Before and after CD-ROM: its impact on the management of resources in an African library

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The University of Zimbabwe Medical Library (UZML), a branch of the Main University Library, is part of the Medical Faculty, which is situated in the Parirenyatwa Hospital complex in Harare. The library grew from a small collection, started in 1963 when the first medical students were enrolled. Its expansion was greatly accelerated by the donation of the collections of the Central African Journal of Medicine and the Mashonaland Branch of the British Medical Association (now the Zimbabwe Medical Association). These books and journals helped to establish one of the best stocked medical libraries in Africa. A condition of the donation was that the library’s facilities would be available to all medical practitioners in the country. A further development of this responsibility occurred in 1983, when the library was declared the National Focal Point for health sciences information. This means that anyone registered with the Health Professions Council may use the library, and anyone needing information on health-related topics may request assistance. A new post, designated "outreach librarian", was established to enable the library "to get information to any registered health worker in the country who asks for it, as quickly as possible". Almost from its inception, therefore, the library has had obligations beyond the institution it was established to serve. The Faculty of Medicine is the largest in the University, with 23 departments offering diplomas, degrees and postgraduate courses. The library has had long-standing and mutually beneficial links with other libraries, notably those in South Africa, mainly for the sharing of resources through interlibrary loan.
To provide information from journals, the reference librarian was helped by *Index Medicus*, which has been published since 1960, the printed forerunner of the MEDLINE database, both produced by the National Library of Medicine in Washington. If current awareness services were required, the librarian would have to scan the contents pages of relevant journals as they arrived, so that unless monthly *Index Medicus* issues were also examined, awareness of what had been published on the topics of interest was restricted to the titles received by the Library. Any references for specific enquiries would also necessitate careful scrutiny of *Index Medicus* and the manual listing of the articles selected. If the full text of relevant articles were available they could be consulted or sent to the enquirer as a photocopy, or the details transmitted by telephone in case of an emergency. If the library did not stock the item referred to, an interlibrary loan could be requested. The time and effort required to trace journal information through *Index Medicus* meant that only those required to retrieve information from journals, or those most committed to keeping abreast of current advances, or librarians responding to specific requests, used this means of accessing the contents of the foremost medical periodicals. Otherwise, scanning the indexes of earlier volumes or the contents of current issues was the only way to retrieve information.

Information needs of health workers became clearer as the result of a survey conducted in 1984 and thus a digest of selected citations from WHO was produced, entitled CHIZ (Current Health Information Zimbabwe). WHO in Geneva generously provided the necessary monthly MEDLINE searches, run on a profile of Zimbabwe's major health issues. The resulting citations and abstracts were compiled into a quarterly publication, which is still circulated to over one thousand individuals and institutions.

MEDLINE, a bibliographical database, came into being in 1966, initially as an online service from the National Library of Medicine. When CD-ROM technology arrived, its potential was soon harnessed to the already well-developed information retrieval system of the NLM, and one of the most effective electronic databases was created. It is produced in different versions by seven vendors, with monthly updates. In 1989,
MEDLINE was acquired by the UZML as part of a donation by the Carnegie Corporation of New York, and a revolution began, which was to influence the management of human, material, financial and equipment resources in varying degrees.

The responsibility of being the initial intermediary or broker of the information contained in CD-ROM databases has enhanced the status of the senior librarians who operate the system. Recognition of their professional capacity by library users has greatly improved, and consequently so has their morale. This has brought with it new demands, however, which require the exercise of each one's capabilities more consistently than before.

Special librarians have always been required to become familiar with the vocabulary and concepts of the particular subject for which they are responsible. The increased number of parameters for information retrieval provided by CD-ROM necessitates a greater degree of understanding of the potential of the system to satisfy precisely and fully the enquirer's needs. The "reference interview" has long been an important part of any contact with library users needing information. The amount of information accessible through CD-ROM exceeds anything previously available. The librarian must therefore interact more effectively with users to clarify in their minds, and his/her own, the exact elements of the topic in question. This may include the level, scope, quantity of the information, the period from which it emanates, or other parameters, e.g. the ages, and sexes of patients. UZML has progressively refined a search request form which attempts to provide librarians and users with reminders of as many of the available options as possible, particularly important when users are not able to perform the search alongside the librarian. The need to communicate (sometimes intensively) with users requires librarians using CD-ROM to have a better command of the subject field than before. Even more is demanded because their direction of the search should, to some extent, match the speed of retrieval provided by the system. In a real sense, the librarian’s professional responsibility as an information provider has increased, as many users find CD-ROM databases less comprehensible than printed sources, and are
consequently more dependent on the librarian for the quality of the information which is provided.

Not only the subject expertise but the technical expertise necessary to manage CD-ROM-based information has escalated and the librarians involved have had to become thoroughly familiar with the basics of informatics, e.g. Boolean logic, and the best ways of combining terms to reach the desired result. Another huge and often intimidating area of technical competence is the area of computer hardware, software, operating systems and the associated vocabulary. CD-ROM drives far more than the shiny discs that store the information!

Since the advent of the CD-ROM facility at UZML, the job description and activities of several of the staff have changed radically. The reference librarian used to be able to perform other duties alongside the provision of information. Now, with the average number of searches having increased from 80 per month to 450 per month, and the number of workstations expanded to five, there is a growing need for other senior staff to give support to information searching. Most queries from library users now relate to CD-ROM-based information, because of the ease and speed of retrieval.

Together with searches, the reference librarian’s other major responsibility is training in the use of CD-ROM resources. Formal and informal in-house training of senior staff takes place regularly. A reference meeting is held for two hours or more monthly, often on a seminar system. Staff prepare different search strategies on a given topic beforehand, and the group then discusses each member’s strategy. Everyone learns from the examples, most of which are provided by the reference librarian from previous enquiries, and which illustrate important features or principles of using the system. UZML is committed to promoting independent use of the facility by enquirers, so that encouraging them to become competent end-users is a priority for all staff. Everyone therefore has a training role during their reference duty times, which is a considerable extension of their responsibility for basic user orientation for the library as a whole. Librarians are more involved with the users as they assess the users’ willingness or capacity to accept different levels of independent activity on the
computers. Now they are developing effective ways to communicate retrieval
techniques. To a much greater extent than before CD-ROM, librarians need to foster
relationships with users supported by good communication and trust.

Systems maintenance, and the management of a variety of databases and their updates,
decisions on spares and repairs and the monitoring of service provided by suppliers
and technical support are all responsibilities that have been introduced to staff at
UZML since CD-ROM was installed. This has involved many of the staff acquiring,
in varying degrees, expertise for which they previously had no need, and which is
providing constant challenge and learning opportunities which would not otherwise be
available. Already areas of relative specialization are becoming apparent, prompting
questions such as, "How many of the staff should become competent, or familiar,
with...?" This is a typical question in human resources management.

The users’ awareness of the service was initially almost non-existent, so that the
reference librarian in particular has responsibility to promote it. This is being done not
only by demonstrations at meetings of health professionals, at research gatherings, and
in publications, but also through the growing reputation of the service in terms of
speed, accessibility and relevance to users’ needs. The current awareness service that
used to be limited to scanning journals as they arrived in the library, now has
international scope as each update of MEDLINE provides a comprehensive scan of
3,700 medical journals for the current research interests of 65 individual recipients.
Material for CHIZ is now retrieved and modified from in-house MEDLINE, instead
of relying on WHO in Geneva.

The international coverage of MEDLINE has expanded users’ awareness of the number
of journals with pertinent information, and their requests for sources which are not
available in UZML have increased accordingly. This growth has increased the
workload of the interloans librarian fourfold, and emphasized the need to accelerate
document delivery. We are fortunate that along with CD-ROM has come e-mail, so
that ILL librarians have the opportunity to extend their expertise to that technology and
find ways to improve the service. Greater use of interlibrary loans has necessitated the introduction of higher charges for what used to be an almost free service. Planning and policy decisions for that development have been needed, along with negotiations and proposals to the University’s senior administration.

The demand for periodical articles generated by CD-ROM has put pressure on the periodicals librarian. The MEDLINE search feature limiting retrievals to, or highlighting, locally held journals, is used in a large proportion of enquiries. The importance of keeping the journal collection as complete and as accessible as possible is now greater than ever. In times of reduced budgets, the periodicals librarian must also identify the "most used" journals in order to ensure their supply.

The focus of the outreach librarian’s activities has changed considerably. As users outside Harare become aware of CD-ROM databases and abstracts, the requests for searches are increasing steadily. This is another area where e-mail has enhanced the service. Search results can be downloaded to floppy discs and transmitted to health workers in provincial, general or district hospitals. When interaction with an inquirer is minimal, the librarian’s subject expertise and understanding of the enquirer’s needs (often through previous association) becomes very important. Prior to CD-ROM only specific books and articles were requested; now users want bibliographies according to their subject specifications.

The Manager of the Medical Library has had to deal with all these changes as the impact of CD-ROM is experienced at UZML. She has had to learn how to adapt old policies and planning, make changes in management of personnel and materials, recognize and implement different priorities. Adopting information technology has involved sourcing funds from donor agencies, writing project proposals and providing technical and financial reports. The controlling of donor funds, selecting and communicating with suppliers, while bearing in mind throughout the fundamental problem of the long-term sustainability of new services, is an integral part of management since CD-ROM was acquired. These new responsibilities have come about as a
result of the availability of CD-ROM and the recognition of its many benefits to a library responsible for providing effective and current information in a developing country.

Dealing with other libraries to increase cooperation, and address the important issue of ownership versus access, is one aspect of resources management which has risen to greater prominence as a result of the introduction of CD-ROM. This policy is an attempt to maximize access to expensive resources, particularly periodicals, by giving equal emphasis to acquisitions and document delivery. This represents considerable modification to the priority traditionally given to acquisitions.

Not only the management of human, financial and standard library materials has been changed by CD-ROM. The perennial problem of the use of space has acquired a new dimension in a library with conventional design. As the service expands to meet the demand, location of new workstations is a challenging question. New electrical outlets, furniture and money for this must be provided. Decisions must be made concerning the hardware itself, about appropriate capacity for present and future requirements of MEDLINE and other databases. The question of networks or stand- alones must be addressed; what other equipment, e.g. scanners, laser printers, microfiche reader printers are needed to support and enhance the facility, especially when full text databases on CD-ROM are added to our collection? In our particular situation, these questions are sometimes difficult to answer because we are local pioneers, being the first library in Zimbabwe to offer a public CD-ROM service. We cannot rely on the experience of others in a similar situation.

Resource management has another dimension. Once expensive equipment has been acquired some well informed decisions must be taken concerning who should use it, how and when. How can the obvious benefits of users operating the systems independently be balanced against the damage they might do, especially to vulnerable printers? There is the ever present threat of computer viruses coming in from the increasing number of searchers downloading information instead of printing it. The question of sustainability is never far from our minds. Our donors have been very generous but how do we ensure viability for a service which has already become an
integral part of the library? Managing library resources effectively often involves assessing their use; how much, for what purpose, by whom? The CD-ROM system in our library has generated a number of investigations which have supplied us and our donors with worthwhile information about the facility and its use.

The latest research done by the Medical Librarian was on the usefulness of the abstracts retrieved through MEDLINE searches. This was undertaken to discover their importance and value relative to often inaccessible original journal articles, as perceived by staff and senior student users at UZML. The survey showed that 64 of respondents considered them to be a "very useful" source of information. 73% said they sometimes, or usually, offered information complete in itself. These findings will help in future planning of information provision in a situation where rising costs and devaluation of local currency combine to threaten the capacity of the library to acquire current materials of any kind. Although no one would recommend that abstracts be used as a sole source of information, most faculty members would prefer to retain CD-ROM bibliographical database rather than journals costing the same amount. This would be a major change in acquisition priorities, resulting from users' awareness of the value of comprehensive (in scope), accessible and current information.

The management of the invaluable resource - time - has been influenced by CD-ROM technology. The speed and effectiveness of the provision of information clearly reduces time needed for retrieval for most enquiries. The demands and potential of the technology produce not necessarily a "saving" of time, but a reallocation of time. Thus time that would previously have been spent with printed sources is now spent in doing many more searches for individuals than would previously have been possible, developing the skills of users, staff and enquirers alike, in maintenance and problem solving. At UZML, librarians are probably busier now that they were in 1988, as more people use the library and its facilities because of easier and speedier access. Although we are learning to ride the effects of the first wave of change created by the information revolution we must, like expert surfers, know how to ride the succeeding
ones, so that they do not overwhelm us, but carry us forward to other challenges and achievements.

References


