
Bringing the best of medical librarianship to the patient team

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This article introduces a series of articles examining the state of the medical library profession as practiced in the clinical context. It is widely understood that many changes across the spectrum of medical librarianship practice have been brought about by both technological advances and economic realities. These changes have created strains felt by many in the profession. Discussions of evolving roles for medical librarians that have gone on for years have taken on a new sense of urgency, not just because support of library services is at stake, but also because new opportunities, which many are eager to explore, await librarians. In June 2000, an editorial appearing in a mainstream medical journal proposed a reinvention of clinical librarianship that, if designed as presented in the editorial, would have a dramatic effect on current hospital-based library practice. This series of articles was developed in an effort to provide thoughtful consideration of the "informationist" model and to present new ways to look at the core competencies that define the profession.

THE INFORMATIONIST: A NEW HEALTH PROFESSION?

In a June 2000 editorial in the *Annals of Internal Medicine*, Davidoff and Florance presented for consideration a reinvention of clinical librarianship, which was first proposed in the 1960s and is still practiced in perhaps a few hundred hospitals. Davidoff and Florance as-

serted that this new credentialed professional, termed an informationist, would be so much a part of the health care team that patients' care would not be complete without their services. To take their place on the health care team, informationists would possess the skills of librarians, as well as those of biostatisticians, computer scientists, and medical professionals.

Davidoff and Florance begin the editorial with the statement: "physicians have always had a professional obligation to base their decisions on the best available information, an assumption now explicitly embodied

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in the concept of evidence-based medicine" [1]. While the obligation to base decisions on credible information is not unique to their profession, physicians feel pressure as never before to prove to patients, health insurance companies, managed care organizations, the federal government, and hospital administrators that their decisions are based on solid evidence. Accessibility of high-quality, knowledge-based resources is just one of the challenges. Systems must be in place that link health care professionals to information about patients at precisely the right time and place in the process. When a system breaks down or is not well constructed in the first place, the results are miscommunication, breaks in workflow, errors, and confusion. The Institute of Medicine (IOM) found precisely these conditions when reporting the causes of medical errors.

In 1999, the IOM's Committee on Quality of Health Care in America published a widely cited report called "To Err Is Human: Building a Safer Health System." This report reviewed data from a number of studies across the United States and concluded that anywhere from 44,000 to twice that number of people die annually as a result of medical errors, including those involving preventable adverse drug reactions. Reported causes for errors were related to inefficiencies in the system and not to physician negligence or incompetence. To address this issue the report suggested that everyone involved in the art, science, and business of health care work together. In his preface, the chair of the committee stated that "traditional clinical boundaries and a culture of blame must be broken down. But most importantly, we must systematically design safety into processes of care" [2].

In a follow-up report, "Crossing the Quality Chasm," published in March 2001, the committee recommends that the health care delivery system focus first on improving care for the most prevalent chronic conditions—such as heart disease, diabetes, and asthma—in the United States. Because these and similar disorders consume a significant amount of health care dollars and often contribute negatively to other health conditions in the same patients, success in managing them could result in exponential improvements in the status of the nation's health. One of the central observations made by the IOM is that physician groups, hospitals, and health care organizations work so independently from one another that they often are unaware of all aspects of patients' interactions with the rest of the system. Patients may be treated for one condition, while another condition is ignored or even made worse. The committee states that "America's health system is a tangled, highly fragmented web that often wastes resources by providing unnecessary services and duplicating efforts, leaving unaccountable gaps in care and failing to build on the strengths of all health professionals" [3]. By establishing collaborative health

care teams who find ways to integrate technology into the delivery of core services provided by each member of the team, new solutions can be found that represent the best practices of each professional group.

"Crossing the Quality Chasm" provides a systems approach and recommendations for meeting urgent challenges facing all who deliver or receive health care in the twenty-first century. Termed "an agenda for crossing the chasm," themes of special interest to health information professionals reframe patients from objects to participants and call for a partnership approach in the development of a best-practices knowledgebase.

At present, patients are seen as individuals at a given point in time, presenting for examination, consultation, admission, treatment, discharge, and payment. Though qualified professionals may treat patients compassionately throughout the process, a short-term relationship is established at each encounter, with patients' learning left to chance. This lack of relationship paired with haphazard delivery of information to patients does little to build confidence in their own ability to care for themselves. Through relationship building over time, in a way that is reinforced continually as patients interface with the health care system, patients will gain the confidence required to assume responsibility for their own health [4].

The cultures of blame and fear are both described and promulgated in a timely article in the March 2001 issue of *The New Yorker*. In the appropriately titled, "Final Cut: Medical Arrogance and the Decline of the Autopsy," author Gawande points to several studies in the medical literature, including one by Lundberg, the former editor of the *Journal of the American Medical Association*, in an attempt to provide evidence of widespread misdiagnoses by physicians. In addition to including Lundberg's assertion that rates involving this type of error have not improved in the past sixty years, Gawande reminds the reader that "a large review of autopsy studies concluded that in about a third of the misdiagnoses the patients would have been expected to live if proper treatment had been administered" [5]. Several studies in the medical literature support Gawande's claim that autopsies could yield a considerable amount of useful information. This information could be analyzed and used for building an error-reporting system, for teaching medical students and residents, and for building a tool for practitioners seeking the best information. The absence of such activities supports the IOM conclusions and perhaps provides insight into the challenges that lie before physicians searching for evidence-based information.

An effective use of technology, an appreciation for patients as customers, a talent and interest in learning more about patients' real questions and needs, and an understanding of knowledge systems as constructs of interrelated pieces of information are marked

strengths of medical librarianship. The ability to view information as a component of a larger whole and as valuable based on being up to date, accessible, and authoritative are inherent parts of the medical librarian profession. There is no question that medical librarians can participate in this call for health care restructuring and will contribute in ways that are unique to the profession. In this context should a consideration of the informationist be undertaken.

THE CALL TO CREDENTIAL

As might be expected, a call for a new professional, especially one who would be credentialed to take a place of equal status with other members of the health care team, quickly captured the attention of the medical librarian community. The presentation of a new career path to deliver many core functions of medical librarianship in a nationally renowned physician publication was dramatic. For years, the *Bulletin of the Medical Library Association (BMLA)* has effectively related Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and Integrated Advanced Information Management Systems (IAIMS) objectives to library objectives and provided insights for medical librarians seeking to position themselves for success in an increasingly performance-driven health care environment. Yet, as much as librarians agreed that knowledge-resources and professional staff trained to deliver them were essential to promoting quality medical care, there was still some disagreement regarding the importance of certification of professional staff.

What indicates to the broader health care community that medical librarians can, in fact, capably function on a health care team? Is it membership in the Academy of Health Information Professionals? A case for this would be awkward, because many in the profession view it as a mere peer-recognition device. In fact, the Task Force to Review the Academy of Health Information Professionals appointed by the Medical Library Association (MLA) Board of Directors in 1995 reported in the October 1997 *BMLA* that a survey of MLA membership found that the academy did not serve "as a mechanism to certify the competency of MLA members," nor did it have much "impact with employers, especially in terms of economic benefits." At the same time, it was agreed that the academy program achieved its two intended purposes as a "professional development and career recognition program" and "reward [for] the personal investment of time and effort required for exemplary professional performance and contributions to the profession" [6].

MLA currently has 3,700 individual members, of which only 1,245 belong to the Academy of Health Information Professionals. This 33% rate has held steady over the last three years with normal fluctuations in the MLA membership. Participation by one-third of

the membership in a key MLA recognition program—which includes, as part of the process, the identification of core competencies and maintenance of professional development—is unimpressive.

An informal email discussion list survey conducted by Shearer and Capitani prior to a Philadelphia Regional Chapter of MLA program in December 1997, generated some twenty responses and interesting anecdotal confirmation of the task force study. Several academy members noted that one of the primary benefits of membership was institutional and peer recognition. When pressed for thoughts about whether the medical library profession supported the academy, one respondent noted that many "great" librarians were not academy members, and another commented that "many older librarians don't want to bother with it." It was further noted that JCAHO did not acknowledge the credential; procuring a medical library job did not require it; and MLA did not require it for membership [7]. In short, the people and the organizations to which many in the profession look for leadership apparently did not think the academy was of much practical value.

Plutchak, editor of the *BMLA*, in his October 2000 response to the *Annals of Internal Medicine* editorial, urged MLA members to play leadership roles in a national discussion of the informationist concept [8]. Key participants in a national forum would include the Medical Library Association, the National Library of Medicine, the American Hospital Association, the American Association of Medical Colleges, and perhaps others such as the Healthcare Information and Management Systems Society and the American Medical Informatics Association.

PHILADELPHIA REGIONAL CHAPTER, OF THE MEDICAL LIBRARY ASSOCIATION (MLA) HOSTS OCTOBER PANEL

For its fall meeting held on October 17, 2000, the Philadelphia Regional Chapter invited Frank Davidoff, M.D., Valerie Florance, Ph.D., Ellen Detlefsen, D.L.S., and Julie McGowan, Ph.D., to present a panel discussion, "The Medical Informationist and Other Roles for the Librarian in the 21st Century." A detailed transcription and notes from this panel discussion, including comments from the audience, may be found on the chapter's Web page [9].

Florance defines an informationist as one who is "cross-trained in medicine, computer science and information science" and, therefore, comfortable crossing interdisciplinary boundaries. Davidoff and Florance both have previous positive experiences working in health care environments where this type of cross-training was incorporated into the delivery of direct patient care. McGowan, a professor of knowledge informatics and member of the MLA Board of Directors,

also sees the medical librarian functioning most effectively when these services are provided at the point of need in the hospital, at morning report, or on rounds. Detlefsen, who is on the faculty of the School of Information Sciences at the University of Pittsburgh and coprincipal investigator on a 1996–1997 National Library of Medicine Planning Grant for the Education and Training of Health Sciences Librarians, urged the group to think more broadly and to consider adding informationists to administrative and research teams.

As discussed during the program, there was little disagreement inside the profession, as well as outside the profession, that active participation by medical librarians would result in better patient care. However, as Davidoff asserted, clinical librarianship programs, by and large, have failed to take root. Of the approximately 6,500 acute care hospitals in the United States, Davidoff estimated only a couple of hundred had implemented a clinical librarianship program. One reason for this low number was similar to that cited by the Institute of Medicine in its report detailing causes and cures for widespread medical errors: there was no financial incentive built into the system that acknowledged the need to, or facilitated, change in behavior. Several ideas for providing this financial incentive were presented, including writing informationists into grants; proving the value of information in reducing costs and improving outcomes to the Health Care Financing Administration (HCFA) who, in turn, would reimburse hospitals for information, such as lab and radiological tests are reimbursed; and writing knowledge-based information costs into telemedicine grants designed to deliver a wide spectrum of medical information to underserved areas. The Agency for Healthcare Research and Quality (AHRQ), as well as the National Library of Medicine, were offered as potential funders of research studies to demonstrate the effectiveness of having an informationist on staff.

Some problems were noted throughout the panel discussion. For instance, large hospitals often turn to information brokers and not medical librarians, who are better suited and more familiar with a hospital's needs, for information required to meet quality-assurance objectives. Also, there is a lack of adequate career counseling for science and biology majors in undergraduate colleges who may otherwise enter health sciences librarianship programs; instead, Detlefsen notes that many of her advisees are uncertain of areas most suitable for specialization and seemed to focus mostly on eliminating areas they do not want to pursue. A third problem noted is a failure in the medical library community to acknowledge and address the challenge of a few hospital librarians who do not want to be an active part of the health care team and who, instead, focus on reporting library-use statistics as the primary measure of quality. While use statistics are not trivial, hospital librarians must shift their focus from library-

use statistics to the larger-picture approach required by the JCAHO. How does the information delivered by the hospital librarian affect the level of care delivered by the hospital's information management plan overall? There is a desperate need for hospital librarians to be able to convey effectively that delivery of the best information results in the delivery of the best medical care by the institution. This affects the bottom line by any hospital administrator's definition.

While there may be uncertainty about the informationist concept, there is certainly intense interest in the medical librarianship profession in growth and in ways to strengthen the profession in upcoming years. One librarian in the audience on October 17 was troubled by the suggestion that librarians "teach physicians to do our jobs, giving away our best stuff so someone else can make a lot more money at it." This is a good time for medical librarians to identify our "best stuff." An editorial written by Rein, a University of Illinois Library and Information Science student, "The Culture of Medicine and the 'New Informationist,'" appeared in the *National Network: Newsletter of the Hospital Libraries Section of the Medical Library Association*. Rein is a self-described observer of the medical culture throughout a twenty-year career in biomedical research as a doctoral educated researcher. She has worked closely in basic medical science and clinical settings and offers some insight into the practicality of the informationist concept. Rein says it best:

The assumption is that if the knowledge needs of the physician that arise at a single point in time are met, so will be the needs of the patient and of the medical field as a whole. One does not necessarily follow the other . . . Just like physicians, patients have other medical needs before, during and after, a point-of-care event . . . A successful knowledge-based management system delivers both personnel and systems to the right place at the right time in the right format.

She echoes Davidoff's statement about physicians' eagerness for someone to provide relevant, quality-filtered information when she says,

although physicians tend to shun outside interference in the presence of their patients, they certainly are willing to deal with any professional who can bring better quality of medicine to their clinic . . . They certainly recognize value when they see it, no matter how ambivalent they are to accept it. More than ever, the culture of medicine needs an injection of new ideas and methodologies to properly deal with their information needs. [10]

Davidoff and Florance, in their editorial, have joined hands to generate discussion on the meeting of the cultures of medicine and librarianship. Davidoff suggested that to take the discussion into the next stage required some understanding of the diffusion of innovations. Davidoff deferred to Rogers as a key expert in this area and supported Rogers' claim that, even if

an innovation is proven to be an improvement on current practice, it would not take root without an intensive, social effort. Davidoff made a strong case for the library community to lead this intensively social process.

THE PATIENT AS CONSUMER

"The patient as consumer" is a common phrase, but as yet the extent of patient interest in obtaining and using medical information has not been presented. In 1999, the Deloitte research group published two reports in conjunction with its research partner, Cyberdialogue, "Emergence of the E-Health Consumer" and "Winning the Loyalty of the E-Health Consumer: Building an E-Business Roadmap." Based on survey results, the first report stated that "after visiting Internet health sites, 21% of respondents reported increased compliance with prescriptions; 30% said they visited a doctor; 42% made a treatment decision; 43% asked their doctors about a prescription; and 47% urged a family member to visit a health care provider" [11]. A Harris Poll reported that fifty-four million American adults had used the Internet for health information as of June/July 1998. By November 2000, this number had nearly doubled to 106 million [12].

Deloitte asserts that the Health Insurance Portability and Accountability Act's (HIPAA's) derivative legislation will yield a "virtual voucher" system, in which consumers will demand more information to make better decisions in selecting health insurance coverage options and in making decisions as partners in their own health care. However, the survey also reveals a total lack of interest in paying for content. Rather, "basic information is simply a welcome mat—the ante to play in the game" [13]. Deloitte presents very convincing evidence that health care systems and physicians are not stepping up to the plate, even though there could be negative financial consequences for not doing so quickly and before someone else does. It seems that not just anyone will do either: patients are loyal to their physicians and want information to come from them.

How can physicians cope with this increasing desire by patients to talk when they are already knee-deep in paperwork? Perhaps the bluntest article of its kind, "'Internet-Positive Patients' Driving You Crazy?" warns against exhibiting paternalistic and dismissive behaviors in responding to patients armed with medical information located from the Internet [14]. At the same time, Shalala, secretary of Health and Human Services during the Clinton administration, urges patients "to find and use reliable health care information. Ask your doctor or nurse, use your library, explore the Internet." She advises patients to "Ask your doctor if the treatments he or she recommends are based on the latest scientific evidence" [15]. It seems doubtful that

patients will ask this type of direct question about the evidence used to deliver treatment, unless their physicians specifically encourage them to do so.

THE PHYSICIAN AS CONSUMER OF TECHNOLOGY

Kassirer, in "Patients, Physicians and the Internet" [16], notes that "many patients are beginning to use online communications and are dragging their doctors along." Few physicians need to be told that the Internet revolution has arrived and that they need to make more use of it to communicate with patients. However, a few key forces appear to play a powerful role in the slow adoption of the technology: lack of physician time to adopt it or even learn about it, concerns for privacy that may be addressed via HIPAA, lack of integrated systems, and lack of financial incentive.

The American College of Physicians-American Society of Internal Medicine conducted a survey of its membership in 1998 and found that "Less than 19% of respondents had partial or complete electronic clinical functions in their offices." In addition, respondents wanted to "enhance their knowledge of computer-based information sources for patient care" [17]. Admittedly, physicians' uses of computer technology and the Internet are on the increase. Still, there is little dispute that Internet use in an integrated, organized way to deliver health care services or to communicate with patients is limited.

Even medical students, who have graduated during a time when information has been at its most accessible and who more or less grew up with the technology to access the information, have a little trepidation when reporting their comfort levels with computer-based information sources. The Association of American Medical Colleges (AAMC) administers a questionnaire to medical school students upon graduation and reports the data in an annual All Schools Report. When asked if "students were expected to demonstrate use of current evidence-based information in patient care," 72% in 1999 and 74% in 2000 agreed or strongly agreed. The rest either had no opinion or disagreed. Approximately 26% of the students believed that instruction in "literature reviews/critiques" was inadequate in 1999, and more than 27% believed the same in 2000. Almost all (over 92% for both 1999 and 2000 graduates) agreed that they were "confident in carrying out reasonably sophisticated searches of the medical information" databases. Does this mean that graduates are confident that they can locate reviews of the literature but do not feel that they learned how to critique them, or does this mean that they entered medical school already possessing these skills? Only 43% in 1999 and 48% in 2000 agreed or strongly agreed that they understood "how information technology can be used to develop, implement, and mon-

itor compliance with clinical pathways and other forms of patient care protocols" [18]. These data seem to support a need to integrate medical informatics more fully into the curricula. In other words, the training that future internal medicine colleagues are interested in receiving may or may not come from within the profession itself.

The Medical Informatics Advisory Panel drafted the Medical School Objectives Project: Medical Informatics Objectives at the request of the AAMC. The advisory panel identifies five roles played by physicians—lifelong learner, clinician, educator/communicator, researcher, and manager—and identifies medical informatics learning objectives required to support each role. The objectives are insightful and comprehensive and reflect some of the skills already incorporated in master's level programs in library and information science [19].

THE VALUE OF STANDARDS

A review of quality assurance standards is appropriate here, but a lengthy one is not practical. Librarians and patients alike have strong support in place when it comes to addressing and assessing standards of care by hospitals and managed care organizations. The well-known National Committee for Quality Assurance (NCQA) evaluates and rates managed care plans and publishes the results of surveys as the Health Plan Employer Data and Information Set (HEDIS) Health Plan Report Card. Incorporated in the NCQA survey are some questions from the AHRQ Consumer Assessment of Health Plans (CAHPS) questionnaire. Consumers are asked about satisfaction levels related to locating and understanding information provided by health plans, as well as about customer service experiences with health plans and physicians. Though consumers are not asked directly about receiving and understanding medical information appropriate to meeting specific needs, interest in access to, use of, and communication of quality-filtered medical information is implied throughout the NCQA survey. For instance, NCQA "looks for evidence that health plans' decisions about medical treatment and service are based on acceptable standards for medical practice," and the CAHPS focuses some attention on the nature and quality of the patient-physician interaction [20, 21].

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) accredits 20,000 health care organizations including acute care hospitals, clinical labs, health care networks, ambulatory care organizations, and home health agencies. Started by the American Hospital Association, the American Medical Association, and the American College of Physicians in 1951 as the Joint Commission on Accreditation of Hospitals (JCAH), JCAHO has grown in influence over the years and wields considerable power over the in-

stitutions it accredits. When Medicare was initiated in 1966, for instance, it was determined that JCAH standards were so broad that compliance with JCAH standards automatically meant compliance with Medicare standards. JCAHO publishes results of its survey for the world and consumers to see.

Though information management is woven throughout the standards, patients can easily and quickly scan the list of standards for a given hospital on the JCAHO Website that reports accreditation results and learn how it stacks up on "Patient and Family Education." The most obvious measure, though again not the only measure pertaining to information delivery, is called "Literature to Support Decision Making." It is interesting to note that this measure often receives high scores. However, *owning* the literature does not provide much insight into how effectively the literature is *used* to support decision making.

The early JCAH required a hospital library as a physical entity with standards specific to writing policies, collecting core medical text and reference books, and employing master's of library science-degreed librarians. Hospital administrators, who seldom crossed the threshold of libraries, began visiting libraries in earnest prior to JCAH visits, leaving as suddenly as they had arrived, assured that the hospital libraries met the standards. JCAH visiting teams came and went, after glancing quickly into libraries and at the librarians who had, by then, absorbed the collective anxiety of the institution concerning the visit. At this point in the development of hospital librarianship, the JCAH was viewed favorably, as a proponent for the existence of hospital libraries.

Dalrymple and Scherrer provided a review and insight into the 1994 JCAHO standards, developed as an Agenda for Change. The Agenda for Change focused on mission and institution-wide functions versus individual department standards. The 1994 standards removed the requirement to have a physical library but were again modified in 1996, owing to the efforts of MLA's JCAHO Information Task Force. The modification acknowledged the role of professional librarians in achieving organizational objectives related to information management. By then, some damage had been done, and, unfortunately, some librarians have not yet realized that rather than being shut out of the process, they are now, in fact, integral to many parts of it. As Dalrymple and Scherrer concluded, "rather than restricting his or her role to supporting the library as a physical or organizational unit, accreditation reviews present the health sciences librarian with a variety of opportunities to bring professional expertise to ongoing assessment and the development of best practices" [22].

Schardt delivers a review of several sections of the JCAHO standards that pertain to delivery of knowledge-based resources. As a profession, librarians have

barely scratched the surface of fully integrating our services and functions within our institutions, and we are bound only by our own narrow assumptions of our skills and roles within our institutions. In addition to the rather cryptically reported "Literature to Support Decision Making" JCAHO standard, there are opportunities for librarians to provide patient education, hospital staff education, data and data analysis services for improving organizational performance, leadership through active participation as organizational leaders or department heads, and many other opportunities if we look for them [23].

Doyle in "IAIMS and JCAHO: Implications for Hospital Librarians" links IAIMS and JCAHO frameworks, noting that "IAIMS goals and JCAHO standards will require a new set of skills, knowledge, interpersonal, and informal network connections, even new job descriptions and reporting structures for librarians" [24]. This view is in line with Davidoff and Florance's vision for a new professional.

The vast amounts of data generated by all of the organizations, agencies, and institutions reporting or working toward compliance with a variety of standards have provided remarkable opportunities for all. Consumers can search and sometimes even sort results from Internet searches on JCAHO compliance, HEDIS surveys, and national or state data from the Nationwide Inpatient Sample (NIS) and State Inpatient Databases (SID). Of special note is HCUPnet, standing for Internet access to data from the AHRQ's Healthcare Cost and Utilization Project (HCUP). HCUPnet provides access to NIS and SID data on morbidity, mortality, length of stay, and costs, further described with demographic data on patients, information about hospitals, and standardized codes. These standardized codes include, but are not limited to, the ICD-9-CM codes for diagnoses and procedures. Some states have customized search engine results from their SIDs to deliver data specific to their states [25-27].

There are also datasets such as the National Hospital Discharge Survey from the National Center for Health Statistics (NCHS) and the American Hospital Association Annual Survey of Hospitals. Add to these the evidence-based databases and initiatives, and we can see why the word convergence is used so frequently to capture the drama and energy of the electronic era. For those of us who manage data and often look for ways to mine it for maximum benefit, the time is ripe for looking at adding data elements that note use of knowledge-based evidence during the patient care process and for analyzing its use in avoiding errors, shortening hospital length of stay, and delivering better outcomes for patients.

In 1978, MLA formed the Hospital Library Standards and Practices Committee, which, in turn, developed and published the *Minimum Standards for Health Science Libraries in Hospitals* in 1984. Prior to this, the

Hospital Library Standards Committee—in conjunction with the Association of Hospital and Institution Libraries, the Catholic Library Association, the Medical Library Association, the Special Libraries Association, and the American Library Association—developed and disseminated the *Standards for Library Services in Health Care Institutions* in 1970. Standards of this nature are essential to our profession, because they provide all practicing librarians, many working as the only librarian on staff, with guidance and support. These early documents formed a foundation from which the 1984 and 1994 *Standards for Hospital Libraries* were derived. Through these resources and articles such as Topper et al.'s 1980 *BMLA* guide, we can gain an understanding of the struggle, as well as the leadership that arose to meet the challenges, during the relatively new age of electronic access to medical information [28].

"Hospital Library Service and the Changes in National Standards" reported an interesting set of data from surveys conducted in both 1989 and 1994 relative to compliance with both MLA and JCAHO standards. Of particular interest was the perception by library staff that compliance with JCAHO standards was lower than was actually the case, when measured using criteria associated with the MLA standards [29].

In his 1982 editorial in the *Annals of Internal Medicine*, "Do Hospitals Need Libraries," Davies makes an impassioned case for maintaining medical library service, though the Department of Health and Human Services was considering eliminating it as a requirement for receiving Medicare reimbursements. He points to the whopping number of 852 and growing MEDLARS terminals in community hospitals and states, "Contrary to the belief of some short-sighted hospital trustees, libraries are not shrines to culture. They are, in fact, necessary parts of any well-run modern hospital committed to excellence in patient care. . . . All hospitals should be moving forward into the new age of information, not backward into the nineteenth century" [30]. Shall we say now, that all hospitals should be moving forward into the new age of the Internet and the electronic health consumer and not backward into the twentieth century?

In the October 1999 issue of the *BMLA*, medical librarian Holtum reminds us that our central role may not be to get busy clinicians to do their own literature reviews, especially if they are not trained or comfortable in doing so. Holtum points precisely to the same argument Davidoff makes about physicians not necessarily being trained or having the time to read their patients' X rays. He reminds us that

though the clinician is certainly capable of learning and performing these tasks (though at considerable time and expense), higher quality and greater cost-effectiveness are obtained by using the skills of specialists instead. Can the same

not be said for the expertise and experience that librarians bring to the health care enterprise? . . . From a purely cost-effective standpoint, does it make sense for a clinician to spend half an hour formulating a strategy of questionable validity, when a librarian could execute the entire search in ten minutes with better results? [31]

We have a lot to think about and to debate as we enter an electronic era that has grown beyond even our own ambitious expectations. Hospitals are required to integrate information management objectives that must include librarians. Physicians are desperate to make use of technology but have little time and energy to devote to this pursuit, all the while being "dragged along" by their patients, who themselves are desperate for information. Electronic information is plentiful, and the Internet does freely deliver some very credible, non-peer reviewed information. Much of the credible information, however, is costly, and publishers have us in the crosshairs, charging by the number of potential users, by the number of simultaneous users, and by any measure that yields them the most profit.

This series of articles will present state-of-the-art reviews of different aspects of medical librarianship and will help set the stage for a national, interdisciplinary discussion. Before us is the opportunity to get to the heart of what medical librarians can contribute to the patient care team by looking at the needs of patients, needs of physicians and other members of the health care establishment, roles medical informationists may play in development of a post-IAIMS information management infrastructure, current skills and workforce issues for medical librarians, and education and training solutions.

The first article in this series is designed to set the stage and to remind us that one of the primary reasons for our profession, and the reason most of us choose the profession, is to serve patients. Calabretta in her article, "Consumer-Driven, Patient-Centered Health Care in the Age of Electronic Information," calls attention to patients, senior citizens, friends, and family members concerned for the health of loved ones, parents, and children of adult parents, who find an unprecedented amount of health information at their fingertips via the Web. At the same time, these newly rich possessors of health information yearn for contact with physicians who will answer their emails and offer them refuge when lost in an overwhelming amount of data and medical advice. Health information consumers are even in a position to add to the knowledgebase on disease therapies as they share information with one another in chat rooms and as they create health Websites. It seems that everyone can be a consumer, a mentor, a publisher, and a knowledge worker. Calabretta speaks of partnerships between public librarians and medical librarians, between physicians and

patients, as together we strive to attain an awareness of the unique opportunities before us.

Wolf, Chastain-Warheit, Easterby-Gannett, Chayes, and Long present readers with an overview of hospital librarianship. Entitled "Hospital Librarianship in the United States: At the Crossroads," the article reviews the historical progress and current practice of hospital-based clinical librarianship. A number of case studies and snapshots show that though hospital librarians are creatures of their environments, their environments can be enriched dramatically by their presence. Why do some clinical libraries fade away and others thrive? What are some common themes of people and place that differentiate the survivors from those that lack the energy required to weather inevitable and regular budget crises? More important for the future, how can we learn from our successes to achieve permanent status as members of the patient-care team? As we build on the best we have to offer, we must do so with the confidence that our core competencies are unequalled by related professions. The authors of this article argue passionately for reconsideration of the informationist as a reconsideration of hospital-based clinical librarianship.

The third article in the series emphasizes the establishment of a peer relationship that comes into play only when the information professional is an integral part of the health care team at the point of need. Florence, Giuse, and Ketchell, in "Information in Context: Integrating Information Specialists into Practice Settings," present the idea of a practicum, not conducted in a library setting, but serving as a sort of apprenticeship where students in a health care setting join their mentors as peers upon completion of their apprenticeships. Both clinical and bioscientific case studies are described and presented as working prototypes for this new type of information specialist. The case studies are successful in bringing this concept to life, because they describe programs that have matured and succeeded in their own rights. Benefits to the profession and to each participating institution are included, along with lessons learned along the way. Academic health sciences centers are presented as natural homes for contextual learning and as possessing both the infrastructure and culture required for supporting a developing health informationist program.

Next, Detlefsen provides a review and summary of health sciences librarianship education in the United States in "The Education of Informationists, from the Perspective of a Library and Information Sciences Educator." Understanding the objectives behind recent efforts by the National Library of Medicine, library and information sciences programs, and medical informatics programs to train professionals needed to fill a vacuum helps put the recent informationist proposal into perspective. Five case studies are presented to bring to life several career paths open to professionals pos-

sessing health care and library and information science backgrounds. Detlefsen offers several ideas for planning, among them a joint effort by the Medical Library Association, the American Medical Informatics Association, and the Association of American Medical Colleges to accredit informationist programs or a joint board of national examiners for certifying informationists.

Byrd, in his contribution, "Can the Profession of Pharmacy Serve as a Model for Health Informationist Professionals?" provides a fresh insight into what he terms "health information care" by drawing a parallel with a recent migration by pharmacists into a "pharmaceutical care" model. In response to a need by the health care team for a professional peer capable of setting or changing the course of drug therapy, the pharmacy profession planned and successfully implemented the pharmaceutical care model. Byrd compares the professional training, work environments, practice roles, and philosophies of pharmacists to those of the newly created doctors of pharmacy, alongside a similar treatment for librarians and informationists, in a most credible and practical way. The description of the pharmaceutical care movement, requiring new and practicing pharmacists to take on expanded clinical roles, resonates with many of the ideas being exchanged about educating entry-level informationists and providing transitions for practicing librarians into health information practice. Drawing these parallels provides some interesting possibilities for pharmacists and health informationists to collaborate on medication safety and patient outcomes initiatives.

Hersh in "Medical Informatics Education: An Alternative Pathway for Training Informationists," discusses the rapidly maturing field of medical informatics and offers it as a viable path to the informationist profession. Hersh notes that there is no single core curriculum that is widely accepted as preparatory for holding a position as a medical informationist, and, indeed, there is no unique job description currently identified for a medical informationist. However, training programs funded by the National Library of Medicine in this broad-based discipline and programs, such as the one Hersh heads at the Oregon Health & Science University, produce professionals prepared to apply their knowledge to a number of pressing information-technology issues facing health care today. Because the health care system is desperate for skilled professionals who understand the culture and practice of medicine, as well as possess the ability to organize and extract information as evidence-based knowledge, Hersh urges us to move quickly. He recommends that the two fields of medical librarianship and medical informatics work together to identify the skills required to meet the health informatics needs of the health care system. Once the skills are identified, he argues, each

profession adds enough to the mix to be in a position to offer viable career paths to the same new profession.

The concluding article by Homan and McGowan reminds us that the objective of delivering quality information is the cornerstone of our profession, as we enter the second century of MLA's existence. Though an awareness of and urgency to reinvent ourselves is undeniable, we must do this by mindfully building on traditional strengths that helped define our profession during the first one hundred years. These strengths revolve around our ability to acquire, organize, and access knowledge-based resources. With these core competencies at the center of our profession, additional skill sets may be added that will allow for movement by our members into a rich and diverse assortment of career paths. This may involve some retooling by practicing librarians and restructuring of professional degree programs, as well as taking a courageous new look at credentialing. We have many challenges before us. We are prepared to participate fully in the national dialog proposed by the Institute of Medicine, so that we might all cross the "quality chasm" together.

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