hos-
pital in Rochester, New York, would work full-time as assistant program director out of offices at Ann Arbor. Gloria Niemeyer Francke, secretary of ASHP, was enlisted as a research associate. In 1960, Norman Ho, supervisor of the assay and control section of the pharmacy department at the University of Michigan Medi-
cal Center, joined the Audit staff to undertake statistical analysis after the data collection and processing phases. Figure 2 shows the authors preparing to make a presentation about the Mirror.

From the start, Don Francke saw the Audit project resulting in some-
thing much more than a tabulated survey. As he reported at the 1956 annual meeting of the Society:

The five papers in this section are based on presentations at a 2013 ASHP Midyear Clinical Meeting session commemorating the 50th anniversary of the publication of the Mirror to Hospital Pharmacy. The session was entitled “Change in Pharmacy Practice: Does It Just Happen or Can It Be Planned? Lessons from the Mirror to Hospital Pharmacy.”

The Mirror reported the results of the first major national survey of hos-
pital pharmacy in the United States, expressed a compelling vision for the field, and offered bold goals as a path-
way for achieving that vision. Those goals were embraced as the professional-
advancement agenda of the American Society of Hospital Pharmacists in the 1960s and 1970s. Written by Donald E. Francke, Clifton J. Latiolais, Gloria N. Francke, and Norman F. H. Ho, the Mirror to Hospital Pharmacy holds les-
sions even today for how articulating a vision and making plans to achieve that vision can help shape the profession.

Because of the contemporary interest in the Mirror by pharmacy residents and preceptors, teachers and students in colleges of pharmacy, historians in the pharmaceutical field, and practitioners who have an inter-
est in the profession’s history, ASHP has made the book freely accessible on its website (www.ashp.org/menu/AboutUs/History/Mirror-to-Hospital-
Pharmacy).

The Midyear session was cospon-
sored by ASHP, the American Institute of the History of Pharmacy, the University of Michigan Health System and College of Pharmacy, and the Latiolais Leadership Program of the Ohio State University College of Pharmacy.

The lead article, by Gregory J. Highy, places the Mirror to Hospital Phar-
macy in broad historical perspective, and the second article, by Douglas J. Scheckelhoff, comments on the extent to which hospital pharmacy’s goals of a half-century ago (as expressed in the Mirror) have been achieved.

If bold goals for health-system pharmacy, in the spirit of the goals in the Mirror, were to be expressed today, what might they be? The last three brief articles offer ideas for such goals from the perspectives of an experienced practice leader (James G. Stevenson), a new practitioner (Joseph Bonkowski), and a seasoned observer of the field (William A. Zellner). In introducing their comments, these three speakers expressed their support for the ambitious goals for the future that have been articu-
lated and are being pursued by ASHP (www.ashp.org/DocLib/AboutUs/Strategic-Plan.pdf).
The purpose of the Audit is to study methods of improving and extending pharmaceutical service to patients. . . . It is important to recognize that we are not making a survey in the usual sense of the word. We are not so much concerned with finding out what is being done as we are in finding out what is being done and then selecting the best type of service and the best type of pharmaceutical practice, and to bring these things together and to make recommendations.13

He continued:

One of the easiest things to do would be to draft a questionnaire and to send it to all hospital pharmacies in the country and ask questions about how many have a pharmacy [and therapeutics] committee, how many have a formulary, and so forth. However, it is essential to delve far deeper into the problems of hospital pharmacy service if we are to achieve significant results.13

At the end of 1956, Francke14 published an editorial in the Bulletin of the American Society of Hospital Pharmacists informing the members that the first questionnaires would be mailed in early 1957 “to a scientifically selected sample of 3,500 hospitals.” As in subsequent reports, Francke was careful to outline the basic facts of the Audit: the grant, the staff, the methodology, the endorsing organizations (American Hospital Association and Catholic Hospital Association and APhA and ASHP), the cooperation of the various committees, and the involvement of the University of Michigan Survey Research Center. Moreover, he emphasized that this was “the first comprehensive, national study of pharmaceutical service in hospitals undertaken in the United States” and that it would “study methods of improving and extending . . . service in the interest of better patient care.”14

He concluded with this call: “The successful completion of the Audit of Pharmaceutical Service in Hospitals requires the wholehearted cooperation and active participation of all hospital pharmacists.”14 As the questionnaires went out in 1957, Francke continued to implore pharmacists and pharmacy directors to cooperate with the project.

Working with the University of Michigan Survey Research Center and the Advisory Committee of Association Representatives, Latiolais developed two questionnaires: one with 73 questions for hospitals with 100 or more beds and another consisting of just 16 questions for the more numerous smaller hospitals. All 1948 large hospital pharmacy departments received the long questionnaire. Because of the high number of smaller hospitals (5115), the Audit team sent out questionnaires to a sample of one third of them. A special effort was made to get responses from all 2339 hospitals that employed a pharmacist, regardless of hospital size. From the 1853 hospitals with full-time pharmacists, the Audit succeeded in receiving nearly an 84% response rate.1 This impressive level of participation is in part attributable to Francke’s coalition building and his constant reminders that appeared in ASHP publications. Moreover, Latiolais’s diligent effort in refining and clarifying the questionnaires both helped the response rate and improved the quality of later data analysis (Ho NF, personal communication, 2013 Sep).
Ho (Ho NF, personal communication, 2013 Dec) recalls:

The expertise of the University of Michigan Survey Research Center played invaluable roles in the sampling design, construction of the questionnaires and coding of responses for the key sort electronic system. Even a pretest was carried out to improve the clarity of the questionnaire by responders. The questionnaires were sent out in mid-1957 and the returns were completed by early 1958. All responses were punch-typed on IBM cards. A report (preliminary) of the findings was prepared in late 1958.

In late 1958, Latiolais left Ann Arbor for Ohio State University in Columbus but continued to participate in the Audit project. This meant that all the principal players had other full-time duties, which slowed down the project. A preliminary report of the findings of the Audit was released in late September 1958 to consultants and committee members for comments. In January 1959, analysis of the data and work on the final report began, with Ho added to the project in 1960 to assist with graphic displays and statistics (Ho NF, personal communication, 2013 Aug, Dec).¹

In the years between the preliminary report and the publication of the Mirror in 1963, the Audit team kept up interest within the Society by providing reports at ASHP annual meetings. When Francke left the University of Michigan in 1963 to join the staff of ASHP as Director of the Department of Scientific Services, Executive Director Oddis encouraged him to finish the final report before tackling new duties (Oddis J, personal communication, 2013 Nov; Ho NF, personal communication, 2013 Dec). Given the time to pull together outside comments and the thinking of the team, Francke wrapped up the findings of the Audit and its recommendations into the Mirror.

Looking back at the leadership lessons of the Mirror, we can admire the ambitious plan of action. A key feature is a concise mission statement based on a clear philosophy: “The basic objectives of this study are to determine what constitutes good pharmaceutical service for patients in hospitals and to study methods of improving the quality and expanding the scope of these services in the interest of better patient care.”¹⁵

This general statement was followed by seven specific objectives:

- Examine practice and service, including in small hospitals,
- Determine elements of service promoting better care,
- Consider education and training to perform service elements,
• Obtain data to correlate background education with service,
• Determine future facility, equipment, and personnel needs,
• Study economics of providing pharmaceutical service, and
• Recommend plan of action for implementation of findings.¹

Findings of the Audit

Readers interested in the detailed findings of the Audit should consult the electronic version of the Mirror.¹ Some of the notable results are listed below.

Fewer than half of the beds in U.S. hospitals fell under the care of a full-time pharmacist. Most hospitals did not have a direct pharmacist service, and medicines in these hospitals were handled by staff nurses or nearby retail pharmacists. Overall, there was less than half of a full-time pharmacist for every 100 beds in the United States, a sharp contrast to the 17–18 pharmacists per 100 beds today.³

In 1957, understaffed hospital pharmacies still did a significant amount of inhouse manufacturing, with 41% of large hospitals performing bulk manufacturing or compounding.¹ Pharmacy directors commonly argued that this practice saved money compared with purchasing the preparations from drug companies. And if the manufacturing saved money, then this activity justified increasing pharmacy staff.

The authors of the Mirror advocated strongly for teaching by hospital pharmacists, both in their institutions and in schools of pharmacy. They were not pleased by the findings of the Audit. About half of all pharmacists surveyed did not want to teach anyone, whether nurses or student pharmacists. And the pharmacists who did teach provided instruction to nurses four times more frequently than to other pharmacists or pharmacy students.

In addition, two thirds of respondents did not want to be involved in any sort of research, either in pharmacy service or clinical trials. Three quarters wanted to leave the final preparation of sterile products to others (nurses). And only 1 in 10 pharmacists wanted to serve as a drug information resource. The reluctance of hospital pharmacists in 1957 to provide advanced service was attributed to a lack of staff and facilities. They claimed a high level of operational freedom to innovate but not the resources necessary to do so.²

Perhaps most surprising from our perspective today is that 92% of respondents found drug company representatives (“detailmen”) helpful, and 77% of pharmacists indicated that they relied heavily on company literature for drug information.¹

One of the greatest signs of the progress of hospital pharmacy between 1957 and 2014 is the level of educational achievement of chief pharmacists. The Mirror revealed that roughly 36% of chief pharmacists of larger hospitals held a Ph.G. (two-year) or Ph.C. (three-year) degree, 67% a B.Sc. or B.A. degree, and 4% an M.Sc. degree. Another 5% had no degree whatsoever. Only 1 of the 1346 chief pharmacists responding possessed a modern six-year Pharm.D. degree.¹

Recommendations

As important as the findings were for future planning, the authors of the Mirror put their “Conclusions, Recommendations, and Implications” first in the book, before the survey results. They made 85 concrete and specific recommendations in five areas:

• Direct professional functions (18 recommendations),
• Advisory and teaching functions (20 recommendations),
• Facilities: space, equipment, and manpower (18 recommendations),
• Administrative services (15 recommendations), and
• Role of professional societies (14 recommendations).

The recommendations varied from the mundane to the visionary. For example, recommendation 6.12 urged that an annual inventory occur in every pharmacy department. Recommendation 9.4 boldly called for a new school of hospital pharmacy to be established in conjunction with a university medical center.¹

Still relevant today for the entire profession of pharmacy are the goals for hospital pharmacy introduced with this clarion call:

You have read the recommendations based on this study. However, something essential is missing. Most of the recommendations could be carried out and hospital pharmacy would remain much the same. For we must change something more basic than bricks and stones, policies and procedures, figures and forms. We must change ourselves and our concepts of the practice of pharmacy. Motivation is the well-spring of action. Motivation and performance are precursors to progress. To begin, we must agree on long-range goals for hospital pharmacy in America. These goals must be based on a philosophy of service.¹

In the Goals section, Francke asserted that the survival of the pharmacy profession rested with hospital pharmacy, not community practice. He was not afraid to call the highly commercialized and deprofessionalized American drugstore “an international joke.” These were brave contentions at a time when hospital pharmacists were a small minority of practitioners with little public presence or political clout within the profession.¹,¹⁶

To correct the poor reputation of American pharmacy in general, the Mirror builds on an argument attributed to pharmacy educator Linwood Tice and expanded by Latiolais:¹⁷ The status of pharmacists rests largely on the opinion of physicians and how they convey this thinking to patients. In other words, the public
derives much of its understanding of pharmacists and their value from the remarks of physicians. In the hospital environment, physicians and pharmacists work in close proximity, in sharp contrast to the distance that commonly separates community pharmacists from practicing physicians. Therefore, “in the hospital pharmacist’s hands lies the future image of pharmacy.” If the hospital pharmacist can consistently improve patient care through innovation and high-quality service, physicians will notice and tout the value of the pharmacy profession as a whole. “It would be naive, however, for hospital pharmacists to think that they can accomplish such a goal by themselves. There is a need for all the segments of the profession to lend their support to the development of high quality pharmaceutical practices in hospitals.”

The Goals for Hospital Pharmacy were preceded by 10 “basic truths” that illuminate the philosophy behind them:

1. A profession is an associative society whose members possess and pass on a special field of knowledge acquired by extensive study and practice.
2. The field of specialized knowledge of pharmacists is pharmacy itself; that is the science and art of those matters related to the procurement, preparation, control, and distribution of drugs, including the numerous elements that comprise these entities.
3. Possession of this knowledge and skill, and their use for the benefit of humanity are the prime bases for the existence of pharmacists.
4. Pharmacy will receive professional recognition from society only to the extent that its practitioners make use of their specialized scientific and professional knowledge.
5. True professional growth in hospital pharmacy will result only when the hospital pharmacist expands areas of practice that enable him to utilize the specialized professional and scientific knowledge and skills which are uniquely his.
6. The hospital environment provides opportunities in great measure for the pharmacist to utilize his unique knowledge and skills.
7. Education and training form the bedrock upon which hospital pharmacy must build in order to bring knowledge and experience to bear upon practice.
8. Professional advancement is fostered when a professional organization produces and makes widely available information and services which its members cannot provide for themselves.
9. Professional advancement is possible only when practitioners commit themselves to their professional ideals as the vital truths upon which their professional work on earth is made whole.
10. The purpose of a health profession is to serve the health needs of the people. These basic truths remain as relevant today as in 1963. In fact, one could argue that in face of rising disillusionment among community practitioners, they offer a philosophical foundation for professional action.

The Mirror’s conclusions

In the Mirror to Hospital Pharmacy, Francke and his team concluded that there existed a tremendous variation in the level of staffing and service across the nation’s hospitals. Moreover, pharmacists expended an inordinate amount of time and effort manufacturing, compounding, and distributing medicines. Yet, the foundational elements were in place for fundamental change: Hospitals had pharmacy and therapeutics committees to administer formularies and prior-consent agreements. Like it or not, in the face of the great growth in new drug classes, members of hospital staff were turning to pharmacists for drug information. Left alone to their own operations by most hospital administrators, pharmacy directors had the freedom to operate and to innovate. And the returned questionnaires exhibited a firm commitment to patient service and care.

Leadership lessons

A backward glance at the Audit and the Mirror reveals a number of leadership lessons:

• Assemble an all-star team.
• Obtain outside help and expertise as needed.
• Have clear objectives.
• Plan carefully and deliberately.
• Get the data.
• Keep your constituency involved.
• Analyze, digest, and think.
• Solicit comments broadly.
• Aim high and put forward a bold vision in lively prose.

Francke put together a solid small team of dedicated workers. At the same time, he was not shy to ask for help and outside expertise. The Audit team used the University of Michigan Survey Research Center and recruited Ho when statistical aid was needed. By drawing on a broadly based advisory committee and a cadre of consultants, the team garnered not only additional insights but continuous support for a long-term project. Francke kept people involved through his editorials and press releases. And above all, he took the time to think, “digest,” consult with others, think some more, and write with conviction.

Mirror to Hospital Pharmacy was a cornerstone for the development of modern hospital pharmacy in the United States, by providing a baseline for planning as well as sets of concrete recommendations and lofty goals. With the publication of the Mirror, hospital pharmacy declared itself the vanguard of the American profession. The Audit project occurred as
American pharmaceutical education struggled with its future direction, and the Mirror provided strong arguments for a six-year Pharm.D. degree for hospital pharmacists and by extension all practitioners. Above all, Mirror to Hospital Pharmacy put forward a fully developed philosophy of professional practice based on service for the benefit of patient care.

In a 1961 editorial (reprinted in 1979) entitled “The Written Word,” Donald Francke19 penned a fitting ending to this look back at the Mirror and its goals, fulfilled and unfulfilled:

An acquaintanceship with the literature of one’s profession blended, in some unknown manner, with an acquaintanceship with the profoundly revealing writings of great men of all ages forms the foundation upon which a profession makes its greatest contribution to its members and to society as a whole. Hospital pharmacists have made a beginning, and a good one—but vast opportunities for the enrichment of hospital pharmacy’s literature await fulfillment.

References