That vision thing*

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The 1991 Janet Doe lecturer describes the vision held by the founders of the Medical Library Association of medical information being readily accessible to health professionals no matter how far they were located from major medical centers, and traces the pursuit of this vision to current outreach activities.

My interest in "that vision thing" is of long standing. A vision is intellectually interesting; but for me, turning a vision into a reality is the compelling challenge. An appealing vision emits an irresistible call for purposeful action. Over the years I have become fascinated with how visions are pursued as goals and how ideas are turned into useful products by individuals and organizations. I like action. I work to make things happen.

My interest in action might have surprised my parents who were forever saying, "get your nose out of that book." My mother was an elementary school teacher, and during the four years before my sister was born, I was her only pupil. After discovering that the letters printed on phonetic flash cards could be arranged to form interesting words and that a well-chosen selection of these expressed exciting actions and memorable descriptions, I devoured the output of hundreds of authors. Whether curled up in an easy chair, stretched out on the moss under forest trees, or lying on my upper bunk inches from the rain announcing its arrival on the tin roof, through books, I robbed the rich in Sherwood forest, dueled in medieval castles, waltzed in candlelit ballrooms, accompanied Richard Halliburton on a moonlit dip in the Taj Mahal reflecting pool, journeyed to the Amazon to observe the flora and fauna, and trekked through Tibet. Prompted by teachers, I followed generations between boudoir and battlefield in *War and Peace* and worked my way through histories, poetical outpourings, and the logic of philosophers. I savored those books that contained well-expressed descriptions of the world and insights into its people, the wonders and complexity of nature, and the glorious world of imagination and ideas, but those I enjoyed most included action.

As I grew older, I moved from reading to observing and appreciating the efforts required to get things done. You probably have encountered the observation that Americans as a group have creative minds but that they have difficulty turning ideas into products. U.S. creativity is highly regarded; we have many of the world's great research institutions. However, look at our struggling manufacturing industry and see how little we appear to value the people who turn ideas into products.

Turning visions into reality requires the imagination and energy of people. John Shaw Billings, first director of the National Library of Medicine (NLM) envisioned the library in the Office of the Army Surgeon General as a great national medical library, and he started on the path toward that vision. In 1956 the well-respected surgeon Dr. Michael DeBakey ensured that the vision became the law of the land. I was privileged to start my professional career with Louise Darling at the University of California–Los Angeles, another remarkable person who possessed imagination and energy and brought ideas to life. As you can imagine, working at NLM is enjoyable because so much happens there. It is fascinating to see strategies for fulfilling visions planned and implemented at local, state, national, and even international levels. Usually the initiation of a project requires the juxtaposition of the right person in the right place at the right time. This, however, is followed by a lot of work. Such is the fate of Doe lecturers, an idea followed by a lot of work.

The Janet Doe Lecture was envisioned by the anonymous donor of $500.00 of seed money for a lectureship on the history or philosophy of medical librarianship. I am neither a historian nor a philosopher, but the onus of fulfilling the objectives for this lecture prompted me, as it has preceding lecturers, to read some history. In that process I found a vision held and pursued by the founders of our association that intrigued me. This morning I'd like you to look with me at this vision and how it is related to current thinking. I will describe early efforts to pursue the

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vision, highlight related actions during the intervening nine decades, and close with a few personal comments.

It's the fall of 1897, McKinley is president, those seeking gold have rushed to the Klondike, George Bernard Shaw has found a public forum for his wit as the drama critic for the *Saturday Review*, the death of Johannes Brahms has saddened music lovers, Rodin is finishing the Balzac sculpture, and Major Ronald Ross has announced the solution to the mystery of the transmission of malaria. The two persons of particular interest to us are Dr. George M. Gould, editor of the *Philadelphia Medical Journal*, and Margaret R. Charlton, librarian of the medical school library at McGill University. They are composing a letter inviting prominent and interested individuals to a meeting to form an organization of medical librarians. One copy of Dr. Gould's letter is sent to Major James Cushing Merrill, a surgeon, ornithologist, big game hunter, and reader of thirteen languages, who has recently been placed in charge of the library of the Army Surgeon General's Office. Dated October 19, 1897, it reads

> Dear Dr. Merrill:
> It is suggested that an organization of Medical Librarians be formed in order to encourage the founding of new libraries, the gathering of books, etc. . . . [1].

Dr. Gould listed nine reasons for forming the organization. The first was that

> Conference and acquaintanceship between medical librarians would encourage improved methods of library-work, harmonize and unify plans of classification, cataloging, etc., whereby the world's medical literature would become more used by and more useful to the medical profession. The present independence and individualism results in much waste of literature and labor [2].

The remaining eight reasons focused on obtaining materials for libraries through such activities as an exchange system for duplicates, a system of collecting the libraries of deceased physicians, and working with publishers to obtain gifts and reduced prices.

I was unable to locate a copy of Dr. Merrill's reply, but the library that was to become NLM was not represented at the organizational meeting in Philadelphia on May 2, 1898. Also absent was Sir William Osler, but reports of the meeting indicate that both Drs. Osler and Merrill did send their regrets. Actually, Osler sent as his representative a librarian from the Johns Hopkins Hospital, Elisabeth Thies, whom he called Miss Thesis. At this organizational meeting, the eight physicians and medical librarians in attendance agreed to organize under the name of "the Association of Medical Librarians" with the objective to "encourage the improvement and increase of public medical libraries" [3]. Dr. Gould was unanimously selected president, but this selection was not universally well received. Following reports of the meeting, there was criticism that the association was being promoted by an individual who was not a medical librarian. This objection can't have been too widespread, as at least the titular leadership of the association was in physician hands for thirty-five years, until 1933, when Marcia C. Noyes became president.

Dr. Gould described his vision for the fledgling association to the small but significant group,

> I can imagine few things that are more pregnant with far-reaching influences than this little movement of ours. Surely a profound and magnificent role in the regeneration of the world is accorded and awaits scientific medicine. Just as certainly scientific medicine depends upon a rigid and thorough-going literary systematization of the results reached by the world's million individual workers. In no branch of human endeavor is there such an instant practical application to the needs of humanity as is ours, and in none may the findings of a solitary worker in Asia, Europe or America, be immediately needed by any other physician in a hamlet or hospital continental distances away. I look forward to such an organization of the literary records of medicine that a puzzled worker in any part of the civilized world shall in an hour be able to gain a knowledge pertaining to a subject of the experience of every other man in the world. It seems to me strange beyond all belief in the stage of civilization we have reached, when trade unions of a thousand kinds are local, national and international; when every place of human activity has recognized that the sine qua non of progress is organization and intercommunication, that the pricelessly precious results of research of medical knowledge should be given over to the rapine of commercialism, and to the barbarism of unorganization in which our medical libraries at present do not flourish. In saved lives and spared expense, our state and national governments would make money by devoting millions of dollars to establishing medical libraries in every city and village of the land [4].

Note that in 1898, before telephones and automobiles were commonly available, Dr. Gould had the vision of a health professional "one hour" from needed information. It is this 1898 vision, reiterated in concept nine decades later by NLM's planning panel on outreach chaired by Dr. DeBakey, that I want to examine this morning. What happened to the pursuit of that vision? What differences do the advances in computer and telecommunications technologies make in achieving that vision? What happened to outreach as an objective of our association?

EARLY EFFORTS TO ACHIEVE THE VISION

As with most visions, more than one person is involved, and these people are not always working together. Three months before the May organizational

meeting, Dr. Charles David Spivak in Denver, Colorado, initiated a journal called *Medical Libraries*, with the Oliver Wendell Holmes quote "Libraries are the standing armies of civilization" below the title. In the first issue he published the aims of the journal [5] and mentioned a letter he wrote entitled "How Every Town May Secure a Medical Library" [6].

Dr. Spivak, a Russian by birth, moved to Denver in 1896 from Philadelphia where, while in Jefferson Medical College, he served as a librarian in a settlement house. To his delight and surprise he found a fairly good medical library. If he had arrived in Denver three years earlier, the medical books would have been found primarily in the private libraries of the medical practitioners, for there were medical schools but no medical library.

About that time Dr. Henry Sewall, one of the great pioneer American physiologists, asked the Denver mayor, Platt Rogers, why lawyers always seemed to establish libraries for their mutual use. The mayor responded that lawyers pooled their resources; doctors ought to do the same. Sewall expressed little faith in that kind of spontaneous medical cooperation and approached a friend and patient, John Cotton Dana, head of the Denver Public Library, for assistance. Dana agreed to provide the shelves and clerical support, if the doctors would form an association to fund the endeavor. Thus the Colorado Medical Library Association was founded, and articles of incorporation, a constitution, and bylaws followed quickly, as did gifts. The medicine department of the University of Denver was persuaded to contribute its collection of 240 volumes and 2,000 unbound journals to the cause. It was this medical section in the Denver Public Library that was available for Spivak to use when he arrived.

This collection turned out to be insufficient for Dr. Spivak's varied research interests, and he began asking his friends and acquaintances for resources. He reported that he found "upon the shelves of the private libraries of my friends here and there a book which would make the mouth of the Surgeon-General water" [7]. He conceived the idea of a union catalog of the physicians' medical books and journals. With all the fervor of the newly converted, he prepared and read a paper before the Denver and Arapahoe Medical Society entitled "How the Library of the Colorado Medical Association can double the number of its volumes without making any new purchases—a suggestion" [8]. He reported that the title attracted the officers of the library and the librarian; how little things have changed. His idea was a simple one; he'd be amazed to participate in a SERHOLD®† update. A copy of the appropriate portion of the catalog of the public library was to be sent to every physician residing in Denver with a letter requesting him to prepare a list of his books and journals that were not in the public medical library and return the list to the librarian. Spivak was appointed a committee of one to execute this plan; the response exceeded even his expectations, resulting in the addition of more than 2,000 titles to the public library. Dr. Spivak prepared a pamphlet recommending the process, with the endorsement, "this practical and inexpensive plan will not only foster learning and facilitate research, but it will strengthen the moral ties which bind the members of the profession one to the other, and, eventually will serve as a nucleus of a future library" [9]. He sent reprints of his pamphlet to 300 medical societies and 100 libraries all over the United States, including one with a handwritten note to J. C. Merrill.

In 1898, Dr. Spivak collected and published data on cities and towns with medical libraries. His data showed 165 medical colleges, only twenty-four of which reported a library. Thirty states had medical libraries ranging in number from one to twenty-nine (Table 1). His publication included a table with an array of cities by population indicating the number of medical libraries (Table 2) and the ratio of medical libraries to the number of physicians (Table 3). Massachusetts was the star, with a medical library for every 203 physicians. States such as the Dakotas, New Mexico, and Oklahoma did not have a library because of the paucity of physicians, but he couldn't understand why Arkansas, Florida, Mississippi, Nebraska, North Carolina, Vermont, and Wisconsin did not have "a trace" of a medical library. New Jersey, with 2,044 physicians, got special mention for not having made "an attempt to organize a medical library" [10]. Dr. Spivak rushed in where angels fear to tread by strongly opposing more than one library in a city. He suggested that the library of the Pennsylvania Hospital, the first medical library in the United States, which he reported little used, should be merged with that of the College of Physicians. He called for a limit of one library in cities such as Washington, New Orleans, Baltimore, Buffalo, Cleveland, and Cincinnati. The call appears to have been ignored, although in 1900, the application of the Rush Medical College for membership in our association was tabled, evidently to permit a motion that "this Association adopt as a rule that only one Library shall be represented in the Association from any one city, town or country" [11]. After some discussion the motion was withdrawn, and Rush Medical College accepted as a member.

Across the continent in Philadelphia, Gould was also busy preparing for the June 1898 meeting of the American Medical Association (AMA) in Denver, where he would introduce a resolution calling for the AMA to support public medical libraries in all the

† SERHOLD is a registered trademark of the National Library of Medicine.

Table 1
Geographic distribution of medical libraries, 1898*

Number of libraries	Number of states
0	18
1	14
2	6
3	3
4	2
9	1
10	2
19	1
29	1

* Data are from Med Libr 1898 Sep & Oct;1(8–9) (Suppl.):1–14.

Table 2
Number of libraries in cities, 1898*

Population (in thousands)	Number of cities	Number of libraries
1,000	3	3
800	1	0
400	4	2
200	9	8
100	12	6
50–99	32	12
10–40	144	14
1–9	NA	8

* Data are from Med Libr 1898 Sep & Oct;1(8–9) (Suppl.):1–14.

cities, towns, and villages of the United States. This was adopted by the general session along with a resolution to send the *Journal of the American Medical Association* gratis to the member libraries of the Association of Medical Librarians [12]. Before any of you write for your free copy, you need to know that the general session formally stopped this practice in 1904.

Over the next decade, the development of local medical libraries in public libraries or those sponsored by medical societies was chronicled in the literature and reported at association meetings. But all was not progressing well in Denver, for shortly after the union list project was completed, John Cotton Dana left the Denver Public Library. There is no mention in the literature that the union list was a contributing factor. His replacement evidenced little interest in the medical portion of the collection, and the interest of the physicians originating the project waned. According to Sewall, the library entered on

> a phase of chronic invalidism, at times it was almost like a patient whose life depended on artificial respiration. In 1902 a scheme was promulgated to change its policy into that of a more exclusive and selective membership with higher fees, and in 1903 this plan was crystallized in the organization of the Denver Academy of Medicine [13].

Sewall points out that, in his experience, great libraries go through stages, which begin with the enthusiastic collection of books followed by the realization that the collection needs a knowledgeable attendant and end with such a continual outlay of money by future generations that the library is viewed as a "business enterprize."

The history of the medical collection in the Denver Public Library started by enthusiastic physicians, its moves, and its survival because the pragmatic business types bought land and built a building, is a fascinating story. The Denver library lives on, albeit in a somewhat different form. Much of the rare book collection was auctioned in the early 1980s; duplicates from that collection were donated to the Denison Memorial Library at the University of Colorado. Many of the older serials remain in the Denver Medical Library, which now, in addition to serving the society, functions as the library for Presbyterian-St. Luke's Medical Center.

The medical departments in public libraries and, indeed, the medical and dental society libraries established in the late nineteenth and early twentieth centuries have not fared well over the years. Many of them have been subsumed within other collections. The 1969 survey of U.S. health sciences libraries conducted by Susan Crawford identified 2,880 libraries. Of these, forty-five were sponsored by AMA or independent state, county, or local societies. She contacted fourteen societies that had provided data on their libraries in 1965 but did not in 1969. In general they reported that "the membership had evaluated their library program and made the decision to enter into a cooperative program with a local institution—usually a hospital or medical school" [14].

Table 3
Ratio of number of libraries to number of physicians, 1898*

State	Number of libraries: physicians	State	Number of libraries: physicians
MA	1:203	ME	1:1,121
NH	1:224	SC	1:1,140
DC	1:243	CA	1:1,558
RI	1:263	TN	1:1,718
LA	1:318	WI	1:1,800
NY	1:383	AL	1:1,846
CO	1:483	VA	1:1,978
MD	1:587	GA	1:2,225
IL	1:659	KS	1:2,773
OH	1:736	IA	1:3,051
OR	1:736	KY	1:3,323
MN	1:757	TX	1:4,381
PA	1:835	IN	1:4,714
MI	1:882	MO	1:5,373
WV	1:1,046	CT	1:5,589

* Data are from Med Libr 1898 Sep & Oct;1(8–9) (Suppl.):1–14.

Societies such as the Boston Medical Library; Broome County Medical Society in Binghamton, New York; and the San Diego Medical Society were in this group. In the 1979 survey only sixteen medical society libraries were reported, although I think remnants of more exist [15].

The vision of a public medical library in every city was not achieved. Physician support for many of the early efforts was not continued by the individuals the libraries were established to serve. Newly established or expanded academic medical center and hospital libraries, supported at least in part by their institutions, began to serve the patrons of the society libraries and suburban development drew the population out of the cities. Many society libraries appear to have followed Sewall's evolutionary stages, starting as collections created by enthusiasts as a public or private good and ending as insupportable business enterprises.

FEDERAL EFFORTS

The rapid advances in scientific knowledge that followed the two world wars resulted in an explosion of information that made convenient, rapid access to medical information both more important and more difficult to obtain than it was in the 1890s. It became important to learn about new drugs and diagnostic procedures that could make a difference in the outcome of patient care. The dramatic increase in the number of books and journals bore evidence of the information explosion, which far outpaced most library development. Many health professionals continued to obtain their information from a colleague or the journals and texts in their offices, a continuing concern of the nation's leaders.

It is interesting after a quarter of a century to go back and reread the summary of the 1964 *Report of the President's Commission on Heart Disease, Cancer and Stroke,* with its descriptions of the changing patterns of disease affecting the nation and the need for health care providers to have access to the most up-to-date knowledge. In his transmittal letter to the president, Dr. DeBakey, the chairman of the commission, said that "Our stated goals are neither impractical nor visionary—they can be achieved if we so will it" [16]. One of the recommendations in the report was that "the National Library of Medicine be authorized and adequately supported to serve its logical and necessary function as the primary source for strengthening the nation's medical library system" [17]. The special section on medical libraries in the report mentions the achievement of "fingertip" control of the literature. The 1960s were the age of mainframe computers and MEDLARS®‡ was in its early stages of development. These technological advances were to offer new possibilities for furthering Gould's vision, but at that time the attention of much of the library world was drawn to the technology for improving existing processing.

Congress took rapid action on the recommendations included in the report. On October 6, 1965, Public Law 89-239 was enacted, authorizing the establishment of Regional Medical Programs (RMP) to use regional cooperative arrangements to bring the results of research in heart, cancer, stroke, and related diseases from the academic medical centers to health care providers in even the smallest communities, thus ensuring all patients the most up-to-date care [18]. Sixteen days later, on October 22, the Medical Library Assistance Act, which created the Regional Medical Library (RML) program, was signed [19]. Over the years, as part of both the RMP and the RML program, many librarians have traveled to small communities to encourage administrators to develop information resources, trained individuals to be responsible for these resources, and promoted MEDLARS searching. I personally have eaten chicken in many disguises as a preliminary ritual to convincing administrators to provide information services in their institutions. Let me save your digestive tract and waistline; chicken does not work. Upon being named one of the ten fathers of the year, General Norman Schwartzkopf said that being a father was a great leveler. "After giving orders all day and having people carry them out," the general said, "there's something very therapeutic about going home at night and being unable to get your kids to brush their teeth" [20]. I was an enthusiastic medical librarian who believed in the value of information from a library. I found that talking to an administrator of a twenty-five-bed hospital was a great leveler, and I didn't even try to get him to brush his teeth.

The legislation creating the RML program has been renewed over the years, an achievement for which you should be very proud. The network's 3,400 health sciences libraries that you represent are actively sharing resources. The union list and interlibrary loan activities, models for other information dissemination groups, have resulted in greatly improved access to information throughout the nation, but primarily to those with access to a medical library. Over the past five years, with additional money, the RML program increased its outreach activity and will continue to do so over the next five, to ensure that every health professional has access to up-to-date information, paying special attention to those currently unaffiliated with a health sciences library. A renewed vitality has entered the RML program, recently renamed the National Network of Libraries of Medicine (NN/LM).

RMP, however, had a short life, ending in 1976. RMP funding was used to support medical infor-

‡ MEDLARS is a registered trademark of the National Library of Medicine.

mation services in many areas of the country, but I found no review of the fate of these programs. The RMP objectives of training and continuing education were incorporated into the Comprehensive Health Manpower Training Act of 1971, which established Area Health Education Centers (AHECs) [21]. AHECs were to be university-community partnerships to address the problems of the supply, quality, and distribution of health care workers. AHEC libraries dot the nation; in North Carolina alone there are twenty-seven librarians and support staff serving the nine AHEC regions in that state.

Even the Department of Agriculture's Extension Service has been involved in trying to reach those involved in health policy in the small towns of the United States. Through more than 3,150 county offices, the service has a formidable army of agents, especially in the rural United States, equipped with the latest in communication technologies. The Office of Rural Health Policy in the U.S. Department of Health and Human Services recently created and funded a health information service as part of the National Agricultural Library's Rural Information Center to meet a need apparently not met by the medical libraries in the former RML network.

COMPUTER TECHNOLOGY AS AN AID TO ACHIEVING THE VISION

While the U.S. government tried to find ways to keep health professionals up-to-date and to reach remote practitioners, health sciences librarians focused increasingly on users. They developed extension programs using circuit-riding librarians. The clinical medical librarian programs moved librarians into wards or conference rooms, where health professionals could easily ask questions and have answers delivered rapidly to them. In the 1980s, systems were established to link health professionals in rural areas electronically with the resources of an academic medical center. These systems are expanding in number and sophistication in the 1990s. Many, especially publicly funded institutions, have developed outreach programs.

The 1960s were the decade of the mainframe computers, the 1970s saw the rise of the minicomputer, and the personal computers blossomed in the 1980s. In the 1990s the word is networking. Today's literature is replete with references to the use of new computer and telecommunications technologies to link the physician directly with information resources. Dr. Edward H. Shortliffe has written about the networked physician, "for the physicians of the 1990s and beyond, computer workstations will be their windows on the world" [22]. Dr. Shortliffe's powerful imagery of health professionals with "windows on the world" captures one's imagination in 1991 as perhaps Dr. Gould's imagery of a public medical library in the smallest towns did in 1898. Dr. Gould's imagery and personal commitment provided the impetus for the development of our association and fostered the establishment of medical collections in proximity to physicians. Now, distance is not necessarily a barrier. Physical collections are no longer necessary in every locality to provide access to the world's published literature. The modern version of the vision is the health professional with instantaneous, electronic access through a computer workstation. What will be the fate of this vision? The purpose of Dr. Gould's vision was to bring information to the health professional, and he used the methods available in his time. Over the years many people have pursued the same objective, without completely satisfactory results. Will today's technology make the difference?

REFLECTIONS ON EFFORTS TO ACHIEVE THE OUTREACH VISION

In my Doe lecture, I have described the outreach vision of our founding mothers and fathers and some highlights of outreach efforts made over the past ninety years. Much as people look forward to a Doe lecture, those seated in the audience must also look forward to a done Doe. With that in mind, I will conclude with some of my thoughts about the continuities and discontinuities I see between Dr. Gould's vision and today's.

Many of the outreach accomplishments over the years resulted from a close association of health sciences librarians with health professionals, especially physicians. Our profession appears to have some ambivalence about this relationship. In the beginning, association meetings were held in conjunction with those of AMA, and a small number of physicians were very active; however, in 1929 a bylaws amendment was proposed, but not passed, requiring that all elected officers in the association be persons actually engaged in library work [23]. There appears to me to be clear evidence, especially now, that a close working association between medical librarians and health professionals benefits both groups and is essential to make any outreach vision a reality. A good sign is that medical librarians are becoming increasingly active in medical informatics activities, in their institutions and nationally. Medical librarians have knowledge and skills useful in medical informatics, and we can learn to think well beyond the current contents and services of libraries to become part of the information management teams in our institutions.

Out of these closer relations may emerge champions, such as Drs. Gould and DeBakey, who are needed to obtain support for future visions and increase the likelihood of their acceptance. As a group, we have

been dedicated workers. Workers are certainly needed, perhaps more than ever, but we also need to cultivate relationships with the current champions; and don't forget the future champions, many of whom are now students in our institutions. In cultivating champions, we must remember that visions are usually articulated by the leaders but designed for use by the average health professional. The day-to-day practice of medicine and delivery of health care is not carried out by the great visionaries. Livingston Farrand, president of the University of Colorado, gave the address at the 1916 dedication of the Denver Society Medical Library. With some changes in linguistic style, it could be given in 1991. He said:

> Unfortunately the born and irrepressible student is the rare exception. The overwhelming majority of us are the products of our surroundings and obvious opportunities. We do what others do and little more. . . . It is a sad commonplace that the world is full of worthy impulses which die before they have given rise to action—or at least to the point of recognition [24].

Dr. Gould's vision depended upon physicians having, recognizing, and acting upon worthy impulses. To be successful, the modern vision must acknowledge human behavior and be designed for the average hard-working health professional, not the rare exception. More must be learned about the needs and information-seeking behavior of health professionals and how to change these, if change is desirable. Information services from libraries have traditionally depended upon the motivated user to seek them and often to wait for them to arrive. All of us in both large and small libraries must change this.

Visions are stated in general terms; they must be turned into goals, and for the goals to be achieved, strategies must be designed. A national outreach vision needs the support of hundreds of medical librarians to develop and implement the programmatic pieces that are necessary for its fulfillment. For example, a widely held vision is transmitting documents by telefacsimile to health professionals as a simple mechanism to reduce the delivery time. Time reduction yes; simple, not yet. In February, NLM staff ran tests to determine the requirements for expanding telefacsimile service. Every interlibrary loan request received by fax over a three-day period was filled and the document returned by fax. In order to fax the 662 pages in fulfillment of 76 requests, it took 3 modern fax machines a total of 26 hours and 18 minutes. What were the problems? Incorrect fax numbers were submitted by libraries; incoming fax messages interrupted outgoing transmissions, necessitating a restart; receiving machines were not connected to a telephone and had to be manually connected; after three unsuccessful transmission attempts, one of our sophisticated machines just removed the offending request from memory; and so on. These problems are being resolved, but the message is clear: implementation strategies must be planned carefully. What works in a research environment cannot always be simply scaled up for an operational system. Turning ideas into services and products is hard, challenging work, something medical librarians should be very good at. Look at our track record.

It was a surprise to me to realize how important outreach was to the founders of our fledgling association. Is it still? To my knowledge this meeting is the first time outreach librarians will meet as a group at an association meeting. Of course, Dr. Gould's vision called for an increase in the number of libraries, with the axiomatic increase in librarians. The current technology enables health professionals to access some information resources remotely, through a computer screen. As a result, the library as a place and the roles of many librarians will change. The organization of information services within our institutions will change. Medical information is not less important today, nor will it be in the future. The continuity between the vision in 1898 and today's "window on the world" is the goal of getting biomedical information to every health professional, not just the ones in our institutions. What is our relation to health professionals outside our institutions? The key element of the vision of the public medical library was access for everyone, not just those affiliated with a specific institution. The question each of us has to answer individually and as an association is, What is my (our) role in achieving that goal? I believe Estelle Brodman, who said, "The role of the medical librarian in the future is whatever we prove we have the ability to do well" [25]. If providing up-to-date information to each and every health professional is still a personal goal and a goal of the association, we must clearly articulate the vision, develop implementation strategies, form closer partnerships with those in the health professions, and provide colleagues and those entering the field with the capabilities they will need for these future roles.

ANOTHER DINOSAUR JOINS THE RANKS

David Bishop said that his reaction to being named a Doe lecturer was "Dear God, I've joined the dinosaurs" [26]. Well, today the dinosaur ranks have just been increased by one. What kind of vision did dinosaurs have? Although scientists are not certain, because there is no fossil evidence, experts believe that dinosaur vision parallels that of modern animals. That is, meat eaters had the best vision and were somewhat farsighted. Plant eaters probably had poor vision; they

relied on their sense of smell, as their source of sustenance stayed firmly in place.

The difference between the carnivores and herbivores was also in the rapidity of their movement. The carnivores needed to catch their prey to remain alive. Farsightedness probably doesn't give clear, precise vision. They may have chased some unappetizing prey from time to time or lost a good meal because they went in a less productive direction, but they pursued a vision.

Thank you for naming me to the ranks of the association's distinguished list of dinosaurs. Please place me with the carnivores. I may not always be going in the best direction but I am moving toward "that vision thing."

REFERENCES

1. GOULD GM. (119 South Seventeenth Street, Philadelphia). Letter to Surgeon J. C. Merrill. 1897 October 19. 3 leaves.
2. IBID.
3. ORGANIZATION OF THE ASSOCIATION OF MEDICAL LIBRARIES. Med Libr 1898 May;1(4):30.
4. GOULD GM. The work of an association of medical librarians. Med Libr 1898 May;1(4):15-6.
5. Our aim. Med Libr 1898 Feb;1(1):1.
6. SPIVAK CD. How every town may secure a medical library. Med News 1897 Oct 2;71(14):443-4.
7. IBID., 443.
8. MILLER G. Charles David Spivak's role in the development of medical libraries. Trans & Studies of the Coll Phys Philadelphia 4th ser. 1974-75;42:81-7.
9. SPIVAK, op. cit., 444.
10. SPIVAK CD. The medical libraries of the United States. Med Libr 1898 Sep & Oct;1(8-9)(Suppl):1-14.
11. The secretary's report of the third annual meeting of the Association of Medical Libraries. Med Lib 1900 May-Aug;3(3-4):32.
12. Second general session. JAMA 1898 Jul 9;31(2):85-6, 94.
13. SEWALL H. John Cotton Dana, foster-father of the Denver Medical Library. Colo Med 1929 Dec;26(12):411.
14. CRAWFORD S. Health sciences libraries of professional societies, voluntary organizations, and foundations. Bull Med Libr Assoc 1972 Apr;60(2)(Suppl):42.
15. CRAWFORD S. Health science libraries in the United States: I. Overview of the post-World War II years. Bull Med Libr Assoc 1983 Jan;71(1):16-20.
16. DEBAKEY ME. [Transmittal letter to the president]. In: The President's Commission on Heart Disease, Cancer and Stroke. Report to the president: a national program to conquer heart disease, cancer and stroke. v. 1. Washington, DC: U.S. Government Printing Office, 1964 Dec:(ii).
17. The President's Commission on Heart Disease, Cancer and Stroke. Report to the president: a national program to conquer heart disease, cancer and stroke. v. 2. Washington, DC: U.S. Government Printing Office, 1965 Feb:381.
18. Title IX Research, training, and demonstration in the fields of heart disease, cancer, stroke, and related diseases, 42 U.S.C. §299 (1965).
19. Medical Library Assistance Act, 42 U.S.C.§280 (1965).
20. Washington post. 1991 May 18:G3.
21. Comprehensive Health Manpower Training Act, 42 U.S.C. §292-3 (1971).
22. SHORTLIFFE EH. The networked physician: practitioner of the future. In: Ball MJ et al., eds. Healthcare information management systems: a practical guide. New York: Springer-Verlag, 1991:3.
23. MCDANIEL WB 2D. Medical librarianship, a mid-century survey: a symposium. A salute to some milestones, detours, and dead-ends in the history of the association. Bull Med Libr Assoc Oct 1957;45(4):461-6.
24. FARRAND L. The library and its meaning. Colo Med 1916 Dec;13(12):364.
25. BRODMAN E. Medical librarianship, a mid-century survey: a symposium. Changing concepts in the role of the medical librarian in the 20th century. Bull Med Libr Assoc Oct 1957;45(4):485.
26. BISHOP D. On the uses of diversity. Bull Med Libr Assoc 1976 Oct;64(4):349.

ADDITIONAL READING

1. BALLARD JF. The past history of the Medical Library Association. Bull Med Libr Assoc 1948 Jul;36(3):227-41.
2. FRANCIS WW. Margaret Charlton and the early days of the Medical Library Association. Bull Med Libr Assoc 1936 Sep;25(1-2):58-63.
3. GROEN F. Margaret Ridley Charlton, medical librarian and historian: an evaluation of her career. Fontanus 1989;2: 55-63.
4. HUNTINGTON AT. The Association of Medical Librarians; past, present and future. Med Libr Hist J 1907 June;5(2): 111-23.
5. ROGERS FB. Welcome address: "Colorado and the Medical Library Association 1898-1968." Bull Med Libr Assoc 1968 Oct;56(4):436-9.
6. SPIVAK CD. Medical departments in public libraries. Med Lib 1902 Dec;5(4):18-21.
7. TANDY FD. The Colorado Medical Library Association. Med Lib 1898 May;1(4):22-9.
8. WANNARKA MB. Dr. George Milbry Gould: ophthalmologist and first president of the Medical Library Association. Bull Hist Med 1968 May-Jun;42(3):265-71.

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