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MEDICAL LIBRARIES: Cooperation and New Technologies
C. Deschamps and M. Walckiers (Editors)
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HEALTH AND BIOMEDICAL LITERATURE: A COMPONENT OF THE NATIONAL HEALTH INFORMATION SYSTEM

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A health information system may comprise patient records in a hospital, health records for an entire community, morbidity and mortality statistics, or managerial information such as financial data and/or statistics on the number of existing or required health institutions, personnel and services. A system may also provide for the consolidation and interaction of health literature services (i.e. health libraries, documentation centres and other literature services such as indexing and abstracting services, the creation and marketing of bibliographic data bases and so on). Ideally a national health information system should cover all of the above-mentioned components. Until quite recently, national health information systems covered only one or more of those components but rarely all. The most frequently omitted component was that for health literature services. This is probably because medical specialists more readily perceive their need for access to comprehensive statistics and medical records for comparative purposes than to literature. It may also be due to the fact that collecting vital statistics has been accepted for many decades as a national task and because present-day systems are mostly computerized and the earliest uses of computers were for operations dealing with figures and other data that can easily be stored in numerical form.

The way health systems have developed is very understandable if we think of them as schemes to facilitate the provision of medical services and, by extension, to help in the process of planning preventive services to conserve health. If, however, we consider for a moment the word information, we could be very surprised to learn that very few health information systems include a component for health and biomedical literature. What is the purpose of writing, publishing and reading health and biomedical literature if it is not to obtain information on health and biomedicine?

A major obstacle to the development of systems through which health personnel would obtain information from health and biomedical literature, as compared to the development of systems designed for medical records, vital statistics, the logistics of health personnel or the financing of health services, is that the producers of the commodity (i.e. authors) cannot be organized nationally (they are not a distinct category of persons and their affiliations are extremely varied) and that the distributors of the commodity are usually commercial enterprises (i.e. publishers). Physicians prepare patient records during the course of their work and it is legally compulsory for them to report morbidity and mortality statistics. Health administrators are more concerned with numerical data describing their budgets and expenditures, and the numbers of doctors, nurses, etc. who are available, than with information per se. Medical schools want to know how many students they can expect to enroll, how many have been trained, and which departments have how much funding. But authors! authors of periodical articles, textbooks and monographs on preventive and curative medicine, or on

health as a community concern - who are they? where are they? what would they gain by ensuring that their writings are easily accessible through a system? Many medical authors' interest in their own writings is limited to persuading a well-known publisher to publish them and to having them quoted by influential peers, for the sake of prestige and promotion.

Who is viscerally interested in the contents of health and biomedical literature? Perhaps only medical researchers who are working in the basic and pure sciences in which fields it is vital to learn quickly about the discoveries of others working on precisely the same subject. The other persons who are genuinely interested in literature are: students (mainly textbooks plus a small number of articles on the specific topic of their thesis); professors (just sufficiently not to be seen as out-of-date or generally uninformed); specialist practitioners (because they call attention to themselves by being the experts in a limited area and, if they have private practices, their success may depend on them being the most informed expert). None of those persons will cease to function if they have access to only a very small part of the health and biomedical literature output. They can manage very well without having access to a system; a small library or a few personal books and subscriptions suffice.

So is there anyone who really needs a health information system with a component for health and biomedical literature? Which persons cannot function properly unless they have easy access to a large proportion of the world's output? In my opinion, there are three groups among the members of the health team who would improve the quality of their work if they had easy access to appropriate literature through a national health information system; they are precisely those persons who, at present, read little or even do not read at all: i.e. the health administrators, the very general practitioners and the auxiliary health personnel. The reasons why they read little have not been fully explored, so we cannot be sure that we know why and if we do not know why it is difficult to change the situation. As guesstimates I suggest that administrators read little because the literature that would be useful for them is very dispersed, geographically and institutionally, and inaccessible; that general practitioners read little because they are lacking incentives as they are often dealing with members of an uninformed public who have difficulty in judging whether or not they are being treated by very knowledgeable and up-to-date persons; and that auxiliary health personnel read little because not much literature is written which is geared to their needs and in a language they understand. Even though these groups of persons have not recognized nor voiced their needs and even though they could continue thus without anyone noticing their lack of information, let us consider very briefly the implications of the unavailability of timely and appropriate information in documentary form for these categories of health personnel.

Health administrators have a very big responsibility to the community, to the tax payers and to their colleagues; the health of huge populations is in their hands and the resources at their disposal are often painfully meagre. In other words, they have big responsibilities and limited resources. Learning by trial and error usually means learning well but slowly and, for an intelligent person, learning from other countries' experiences and culling ideas from a variety of sources is more expedient. Health administrators may be in a ministry of health or out in the rural areas; they may be planning services for the whole country or they may be managing some specific services. They need information on managerial methods and also on technical questions. Some years ago I met a hospital director coping mainly with diarrhoeal diseases in children. The problems were terrible and she was experimenting with different possible solutions and writing up her experiments. We discovered that her work was of the highest

quality but, regretfully, totally out-of-date as the same experiments had been made elsewhere five or six years earlier. The treatments given had been replaced by far improved methods. Similar stories abound, especially in developing countries and we have found that, for instance, a ministry of health in Asia was especially interested in the recent experiences of an African country (found almost accidentally in a governmental report of a very fugitive nature) which related far more to their situation than the experiences described in the more accessible literature of the developed countries.

The problems of access to literature for general practitioners are of various kinds. The practitioner may be working unattached to any institution and/or in a rural area with no nearby library. The information needed is usually in the form of a specific answer to a specific question but which may be within a very wide range of subjects. The practitioner needs access channels to information which are well-known to him and which will result in short, rapid and very selective replies. In the United States of America where the clinical librarians accompany doctors on hospital rounds - a marvellous but expensive service - they often find that just having a list of article titles may solve the problem. If you need to know whether a certain drug has side effects and none is reported in the literature, you may have your answer. Rural practitioners working alone or in hospitals or health centres in developing countries could be served, for instance, by a flying library service, or a bibliobus or even a general courrier service. Those in developed countries are served sometimes by circuit librarians based in a large urban health sciences library but spending most of their time going round the outlying areas. If the general practitioners do not have access to the literature, the quality of their services may diminish and the nation benefits less from their costly training.

Auxiliary health personnel face different problems. Much of the information they need is gained from the other members of the health team, but this could be complemented advantageously by an outreach loans service providing literature written in a very practical way with lots of diagrams in the local language. In many countries, auxiliary personnel are the largest health workforce. It behoves us therefore to take their needs into consideration in order to maintain their motivation and to ensure their maximal effectiveness.

Initially, when a national plan for health literature services is being prepared, the categories and numbers of health personnel to be served should be noted, their needs identified, those needs costed, and the available resources allotted equitably between the services specially designed to meet those needs. Before the allocations and services can be planned, implemented and constantly evaluated, it is also necessary to have a clear picture of the resources that are available and of the existing and required infrastructures. (Some ideas on national policies for health literature services are given in a recent article and a WHO document).* In many countries, the libraries of the schools of medicine and other health fields have relatively large resources. The library manpower, the book and serials

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*Ruff, Beryl: National policies for health library networks. WHO Chronicle 1985;39(6):212-218.

Weitzel, Rolf: National planning of health literature services. 1986, Geneva : World Health Organization. (WHO/HLT/86.1) Unpublished.

collections and other resources may even be under-utilized or poorly exploited in other ways. Staff development and training, sharing professional tasks and appropriate technology, and cooperative acquisitions, for example, will be much more meaningful if they are planned and organized at national level. Once there is a comprehensive national plan for all health literature services which takes proper account of the users who, so far, have been under-served, and of the resources which may have been poorly utilized, and once the infrastructure has been effectively established and the plan has been effectively implemented, it will obviously be extremely beneficial if those national health literature services are brought under the umbrella of a national health information system. Information can be an amorphous commodity; one system of interrelated and interactive components could be a very appropriate, economical and effective way of ensuring that no member of the health team (in the widest sense) is functioning poorly for lack of information obtained from statistics, financial data, manpower predictions, etc. and literature.

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MEDICAL LIBRARIES, AN ESSENTIAL PART OF HEALTH CARE SYSTEMS

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Medical libraries play an important role both in medicine and health care system.

This role is defined by many factors, the first among them is mainly descriptive character of medical science and health care data, facts and methods. It involves a flood of published and unpublished documents concentrating in medical libraries.

The intrinsic quality of the 20th century is a complex character of scientific research and method of gnoseology. It means that a scientific needs information from many sciences, which decreases the role of private home libraries and increases the importance of specialized libraries where a scientist may have access to all the neccessary documents from related sciences. Besides, both in medicine and health care it is of great importance to deal with the oroginal document which cannot often be replaced by an abstract, summary or review.

The regional concentration is not characteristic of health care system. It means that the network of medical facilities and doctors is widely spread all over each country, therefore the network of medical libraries to serve them must be built with due regard to this factor.

Today we can point out that information on the availability and location of original sources is needed by physitians, librarians and information service workers who often cooperate in using original sources. At the same time the information on the contents of the original documents is needed primarily by medical workers and among them most often by researches.

In information on availability and location of a document an important role belongs to union lists especially now that editions go up in price though in most countries the money allocations for libraries' acquisition needs remain constant.

In the Soviet Union there is an automatic system of medical literature union lists. The beginning to such a data base was laid down in the 'MEDINFORM' system which unites medical information centers and medical libraries of the USSR, Hungary, GDR, Bulgaria, Poland, Czechoslovakia and Cuba. In the Hungarian National Body of 'MEDINFORM' there is a functioning data base on availability of world's medical periodicals in the above countries. The medical libraries ought to discuss a possibility to create a European data base or an information reference edition on special information-retrieval system (both automatic and manual) available at medical libraries and information centers in Europe.

The role of medical libraries is not the same for various categories of medical workers. Today a medical scientist is in need of wide general and at the same time most complete information of narrow specialization. While in the first case he is satisfied with informative documents varying from bibliographic lists to analytical reviews of literature, in the second case after using an informing document as a signal he is searching for the oroginal source or a copy thereof, hence turning to a library.

To meet the growing needs of the Reader, each library makes every effort to enlarge the library's acquisitions. At the same time the completeness of acquisitions is connected with pecuniary limitations. Therefore in recent work much attention has been paid to international book exchange (including the exchange of documents' copies) and international interlibrary loan services. The growing interest in medicine by laymen leads to the result that not only medical libraries and practitioners but also non-medical libraries and non-medical specialists are seeking to buy medical literature. This tendency is well reflected in international book exchange where medical literature is often acquired and offered not to the purpose. Therefore, an agreement should be made so that the medical literature in international book exchange must be used by medical libraries only. It would enlarge their international book exchange and enhance the partnership between exactly medical libraries.

Among many services available at a library there is one which seems to considerably help a practitioner, this being a service of oral interpretation from foreign languages.

It is almost impossible to imagine that each and every practitian is a polyglot. At the same time it is hard to imagine a scientist who would ignore studying the latest developments in his particular field achieved in foreign countries whose languages are insurmountable obstacles for him. A specially organized in a library oral interpretation service helps overcome them. The cost of such interpretations is ten times lower than that of the written ones, while the accuracy is usually several times higher. Besides, if such service is available in a library, a doctor can simultaneously work with literature in different languages including rare ones without the need to look for an interpreter each time for each document.

As an integral part of health care system at the level of medical treatment-and-preventive facilities, libraries play an important role in putting into practice of these facilities new forms and methods of health care, the information on which has been obtained from various publications and documents. There is sharp difference in documents needed for a practical physician on the one hand and for an investigator on the other. A practitioner first of all turns to instructive and methodical documents, to clinical literature of practical subjects and character, and, of course, not to an abbreviated information abstract from a document but to the original source itself, to specific facts and methods laid down in it. Another peculiarity is that a practitioner needs, as a rule, information of selective or recommendatory character. These are the reasons the Soviet Union librarians are guided by when compiling all-union and regional information bibliographical indexes like "Literature for practicing physician" with abstracts and selections or separate issues dedicated to each medical speciality. Medical libraries in the Soviet Union servicing general practitioners contain special kinds of documents to be constantly used by health care network specialists. From these documents they select materials which are considered by regional councils of experts and furthermore recommended

for implementation in a certain establishments or a series of establishments of the region. Regional libraries keep records of the implemented novelties borrowed by physicians from publications and other documents available at the library. Regarding general practitioners very busy people, medical libraries try their best to bring literature closer to their working places by making contacts with regional or city health care administration bodies to agree upon the subject, time and contents of literature exhibitions. Then previously selected documents in the pre-arranged time are delivered to the institution and each physitian may acquaint himself with them requesting a needed document either through the loan service or a copy thereof for a detailed study. Forms of such arrangements can vary considerably according to their aims and in the Soviet literature they are reffered to as "information days", "specialist's days", subject exhibitions, etc. Most often regional or city libraries containing medical literature cooperate with each other in such arrangements to serve primarily the hospitals where there are no medical libraries.

Medical libraries also take active part in teaching the students the basic library-and-bibliographical knowledge. A practitioner cannot be considered fully prepared for work unless he knows the fundamentals of library information services and how to use them.

In the Soviet Union the "Introduction into profession" course is scheduled to have several hours dedicated to library's discipline. However a student filled up with medicine often seems to consider our course of knowledge alien to him. If this is the case each library again begins teaching its users the basic library information knowledge but during those limited times when a reader is visiting it. We think that European medical libraries could jointly work out a course aimed at teaching the users to make the most of library services.

As a rule, doctors of a medical institution take active part in the work of the medical library of this institution and they are reffered to as "medical opinion". Close ties between librarians and medical specialists not only confirm the role of libraries in the work of the lattermost but are also laid down at a state level in "The Regulations on Librarianship in the USSR".

Almost each library has councils composed of medical specialists. They help strengthen organizational ties between the library and medical institutions and keep the library activities at high level of consultative medical knowledge.

Beside library councils there are physitians, called "physitian information specialists" allotted by medical subdivisions in order to acquaint themselves with the information sources and later on to give review on the subject at their subdivisions.

Another role libraries play in the development of health care system is providing the health care management with the information and documents concerning health care and social hygiene. This activity has been spred especially among regional libraries and most often is reffered to as "Selected Management Information". Its methods were described in library press and approved by instructive materials of information-and-librarianship management bodies.

Thus, we may definitely say that a medical library's life is closely connected to health care system as well as to medical science. And it would be hard to imagine a modern health care system without this integral part.

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Vision-Led*

The opportunity exists for medical librarians with vision to develop and implement plans to improve and network medical libraries so as to provide medical information services which are needed throughout the globe. This paper briefly describes the need and urges participants in the First European Conference on Medical Libraries to build upon the momentum generated by this Conference by developing plans to share resources thus strengthening medical information services in Europe and indeed, throughout the world.

It is an honor to be invited to address the First European Conference of Medical Libraries and to participate with you in this historic event. The organizers of the conference are to be commended for this outstanding accomplishment.

About one year ago medical librarians from 64 countries attended the fifth International Congress on Medical Librarianship in Tokyo. The theme of that congress was "Medical Libraries - One World: Resources, Cooperation, Services". At the opening address, Dr. Shimai, President of the Japan Organizing Committee for the Congress, explained that the theme was selected to convey the urgent nature of the common task facing the world's medical information service community. Today I will briefly describe the continuing global need for medical information. I will also propose a vision of a way you may help address that need and in doing so improve information service in Europe.

Each of you is aware of how disease outbreaks and medical emergencies can effect the health of people in countries thousands of miles away. The events in one country are of direct concern to the people in many others as disease spreads without regard for political boundaries. Often experts from several countries are requested to assist when an emergency or disaster occurs. This expert assistance lessens the adverse effects of the emergency. Through such assistance the experts themselves learn and in turn increase the body of knowledge available for the future.

Each of you is also aware that the biomedical literature is increasing both in the number of publications and the forms in which publication is occurring. Between 1963 and 1983 the number of journal titles indexed in Index Medicus increased 21%; however the number of articles increased 118%. The frontiers of medicine are expanding rapidly as advances in biotechnology and other fields result in a more complete and detailed understanding of disease origins and processes and possible therapeutic interventions. Libraries are acquiring and providing access to audiovisuals and computer software, in addition to the more traditional printed publication formats of books and journals.

Machine readable databases were introduced in the 1960's. The number has grown from a few dozen in that decade to over 2800. In addition to bibliographic databases, numeric and factual databases are important resources for librarians and health professionals. A relatively new trend in databases is the addition of full text for searching and retrieval.

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Experiments are being conducted with developing, updating and searching textbooks in electronic form. Publishers and editors are discussing and experimenting with producing books and journals that would be available only in machine readable form.

Advances in computer and telecommunications technologies are changing our thoughts about the storage, retrieval and transmission of data. Papers in the literature and at meetings are filled with terms like CD-ROM, parallel processors, artificial intelligence, intelligent interfaces and X.25 protocols. The technology exists to capture, store, retrieve and transmit data from one or more major resources to the most remote sites.

You, as medical librarians, are aware of the needs for information. You are aware of the large and rapidly increasing body of information. You know something about many of the technologies that can make this information available everywhere in the globe. Yet you are also keenly aware that this information is not available to all health professionals even in the most developed countries, let alone to many in developing areas. You are aware of the efforts of governments and organizations such as the World Health Organization to improve the health of all the world's peoples.

Medical librarians can play an important role in making progress toward the World Health Organization's goal of health for all by the year 2000. If this goal is to be achieved for the entire globe, it is essential to provide the most up-to-date information to all health professionals. Achieving this goal will not be an easy undertaking for anyone. Medical librarians must decide if they want to be active, responsible partners in this effort. If they do, it will require strengthening professional knowledge. In order to be effective partners, medical librarians must be effective information managers and develop systems for managing information. They must strengthen the information services in each and every country. They must develop ways to cooperate to share resources and expertise in their own countries as well as regionally and internationally.

One way to strengthen services in a country or region is to develop networks of libraries. I define a network as two or more libraries or information centers engaged in the development of cooperative programs, services and the information exchange through communications links for some common objectives. They may make use of computers and telecommunications to aid in communication. The important criteria for networking seem to be the cooperation of several libraries and the existence of programs and exchange of information to meet common objectives.

It seems to me that strong national and regional networks of medical libraries must be systematically developed in order for medical information resources and expertise to be shared. These networks could be linked to form a global system that would transfer health care and medical research information from resource to requestor easily, quickly and cost effectively. In this way medical librarians could be active contributors toward achieving the vision of health for all in the year 2000.

In the United States we know from experience both the work involved in and the benefits from building such a network. Our nation's health science libraries, the national professional association of medical librarians and the U. S. National Library of Medicine have worked together to form a very effective Regional Medical Library Network. A little over two decades ago many medical libraries in the U.S. were

small, had untrained staffs and poor resources and services. They were inadequate to the task of bringing the results of biomedical research to health care practitioners, other researchers and educators. It has taken considerable effort to build a functioning national network. The enabling legislation, the Medical Library Assistance Act, was passed by the U.S. Congress in 1965. In addition to funding the Regional Medical Library Program, the MLAA authorized grant funds for library construction, training of medical librarians, research, resource improvement, and supporting biomedical publications. This legislation has been renewed periodically since 1965. Building the network has taken many leaders with vision. It has required financial support. Forty six million dollars of federal money have been spent on the RML program since 1967 and many millions more in federal money to improve libraries and their resources. Progress has been most noticeable in the network when the goals were specific and formulated in response to demonstrable needs of health professionals. Developing specific tools to locate serial titles, so interlibrary loans could be processed faster was one such goal. The network required that the work be distributed among a number of libraries. Currently about two million ILL's are filled in the network; only 175,000 of these are filled at NLM. Each network participant receives as well as gives. Libraries with scarce resources have had to find ways to help themselves and contribute something to others. The larger libraries could not continue to give and give.

What are the components of such a network? At the core are knowledgeable medical librarians doing the best they can to improve their collections and services in their institutions. At the next level is a network formed by these librarians who cooperate within one country or a geographical or political area. The next step would be to link these networks to form an international system. In addition to the core of librarians, an essential part of the network are the leaders, people to provide the vision and planning and coordinate the activities of the participating librarians and institutions.

There are many barriers to developing networks, as the organizers of this conference know. There are language, economic, political, geographic and societal barriers. It takes very, very important goals or needs to overcome these barriers. Providing health information for the world's people would certainly seem a sufficiently important goal to overcome many barriers.

Achievement in the world is vision led. The great achievements in art, music, literature, philosophy and science started with individuals of great vision. The picture of what might be or what should be, provides the direction or goal to work toward. Health for all in the year 2000 is such a goal or vision for the future. What roles can this conference and each of us play in achieving that goal?

While the vision leads; progress toward the vision is composed of individual achievements. The improvement of one information resource in your library, reaching a type of health professional previously underserved, agreeing to provide interlibrary loan service to a library without those resources, developing a union list of serials in a country so documents can be more easily located, exchanging publications between countries, providing searching training on new databases, are examples of the kind of achievements individuals can undertake. There are many resource sharing activities that can be undertaken by medical librarians to improve information services in Europe.

A common vision can lead this conference. Your collective conception of the future for medical information services in Europe and throughout the

world can provide a powerful vision for the attendees and organizers of this conference to work toward.

It may be helpful for your leaders to engage in long-range planning to answer questions like - What is your common vision of medical information service in Europe? How does this vision relate to global needs and global resources? What must be done to achieve this vision? What are the first steps to take? What are the existing resources? How can these resources be shared? How can they be developed and improved? What are the most important needs? How can they be met? What are the barriers to cooperation and sharing? How can they be overcome?

Is my vision of providing medical information services throughout the world through linked networks of medical libraries, shared by any of you? If the answer is yes, can a network of European medical libraries be formed to link with the network in the United States? You have resources U.S. health professionals could use; we in the U.S. have resources that can help you. A European network together with networks in Canada, Australia/Oceania, Asia and the United States would form a large portion of an international system. The World Health Organization, the International Federation of Library Associations and Institutions, and other organizations could then work with African, Latin and South American and some Asian countries to develop similar networks that would be part of this international system. Together these networks could preserve the scholarly record in biomedicine and develop and provide information resources in their geographic areas. They could also share information services with libraries in other networks to the extent they are able. Today's technologies make improving resources and linking libraries and networks possible. They provide new and exciting solutions for old problems.

The First European Conference on Medical Libraries is a wonderful opportunity for each of you to meet colleagues, to learn new professional skills and to learn of new resources or ideas in order to return to your library able to provide a better information service. It is also an opportunity to think about your vision of the future of health information services in Europe and throughout the globe. What is your vision of the future? What are your colleagues' visions? What is your part in making the portions of these visions which are held in common a reality? It is the common vision that all of us share that will lead us toward a future of vastly improved medical information services. It is what we specifically plan to do to achieve that vision that will determine the future of our profession, the impact we truly have on health care, and the quality of information services throughout the world.