Current Comments®

The Impact of Hospital Libraries on the Quality and Cost of Health Care Delivery

Number 8 February 21, 1983

Last September, the Health Care Financing Administration (HCFA) of the US Department of Health and Human Services rewrote the federal requirements for hospitals to participate in Medicare and Medicaid programs. The proposed changes are intended to give hospitals more flexibility in delivering quality health care to patients at a lower cost.[1]

The new rules were published in the *Federal Register* on January 4.[2] One *proposed* change deletes the requirement that hospitals maintain and staff a medical library. Apparently, the HCFA considers hospital library services to be a costly requirement that has no impact on quality health care. In fact, an in-house HCFA memorandum stated, "While the availability of current literature may be useful, there is no evidence that the deletion of this standard [on medical libraries] would result in risks to patient health and safety."

The HCFA opinion of hospital library services is misinformed, to say the least. There *is* considerable evidence that hospital library services contribute to patient health and safety. The HCFA plan to delete federal requirements for hospital libraries is misguided—medical care costs will increase, not decrease, as a result.

Many studies have evaluated clinical medical library (CML) programs in various hospitals.[3-12] In the CML program, a medical librarian acts as a member of the clinical team of doctors, residents, interns, nurses, and other health care professionals such as pharmacists and social workers. The librarian attends the morning report, where cases of newly admitted patients are reviewed. The librarian may also accompany the clinical team on their rounds in the hospital wards. The clinical librarian notes questions or problems concerning patient care that are raised, and researches these topics immediately in the hospital library. Relevant literature is then delivered to the clinical team on the same day.[13,14]

The studies I referred to above indicate that CML programs provide "immediate benefits in the areas of patient care and research, and undergraduate, graduate, and continuing medical education."[15] Clearly, HCFA administrators were unaware of these studies when they claimed there was "no evidence" that hospital libraries have an impact on patient care and safety. Thus, it is important to review in detail how the CML programs affect patient care.

Georgia Scura and Frank Davidoff, University of Connecticut School of Medicine, examined the CML program at that institution's health center.[16] They selected 50 information requests at random out of 287 searches completed over five months. House officers who received the information were interviewed. When asked if they had read the literature that they were provided, 92

percent answered yes. And 86 percent stated that the current literature was a source of new information.

More important, 20 percent of the house officers asserted that the current literature "directly influenced management of specific patients."[16] That is, the literature obtained from the hospital library had a *positive* direct impact on the way patients were diagnosed and treated. All of this, I might add, is in addition to other benefits of hospital library services, such as continuing education.

When placed in context with other hospital "information services," a 20 percent rate of effectiveness for the hospital library in delivering directly relevant information on patient care is outstanding and remarkable. Scura and Davidoff cited earlier studies indicating that admissions screening laboratory tests benefited only about one in 1,000 patients. Also, laboratory tests ordered during the hospital stay altered treatment in only *five* percent of all patients. The authors acknowledged that direct comparisons are problematic. But they concluded, "Efficiency, here defined as ratio of effectiveness to costs, may be at least as great for the management information provided by case-related searches as for comparable information from the clinical laboratories...."[16]

This finding is confirmed in other evaluations of CML programs. For example, a physician at McMaster University Health Sciences Center, Hamilton, Ontario, stated, "I found that having the key article is as important as having the lab investigation reports."[17] Of the physicians who relied on the CML program at the center, 83 percent claimed the librarians located "useful information that they would not otherwise have found."[17] Significantly, the majority of information requests by physicians were directly applied to managing patient care.

An important innovation in medical library services was recently made at the Beth Israel Hospital, Boston. Gary L. Horowitz and Howard L. Bleich developed PaperChase,[18] a minicomputer literature retrieval system with a data base of 400,000 references to journal articles in the Beth Israel medical library. The PaperChase program is so "user friendly" that any untrained user can access and search the data base without reading a manual, obtaining instructions, or relying on the assistance of a librarian.

In the first year of its operation, 1,200 medical students, house officers, and practicing physicians conducted 10,700 searches on PaperChase.[18,19] Patient care was given as the reason for 44 percent of the searches. Research accounted for 30 percent and teaching for 22 percent of the PaperChase searches.[18]

In the second year, 1,600 users conducted 11,500 searches, and in the following year, 2,200 people completed almost 17,000 searches on PaperChase. Unfortunately, the authors didn't report the percentage of searches over the last two years that were for patient care and management information. But they report a medical student's comment that literature retrieved from the PaperChase data base "probably saved his patient from further hospitalization and parathyroid surgery."[19]

Another important finding in the PaperChase experiment is that computerized information retrieval services increase library use. That is, once you know there is a relevant article in the current literature, you'll want to have access to it in a library. In the first year, PaperChase users printed about 147,000 references displayed on the terminal. The number of printed references almost doubled to about 270,000 in the third year. Although terminals were available throughout the hospital as well as in its library, the largest increase in terminal use occurred in the library.[19] This indicates that more people were using the library.

Physicians are not the only health professionals who rely on the hospital li-

brary for information applied to patient care. Nurses, technicians, pharmacists, social workers, and administrators also use the hospital's information services. For example, 38 New England hospitals using the National Library of Medicine's MEDLARS data bases were surveyed in 1982.[20] Of the 4,700 MEDLARS searches conducted over a three-month period at these hospitals, 56 percent were requested by physicians. But nurses requested 17 percent of these searches, allied health professionals accounted for 11 percent, and administrators and their support staff for seven percent. Significantly, 49 percent of the 4,700 MEDLARS searches were requested for information applied to patient care. Nineteen percent were applied to education, 15 percent to research, and nine percent to administrative management.

At the McMaster University Health Sciences Library, 40 percent of the information requests came from physicians, 15 percent from nurses, and 21 percent from allied health professionals, including administrators. Interestingly, patients and their families accounted for 24 percent of information requests at the library.[17] Patient education is one of the most important new needs that hospital libraries are serving. Patients have a right to know about their condition in order to consent to treatment. The hospital library helps to make patient consent more informed. In addition, the hospital library provides patients with information on how to stay well—preventive medicine is a crucial strategy to keep hospital costs down.

In addition to improving patient health and safety, hospital libraries help reduce medical costs, a little-recognized fact. The current literature communicates the latest advances in diagnosis and treatment. Often, this lets health professionals decide which tests and procedures are, or are not, recommended, and which are the most efficient for the case in question. Any time an unnecessary test is avoided, or a more relevant one is applied, costs are reduced for the patient, the hospital, the insurance companies, and ultimately the taxpayers who subsidize Medicare and Medicaid.

Also, hospital libraries allow the entire staff to split the cost of expensive journal subscriptions. If hospital libraries are disbanded, every individual physician will be obliged to pay for the journals out of his or her own pocket.[21] Even if the costs are written off as a deduction, the taxpayer will have to subsidize the difference.

More important, the current literature gives physicians access to a great many more expert opinions than are available among the hospital staff. Instead of relying on the advice of a few colleagues in the hospital, the physician can consult hundreds of clinical authors via the hospital library. Out of the consensus of opinion in the current literature, all health professionals can arrive at a more balanced perspective on any issue in medical treatment and diagnosis.

This point is especially relevant in rural hospitals with small staffs and few, if any, university affiliations. Ironically, rural hospitals will be the ones affected by the HCFA proposal. Of the nearly 7,000 hospitals in this country that participate in Medicare and Medicaid, about 1,500 are accredited by the HCFA and 5,500 by the Joint Commission on the Accreditation of Hospitals (JCAH) or the American Osteopathic Hospital Association (AOHA).[22] JCAH and AOHA accredited hospitals automatically meet federal rules for Medicare and Medicaid eligibility. At present, the JCAH and AOHA still require their hospitals to have medical libraries.

But the majority of the 1,500 HCFA accredited hospitals are rural facilities with fewer than 50 beds. If the HCFA proposals are approved, many of these rural hospitals might decide to cut costs by abolishing their library services. I'm afraid this short-term gain will have unfortunate long-term consequences—as

their medical staffs become less aware of clinical advances reported in the current literature, patient care will suffer and costs will continue to escalate.

I'm even more afraid that administrators of hospitals now accredited by the JCAH and AOHA will decide that the HCFA regulations are easier and less expensive to meet. They might discontinue their voluntary association with JCAH or AOHA and opt for HCFA accreditation. I should point out that the HCFA proposes to delete many more requirements in addition to the hospital library provision. For example, the new rules would eliminate standards on autopsies, reporting communicable diseases, and providing social services, among other things.[1,2] The entire HCFA deregulatory package may compel budget-conscious hospital administrators to defect from JCAH and AOHA standards.

The HCFA is on the right track, but it's moving in the wrong direction. Instead of retreating from its responsibility, it should advance to set national standards that ensure *quality* patient care. A necessary element in patient health and safety is access to health information services in a library. Hospital libraries are a tradition dating back to 1762, when the Pennsylvania Hospital in Philadelphia established the first one in the colonies.[23] The HCFA can't convince me that going back to the eighteenth century is progress in patient care.

The deadline for public comment on the HCFA rule changes is March 7. The HCFA needs to hear from people who have an opinion on this topic. Address your letters to: Carolyne K. Davis, Administrator, Health Care Financing Administration, US Department of Health and Human Services, Attn: B.P.P.-519-P, P.O. Box 17073, Baltimore, Maryland 21235. Copies of your letters should also be mailed to local hospital and medical associations. Even though Congress has no direct role in this issue at the moment, your representatives and senators should be made aware of your concerns as a constituent.

I would like to believe that the electronics revolution will make it possible for even the smallest hospitals to have access to computerized data bases, such as MEDLINE and *ISI/BIOMED®*. But I have recently pointed out that we are at least a decade away from electronic access to the original articles and books available in libraries.[24] Indeed, incredibly successful experiments like PaperChase[18,19] have shown that electronic access increases the need for local library collections. The very decision to obtain a terminal reflects the need for better information management.

The people at the HCFA have an unclear if not archaic view of what constitutes a working hospital library, or the various ways to provide these services, such as the circuit rider program discussed below. Every textbook of medicine is obsolete, in one form or another, as soon as it is published. Current journals are absolutely essential in the process of maintaining current awareness. And they must be housed in a local library, even if only for a few years. It is precisely where space is at a premium that one needs intelligent selection management. Even a part-time trained librarian can organize the hospital's scattered library resources while also providing timesaving information on demand for busy physicians. You don't expect technicians to prescribe medications for patients—why expect that a stand-in can do an adequate job in medical reference work?

It is unfortunate that the medical library profession, like the basic research community, has not adequately dealt with the economic impact of its services. I have been a member of the Medical Library Association (MLA) for more than 25 years. But I have never seen a proposal to study the economic benefit to doctors, or to the community, of a hospital library. Most of the literature I

have cited provides some evidence for the economic benefits of clinical library service. Nevertheless, we need a definitive study so that we don't have to rely on mainly anecdotal evidence. The National Library of Medicine (NLM), MLA, or other organizations such as the American Hospital Association ought to support such definitive studies. ISI® would be glad to participate in and support them.

Until such time as we can evaluate the cost-effectiveness of hospital library services with hard data, rural hospitals should not be penalized. Instead of encouraging them to cut the library from the budget, the HCFA should inform rural hospitals of innovations in providing access to current literature to their staffs. For example, E. Jean Antes described a "circuit library" program based at the Robert Packer Hospital, Sayre, Pennsylvania. Three medical librarians serve 19 hospitals and nursing homes in Pennsylvania and New York. The librarians travel more than 1,000 miles a week by car. They stop at the nursing stations, laboratories, pharmacies, and other departments at the hospitals in the circuit and pick up literature search requests. The requests are filled at the Robert Packer Hospital's library and delivered on the next regular round. In a one-year period, almost 13,000 books and articles were delivered to hospital staff.[25]

A hospital is no more than a collection of beds in a building if it doesn't have the basic services that define it as a hospital. There are certain facilities that can't be optional—the medical library is one of them.

Of course, my view of the importance of medical libraries is not totally unbiased. Indeed, I have a very old association with, and admiration for, the NLM.[26] But this does not mean that I am not occasionally critical of NLM policies. Last year, I was asked to testify in support of the Medical Libraries Assistance Act before the Senate Committee on Labor and Human Resources, and I was glad to do so. It was particularly in the area of aiding resource and collection development that I recommended a fivefold increase in funding of libraries, even if it meant that other programs were reduced or eliminated.

We should continue to upgrade our medical facilities by utilizing the most modern and efficient methods and technologies. The HCFA, and no less the JCAH and AOHA, should reformulate their standards to encourage hospitals to enter the electronic age of computerized information retrieval services in medical libraries.

I don't doubt that the HCFA seriously believes its proposed rule changes for Medicare and Medicaid eligibility are in the best interests of patient health and safety. But I have my own reasons to think the HCFA is both misguided and misinformed, and I hope they will hear them out. As an occasional patient, I know the value of getting a second opinion.

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My thanks to Alfred Welljams-Dorof for his help in the preparation of this essay.

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