CHAPTER: 4

THE HEALTH SCIENCES LIBRARIES
04. 1. **Scope, Function and Role:**

The World Health Organization [WHO] considers that access to information is the right of every member of the health care team [326] and President John F. Kennedy states:

"The accumulation of knowledge is of little avail if it is not within reach of those who can use it. Faster and more complete communication from scientist to scientist is needed, so that their research efforts reinforce and complement each other; from researcher to practicing physician, so that the new knowledge can live as swiftly as possible; and from the health professions to the public, so that people may act to protect their own health" [205].

A library is called "special" when [a] its collection is special; [b] it serves a specialized group of users; [c] it has a staff with specialized training in a subject matter or methodology; and [d] it offers specialized and personalized services.

The specialized libraries are essential to the development of science and technology. The medical library in
most cases, is a part of medical school and is fundamental to the effective provision of health care.

The growth of scientific literature is only result of the unprecedented surge in research in postwar world channeling biomedical discoveries into improvements in the health of people more quickly and also became the order of the day. It is a major concern to health professionals and librarians, libraries and information centers.

Rapid increase in biomedical information has forced a change in medical practice and medical education. The patient care is often outmoded because physicians lack awareness about important advances in medical knowledge and these shortcomings are caused by delays in the dissemination of advances in biomedicine, procedures and health care practice.

Medicine of this decade will be far more consumer oriented than in the past. The public need to know more about internal medicine in order to make informed choices for quality health care.

The specialized libraries are indicative of the change in subject scope and the users over the years. These were called medical libraries until mid 20th century, later the word "biomedical" was used frequently. Presently the term "health sciences" accompanies a library which deals with the literature covering many aspects of social, environmental
sciences, hospital administration, behavioral sciences, bio-
ethics, gerontology, geriatrics, computer sciences, and
consumer health as well.

These libraries have biomedical or health literature as
their major collection. The health sciences libraries are
something of a privileged sector. These serve users who have a
great demand for information—highly specialized information,
often using high-tech hardware.

The profession of health sciences librarianship is
homogeneous in terms of subject-matter, despite being highly
complex, varied and of the international state of art. The
health sciences librarians are thus ideally situated for
ambitious projects on a national as well as international
level.

The ecological advances and cooperation are now the main
concern to information industry. The health sciences libraries
have accepted and will continue to meet the challenges of
providing the health care industry with all health
information. The future development of these libraries is
closely connected with the development of scientific,
technical and biomedical community.

Relevance of changing role of health sciences libraries
to medical education and quality of patient care can not be
over emphasized in the developed, developing and the third
World countries. The type of library information gives an idea of various sub-population and provides a basis for establishing quantitative standards for these. However, such standards are no longer significant [184].

It is a role of the health care organization to serve in a community as a center for research in all areas of health care, as a center of undergraduate, graduate and postgraduate education including the concept of a "life-long" educational processes and as a center of knowledge for the care of the sick as well as for prevention and rehabilitation.

The infrastructure and technology in the health sciences is changing. The computer has become at least as important a source of information as the classification in a library. The electronic publishing, data banks and special information centers are available. Therefore it becomes obvious that the new information technology will profoundly affect the traditional health sciences libraries and will convert these into an "information management center" that will utilize all forms of technologies to serve as a focal point for the collection and dissemination of scientific information related to health education, research and patient care.

New training schemes will be necessary and new careers need to be offered in the schools of library science by the universities. The libraries of future will need to master data
bank structures and use these effectively, efficiently and librarians will have to be trained in many areas of information systems and system analysis.

There is no doubt that health sciences libraries will have to accept challenges of the future or these will become the storage system of antiquated information. All libraries accept that these can never be self sufficient. Even the biggest have to rely on access to the holdings of other libraries in order to satisfy the requirements of their users.

The process of carefully exploiting technology, of paying more attention to the needs of user, libraries, and of working together with other document delivery centers, often with support and encouragement of communities, should lead to a general improvements in document delivery practices across the state. Because of the characteristics of biomedical and health literature and its use, health sciences libraries are one of the first groups to benefit from these developments.

The health sciences libraries vary widely in line with the purpose and goals of their organizations. The institutional goals are summarized in health care organizations as "teaching, research and patient care".

As in any special library, the emphasis here is also on serial collection because it has records containing results of research and advances in the latest therapeutic and
diagnostics in the health sciences. The emphasis here is in using recency and need to use the latest tested information in the care of patients. The serial collection is again refined when the research either basic or clinical or both is the goal of the parent institution.

The libraries are viewed as education support units, and their existence has been intimately linked to curricular goals of their institutions. The collection development has been formulated in good measure in response to formal eduction and CME needs. The library assumes that its users are living human beings in the community and this has therefore led to offer hastily produced services to them [110].

There are different types of health sciences libraries: hospitals, colleges, commercial societies, foundations and allied health sciences; professional and government agencies, etc.

The traditional views of libraries as passive entity and stereotype of librarians as non assertive partners in the educational process are major barriers in the development. To many a library is a repository of knowledge, to many more it is a refuge, a quite and tranquil place for study and research. These two features tend to dominate ideas of its role.
The users recognize what they do not know. It is a success in getting them out of starting point and on to a race track; but the race has no finish line, not at least in the foreseeable future.

It is a well known fact that learning of the existence of a collection likely to contain information needed and yet not being able to have access to that publication is one of the most frustrating experience a user can have. Exposure to literature of clinical importance will help clinicians to evaluate better the new diagnostic and therapeutic procedures that are aggressively marketed in an increasingly commercial era [245].

The inadequacy in the health sciences libraries is due to the fact that the funding to these essential units has not kept pace with funding of biomedical research [60]. A poor library is often worse than no library and unless excellent libraries are available, how can medical practice and patient care be expected to move forward? [316]. The relevance of changing roles of health sciences library to biomedical, health education and quality of health care can not be over emphasized in the developed, developing and the third world countries. During the next twenty years, the libraries will be re-tooled to function as the hub of information network of medical centers [335]. Fear of professional isolation can turn
physicians away from rural communities and they have indicated that among possible health services, library services have extremely high priorities [73].

By tradition libraries and librarians have operated service concept, but this notion has come under attack in recent years. Instead the librarians should use marketing concept, which focuses on developing and maintaining exchange relationship [19]. The market concept requires that the users' needs are identified and service developed to fill them, only then the users may begin to see libraries not as storehouse of books, but as selective information processing agencies.

The users of these libraries are extraordinarily impressionable and there is no doubt that the decor of the library and the demeanor of the librarian play large roles in developing the correct attitude towards scholarship [233].

04. 2 The Users:

Service to users, in the broadest sense, includes all library functions as the ultimate goal of a library is to satisfy the users' needs. A distinction is usually made, however, between technical and public services. The technical services include administration, collection development, other resources, and organization of materials which are of indirect assistance to readers. The public services assist users directly. Until the later 19th century the emphasis in library
work, throughout the world, was on the preservation of reading materials, not on encouragement or making the collection convenient to the users. The idea is changing in the developing nations now from preservation to use of materials in libraries. This is one of the measures of progress in librarianship.

The by-product of information explosion resulting from the vast phenomenal research, growth of sciences—biomedical, health and general—and technology has also resulted in long succession of studies on user behavior and the use of information channels. Over a thousand library user studies and their behavior by the end of 1977 have been published [79].

The following seven factors affect book availability in health sciences libraries that in turn affect the user satisfaction [315]:

[a] User bibliographic errors;
[b] Collection development policy errors;
[c] Acquisition policy failure;
[d] Circulation policy failure;
[e] User search errors;
[f] User catalog errors; and
[g] Library failure.

Three studies of users and circulation by Trueswell [375-377] in academic libraries suggest that libraries might
satisfy 90% of the needs of the users even with 60-80% reduction in collection. These studies do not, however reflect the status in health sciences libraries and the observations of Trueswell do not hold good in these special libraries.

The demands are indicators of uses, and uses of demands point to a want or need. A want is the expression of a need. Without knowledge where to obtain data and information, no amount of willingness will do more than convince library users that librarians are there to help. All health care professionals have a right to access to health sciences libraries [200].

The users in such special libraries are primarily professionals [1]. The needs of the users must be the focus of how libraries are developed, and what librarians do. The libraries must have to begin an end effort with users and their needs and without this, goals can not be achieved. It is often useful to stop thinking, for a moment, of the user simply as working in a particular discipline- but to consider what approaches the user is adopting to solve the problems which is generating his/her information-seeking behavior and its use [130].

The nature of users in these libraries place a premium on their ability to make available information quickly from its collection and if not found, obtain or find it elsewhere. This
accounts for two notable characteristics of health sciences libraries.

[a] Putting immediate service to users well ahead of the demands of technical processing of materials; and

[b] Uniquely heavy use in ILL and stress on speedy delivery.

The information demands that the health sciences library takes an active role in the educational process with the proliferation of information. The librarians must accept new roles and teach users efficient techniques for evaluating and processing information. The expanding accountability to the needs of users— an accountability that requires librarians to help their users make maximum use of library resources. Based on this, the health sciences librarians have a responsibility to see that the library resources are used by people who need them and because of this reason teaching libraries are no longer optional, these are imperative [273].

The library users are intelligent but more concerned about immediate satisfaction of their information needs [162]. They will reject any library that is inconvenient, uncomfortable to use and does not provide access to the materials they need. They will however, support those libraries that satisfy their needs.
04. 3 Users' Information Needs:

To maximize the impact of library services, the librarians must know something about their users. Every user is a unique population. The librarians like to know who uses libraries, what services they need, and how frequently they need, etc. They want to know how to influence non-users of library.

The characteristics of user population should assist or influence in:

- Collection development;
- Collection revision;
- Collection arrangement;
- Reference service; and
- Current awareness service etc.

The users must be asked to judge the library collection, services offered, etc. based on relevance and recency. Information on users can be obtained by use of a well designed questionnaire [61, 93, 128, 223]. To assess users, their characteristics and information seeking patterns, user surveys are essentially undertaken. These surveys fall into four categories [125]:

[a] General audience use inside library;
[b] Special audience use inside library;
[c] Readership surveys- who read what book,
journal, etc.

[d] Communication patterns and information needs of different types of specialists.

Most user studies fall into category four above. Four forms of user studies have been identified [80]:

** Descriptive: describes current situation;

** Perspective: suggests possible modification;

** Reactive: is undertaken in response to complaints; and

** Provocative: anticipates future problems or new directions.

Effective systems must be designed to satisfy user needs. Various techniques questionnaires, interviews, and library statistics are used to find out the habits of users in the use of information [223].

The users come to a library with variety of reasons. The students come to use study facilities; consult books and borrow materials; get answers to their queries; clinicians come to library to browse latest issues of periodicals; keep up with new advances and review literature. They all come more frequently when the access to materials and library services
is convenient, and their first visit is successful and satisfactory in finding out what they require.

Therefore the first condition to satisfy users of the library is the management and the second and last is the management of collection. No matter how well the book and periodical collection a library has, if a user does not find an item easily and immediately, the entire collection is of no use to the user.

A health sciences library, whether large or small, gives high priority to the rapid location of materials for user. The requirements of speedy service is a principle factor in the development and refinement of any circulation system in the library.

The users, if they are to exploit the potential of a library, need more flexible interplay between their requirements and the dictates of a health sciences library. Use has been mostly explored because it is quantitative and is easily measurable [128].

The access to library collection open versus closed- has great impact on users. The users in a closed-stacked library can not browse through the collection and must have to wait for the item to be brought in for them by library staff. They are therefore totally dependent upon the form and quality of library catalog [324, 346] which must have extensively
provided subject headings. The user interface is most important, otherwise the system will fail.

04. 4 User Education:

Even with the best developed efforts, future information system will require user education. Every library, whether or not it is affiliated with a teaching organization, must provide user education program [65]. The librarians’ traditional goal of end-user education was obstructed by the need to access databases through complicated protocols [164]. The situation has now changed and simple protocols are made available for users to retrieve at their leisure information from user friendly computerized systems.

Instructions in library use are extremely important [2, 3, 34, 85, 157, 233, 238, 250, 251, 328, 339, 374, 408-409]. Each health sciences library must provide user education which is essential if it has to provide effective document and information retrieval and dissemination. One problem in teaching library use is deciding who should teach; and another being whom should be taught and finally what is to be taught. Answers to the problem is a Librarian should teach; all health professionals should be taught; and the basics in information retrieval, where to locate information required such as indexing and abstracting periodicals; handbooks, cyclopedias, and computerized information retrieval—such as On-line
searching should be considered as adequate in teaching the users in use of the library and its resources.

The education to utilize a variety of biomedical and health care literature and documents is one of the most important features of health sciences libraries. Whatever types of services a library offers, if users are not trained in the proper use of special reading materials, they will not be able to access all information they require and will not be satisfied.

It was recommended in the early part of this century to provide somewhere throughout the course in medicine, an instruction in the use of various indexes and bibliographic reference works by a librarian [143]. The instruction in library use is considered most important, only few have strongly advocated or have participated actively in a formal teaching effort [252].

In a survey [395] of 625 physicians, 80% used journals as their source of information and only 24.2% of physicians approached the librarians for help; 42.1% conducted the searches for references either on a computer or manually by themselves. The study also shows differences in attitudes of general practitioners, family physicians, internists, obstetricians and pediatricians. About 30% of this group did their own searching and over 40% approached the librarians for
required assistance in either locating the information or the sources of information. The survey therefore clearly indicated that most of physicians largely depend on librarians for their information needs.

In absence of a structured library education for medical students, commencement of training by health sciences librarians becomes useful [283].

The librarian’s traditional goal of end-user education is usually obstructed by the need to access database through complicated protocols [167]. It is library’s routine task to teach users how to use library and its collection more effectively. Bradigan [42] points the needs for user education as a systematic means of assisting all future physicians to develop information retrieval and management skills.

The literature search should be regarded as a "method" just like treatment or diagnostic procedure [275, 276]. The librarians must participate actively in educational programs of their parent organizations by instructing individuals in newer concept of libraries, their services and in the usage of special tools with which not all users are familiar.

Authorities have advocated different forms of user education programs [1, 232]. In a study 246 students were subjected to a three day session to help them research social and medical problems. A professional librarian was providing
logistic support for students in the utilization of biomedical literature. The study concluded that overall library skills improved to 60.9% from 10.8% [272].

The allocation of staff time to undertake user education activity is an investment in the libraries' future, which will result in a more intensive use of library and more vigorous support for library services. The most basic form of user education is orientation to the library. Because every library is unique in its physical layout and in the services it provides, all users new to the organization require such introduction to its library facilities. The library role of end-user training is important than ever and user training requires flexibility. No one training plan appear to be the final. The user education takes several forms:

04. 4. 1 Orientations:

The orientations last for a very short time and the new comers are taken for library tours and explanation is given by one of the library staff highlighting the important services offered by the library, a briefing on library collection, etc. New approaches to User orientation programs have been presented by several authorities [3, 34, 117, 157, 232, 238].

04. 4. 2 Brochures and Library Guides:

The printed materials covering information about the library serves as a form of orientation for library users.
Though it is not very effective, it will highlight the silent features of a library.

04. 4. 3 Tours:

These are of two types:

[a] Guided; and

[b] self-paced.

The guided tours are an extension of the Orientation program for the new users. After the orientation, question and answer session follows.

The self-paced tour are alternative or a supplement to the guided tour. These are more advantageous and flexible both for the library staff and the users. Such tours are available for users at their convenience. The major requirement for such tours is a printed floor plan of the library accompanied by a printed or audio-tape presentation.

04. 4. 4 Bibliographic Instruction:

Preparation of written profiles of user instruction require written statement of instructional objectives, provision of sufficient financial and staff support and participation by users in the development and evaluation of such programs [13].

The bibliographic instructions in health sciences libraries differ in contents from the practice in academic libraries [14]. The emphasis here is in teaching the students
to use journal literature for current information, explaining them of the proper use of major indexing and abstracting journals and of computerized On-line services if available.

Frankberger [143] suggested that somewhere during the professional course of medicine, students be given instructions in the use of various index and bibliographic tools by a librarian. Several authorities have advocated for formal courses [85, 152, 214, 233, 250, 328, 374, 408-409].

04. 4. 5. Modified Tours:

A library tour accompanied by an orientation is very helpful for the users. These tours are an extension of orientation tours. The users are left at the end of tours to move around and browse the library collections, familiarize with the library, services and collection.

04. 4. 6 Point-Of-Use Program:

The point-of-use instructional materials including Audiovisual materials are physically available near the reference tools they describe. This concept has become popular largely because materials are designated for self-paced learning, individual consultation and are available when the staff is not around to assist.

Such materials have to be developed based on the collection and utilization of library materials in an individual library. The commercial publishers often include
instructional package for the use of a particular work with subscription, e.g. ISI's charts for Science Citation Index, Social Science Index; and Excerpta Medica's "How to use Excerpta Medica" descriptions packed in tear-off tables. Chemical Abstract also brought out a Slide/Audio Tape presentation on its use. Similar programs are available for Index Medicus and Nursing Index etc.

04. 4. 7 Class Room Presentation:

The health sciences librarians often present guest lectures to describe the library, its collection and the services it offers to the users of the organization. These are not however, regular.

04. 4. 8 Formal Courses:

The efforts of educated and trained biomedical librarians will be useless if the users of the health sciences library are not well informed on how to use the services offered and available. It is therefore desirable to include training on the use of libraries by medical students and researchers in academic curricula to facilitate proper utilization of library resources [318].

The allied health schools are more receptive to the introduction of bibliographic courses [384]. Lancaster [222] suggests an outline of topics that should be included in bibliographic course for users and that the bibliographic
tools specific to a discipline should be presented in the light of information retrieval theory in general. This approach enables users to derive immediate benefit from the course. Several formal courses in the health sciences bibliography are now being offered by some professional schools of medicine, nursing, dentistry, pharmacy and allied health sciences around the World. A survey of 105 major health sciences libraries in the US identified only 18 medical schools giving formal courses of instruction of this nature [251]. The library instruction program which was developed in cooperation with medical faculty at the University of Tennessee is working satisfactorily since 1978 and remarkable improvements in use of library and collection has been recorded [152]. The benefits of formal courses by medical librarians to the health professionals are documented [238, 252].

04. 4. 9 Self-Paced Courses:

These courses rely very heavily on audiovisual devices. Each student is given time to study the course and then given an assignment in the usage of library materials. A self guided tour with either an audio or a video presentation will immensely help and will not disrupt regular library operation [232].
04. 4. 10 Workshop and Seminars:

The health sciences courses in most schools are already overloaded and it is not possible to include bibliographical instructions or use of medical libraries among these. Therefore the key skills for better utilization of library materials are taught in workshops and seminars. Because of user education programs in libraries, the librarians' role as a resource for end-user system is strongly supported [237].

04. 5 Marketing Library Services and Use:

Too often librarians simply abandon the whole idea of marketing when their first attempt does not succeed as well as hoped. It is for the individual users to decide what is good and that to ignore this important truth in planning marketing strategy, which may lead to its failure.

Marketing is a technique and must be directly related to parent institutional goals or mission and to users' needs in relation to this mission. If a library is to plan marketing, the first is to define the needs of market place—its users. The library will analyze its unique resources to see what kind of match might be obtained. For this an audit of environment in which the library operates must be taken including its strength and weakness. The librarianship is service profession [43]. In the health sciences librarianship service is provided not only to the health professionals, but also to the people,
and patients. Therefore the drive for service is extremely strong. A library is fundamentally concerned with the analysis of its market— the customers— the users [411]; and with libraries focusing on users rather than themselves, the end-user satisfaction becomes the "librarian's reason for being" [119].

By assuming what is needed and wanted and by seeking to provide services efficiently, the professional librarian may ignore user needs and the level of satisfaction thus defeating the purpose [162]. The following needs are to be considered:

[a] What services are to be provided?
[b] Which services are the most needed?
[c] How quickly has the library to respond to the urgent needs?
[d] How to identify different segments of users' requirements?
[e] What mechanisms are to be selected to give access to service by users?
[f] Identify user needs— students, clinicians, teachers, postgraduate students, allied health professionals and health care administrators have all different needs;
[g] Once these are identified— presuming that these are in line with mission of the
organization- the library can define its goals and objectives. Based on these needs services will then be developed to ensure user satisfaction.

It is therefore fundamental that librarians continue to view the libraries as a market place trying to sell products—services to the customers— who are users with different information needs. His/her satisfaction is the base on which to build the services of a library. An user who receives information in a timely fashion from a librarian or his staff who are friendly and helpful, will continue to use the library and will promote it with others. All satisfied users of the new technology CD-ROM will be repeat users and will remain library’s greatest advocates. All such users will then become members of the "Friends of the Library" group who will play remarkable role in promoting library, its resources and services.

If "Friends of the Library" group could only include members such as hospital administrators or the deans or principles of medical schools, this relationship with these authorities will become essential for the librarian or his/her staff to create more influential kind of behavior towards libraries. Candid relationship based on mutual respect will promote the library with these groups and will ensure backup
support the library needs to implement its program successfully.

Many other intra-institutional groups may be targeted for inclusion into "Friends of the Library" group in promotional efforts especially in academic or health care environments. Certain groups outside the library’s institution—such as Associations, private physicians and hospitals, drug companies, politicians, etc. should also be part of library’s promotional group.

Cooper [72] suggests that invitation to medical staff to hold their departmental meetings in libraries will help promote the use of libraries and will work as a marketing strategy. Messerle and Hill [266] on the other hand suggest a combination of promotional tools and personal contacts for marketing strategy in health sciences libraries.

04. 6 Collection Development in Libraries:

The world book production, especially in the health sciences and biomedicine has followed an upward trend. A study reveals that the existence of a collection development policy does not appear to influence the process of decision-making in four major university medical libraries [216].

Hewitt [181] describes acquisition as:

"Acquisition is a professional specialization learned almost entirely on the job...Almost
all librarians must deal with acquisitions as users of a service critical to their own functions, yet few are prepared to interact with acquisitions in an informed way."

Acquisition is a delicate process of balancing available funds against relevant portion of available materials necessary to meet the needs of users. Deshpande [102] feels that the collection to be responsive has to be selective which will save money in processing and shelving.

Public health is a multi disciplinary field ranging broadly across the health care spectrum and in the light of this diversity, the selection of basic reference materials in the field is a complex task [218].

04. 6. 1 Books:

Books and monographs are being published during an almost unprecedented surge of progress in biomedical science and technology. This is rapidly advancing the knowledge and changing the techniques of caring for the sick.

A glance at the Brandon and Hill’s "Selected List Books and Journals for the Small Medical Library" [45-50] [Fig. 9-10] will show that the prices of biomedical and health care reading materials continue to rise. These prices have skyrocketed. A $15.00 book in 1965 was costing $67.83 in 1987, which means there is 352.2% increase in book prices between
PERCENTAGE INCREASE IN PRICE OF READING MATERIALS IN THE HEALTH SCIENCES 1977-1987

PERCENTAGE INCREASE

0 5 10 15 20 25 30 35


18.3 14.8 23.3 12.5 16.3 11.3

20.8 23.6 28.8 16.3 20.8

JOURNALS BOOKS

Fig. 9
PERCENTAGE INCREASE IN PRICES OF BOOKS & JOURNALS
IN THE HEALTH SCIENCES: 1977 TO 1991

Fig. 10
1965 to 1987. The prices between 1981 and 1987 jumped by 57.89%. Between 1977 and 1987 the increase in the prices of biomedical books is 140.7%. The prices of books have gone up on an average 19.77% between 1977 and 1991 [Fig. 11]. These will be higher in the 1990s as paper cost are expected to rise between 12% to 20% and printing cost will rise by about 5% to 10% and so will be the postal charges which are expected to jump by 25%. The only outcome of this sharp increase is the resource sharing among libraries as no single library can aspire to having a "comprehensive collection" [182]. A study indicates that speciality books cost more for e.g. books on Otolaryngology shot up from $8.88 in 1965 to $119.87 in 1989; Genetics from $7.33 to $79.54; Pathology from $14.24 to $105.65; and Preventive and Social Medicine from $11.50 to $81.19 [197] [Fig. 12].

In the past, book selection in college libraries was regarded as a faculty prerogative, on the assumption that they were experts in their fields and were best qualified to determine what books were important and desirable. With the qualified health sciences librarians now in charge of the libraries, particularly in the United States, the attitude has undergone considerable changes so that the collections are developed by these professionals. The faculty members however, have a say in the collection development but the final
PERCENTAGE INCREASE IN PRICES OF BOOKS & JOURNALS IN THE HEALTH SCIENCES: 1977 TO 1991

Fig. 11
decision rests with the Acquisition Librarian. The Acquisition Librarian will consult each of his subordinates— the Reference and Circulation Librarians for input and then arrives at a decision to add certain materials. The Acquisition Librarian relies on scholarly reviews in specialized periodicals about health sciences and biomedical books in addition to advice from the faculty.

Ideally annual verification must be conducted to maintain accurate record of loss rates. Several libraries in the developing countries do undertake a stock verification or inventory of library collection on a period basis. The purpose of this inventory is to:

** weed out useless collection;**
** identify books or items requiring mending;**
** identify mislabeled items;**
** verify Call Numbers and Accession Numbers;**
** produce a list of items lost to determine the cost and what action need be taken.**

Higher book prices in biomedical sciences and increasing tuition cost makes library collection more vulnerable. Dixit [109] has studied of loss of books in some health sciences libraries in India which revealed after annual stock verification. He finds the stock verification is time consuming and a waste on the basis that the direct and
indirect cost involved in this tidiest task is much higher than the cost of the lost books.

Alfred Brandon and Dorothy Hill [45-50] have given a selected list of books and periodicals that are basic minimum for a small medical library. As can be seen from the [Fig. 13], there has been hardly any increase in the number of books and periodicals. They have been up-dating their lists once in every two years by deleting old books and replacing these with up-to date and new editions. The increase is periodicals is only 4 between 1981 and 1991. This has assisted small health sciences libraries with collection development. In the US, most of the libraries have accepted this list as a "Standard". The situation in India is different. Being a Tropical developing nation, the list could be adopted with variations both in books and periodicals with inclusion of some Indian and British titles and by deleting super speciality items.

04. 6. 2 Periodicals and Serial:

The serial make up the largest portion of the collection of these special libraries and are designed to provide rapid and accurate dissemination of current information to practicing clinicians, medical educators and health professionals. The periodicals constitute the most important and expensive component of a health sciences library collection. The physical format and bibliographic identity of
serial are always subject to frequent alterations by the publishers [270].

As periodical subscriptions in libraries increase it becomes appropriate to consider the services of a subscription agency, who acts only as a liaison between the library and the publishers in an effort to cut paper work and time in mind boggling task. The task of paper work though is not always obvious, it is significant. For e.g. a library with about 100 titles must place equal number of orders with publishers. Consolidation of these 100 orders will assist in a single order, single billing and single payment which will save considerable amount in labor cost alone.

The greatest jump in prices for biomedical reading materials is in periodical subscription. Between 1965 and 1987 the prices shot up by 512.44% [Fig. 14]; and between 1981 and 1987 alone subscription rose by 62.33%. A periodical that cost only $13.90 in 1965 will cost $126.52 in 1991. The prices of British periodicals—biomedical and others rose from 82.57 sterling pound in 1986 to 91.39 in 1987 and 103.55 in 1988. On an average the prices rose by 11.6% on all British periodicals [239].

During a ten year period from 1977 and 1987 there is an increase of 142.25% in the subscriptions. It is vital, it is argued, to consider the subscription prices in context of the
BOOK & PERIODICAL PRICES FROM 1965 - 1987
COMPARISON

Percentage Increase


BOoKS  PERIODICALS

Fig. 14
quality and quantity of information provided in each journal
and that the prices of periodicals alone does not mean
anything [40]. A selected 118 of the 138 journals from the
Brandon & Hill list costing $1,469.65 in 1967 were to cost
$8,872.35 in 1987 on an average increase of 340.4% [217].
Although there have been substantial increases in the prices
of American medical periodicals over the 1980s, the real
crisis is precipitated by the decline of American Dollar
overseas. The cost of American Dollar is reduced by 70% over
the years- from 100 units in 1965 to 30 units in 1989 [289].

The 118 basic periodicals that have been included in the
Abridged Index Medicus [AIM] that are considered as a minimum
for a clinical medical library entrusted to provide biomedical
information to health care team cost US $16,570 in 1991. A
further selection among these 118 titles will be achieved by
cutting down the Nursing and Allied Health Sciences titles.
The list does not include any Indian Periodicals. The total
number of essential periodicals will be increased to about one
hundred and fifty including between twenty and thirty
carefully selected Indian periodicals in clinical medicine and
its branches useful to users. The amount could be further
reduced by utilizing US Domestic Institutional Rates available
only from US Subscription Agencies. A sum equal to
approximately US $4000 be saved by utilizing a new system subscription not known to Indian librarians.

This system utilizes International Subscription Agencies that agree to supply all those US and British Titles at the US or UK Domestic Institutional Rates. The US Domestic Institutional Rates are lower by about 25% than the Overseas Institutional Rates. There are some publishers, who demand that the final destination of the subscriptions must be given while placing subscription orders. As a result of this condition over 70% of titles can be obtained on US/UK Domestic Institutional Rates.

One single order and one single payment draft to the agency, against 100% bank guarantee, will have to be made at least three months in advance - in October or early November each year to enable the agency to place order and pay for the subscriptions to the publishers on behalf of the library.

The agency orders, pays, receives, checks-in issues, collects, packs and forwards packages on periodic basis by Air Freight or any other transport method dictated by the library. It is helpful to obtain monthly packages. This way library will have on its shelves, for example in March, the January or February issues of periodicals.

The national carrier, the AIR INDIA will be of immense assistance in this regard. An agreement can be reached between
the Regional Network Authority and the Airline. The Air India operates daily flights from New York and London to Bombay. Thus transportation of the periodical packages will be easier, economic and timely.

The library must pay a small service charge to the agency to handle the periodicals in addition to the subscription rates. This varies between 10-12% of the total invoice amount. This amount will be paid of the savings of 25% that will result by choosing this system. Even with the payment of service charges, the library will be able to save between 10-15% of the total subscription amount. It is imperative that a library gives careful consideration to appoint only the agency or agencies that have stood to the test and have been recommended by their colleagues either at home, nation or abroad. The steps to be considered, while selecting a subscription agency are [58]:

[a] Determine the need for library agent which requires special care and planning;

[b] Determine which agent can most easily fulfills those needs;

[c] Check carefully the promises, services, charges and restrictions made by the agency;

[d] Ask colleagues what they think of an
agency, their experience. It is possible that their needs may be different.

The receipt of subscribed periodicals makes it mandatory that a library keeps a track of those issues that have not been received. This is more so, in situations where a library has direct dealings with publishers. It is important for such libraries to ensure that the claims for missing or overdue issues are sent regularly to the publishers. In situations where, a subscription agency has been utilized, it is helpful to send claims once in three months for all titles subscribed by mailing the agency a Status Report. Smith [354] suggests an useful and workable claiming schedule for periodicals ordered directly with Publishers:

[a] Daily: Ten days from date of receipt of last issue;

[b] Weekly: Two weeks from date of receipt of last issue;

[c] Monthly: Two months from date of receipt of last issue;

[d] Quarterly: Five months from date of receipt of last issue;

[e] Others: One month after usual expected time of arrival.
While another source recommends a waiting time of 60-90 days for receipt of domestic titles, and up to 120 days for foreign titles; larger delays are unfortunate but are not unusual [204]. Even if a library is utilizing an agency with services as explained above, it is imperative that regular reminders on the above schedules are sent to this Agency to obtain missing and or overdue issues of periodicals subscribed. No doubt that the agency will claim any missing and or overdue issues of all titles, it is however, wise to include claiming of issues in the policies and procedure manual.

The total number of periodicals and serial available in the 44 health sciences libraries of State in 1986 was 1130; some health sciences libraries lack even core periodicals and serial [209].

04. 6. 2. 1 Systemic Selection of Periodicals:

The citations should not be the sole determinant in selection of the periodicals [413]. An alternative is to evaluate the importance by rating the titles according to the frequency with which they are cited. It is also important that periodicals already subscribed by the library that have long runs of back volumes are to be evaluated before a decision is made to discontinue these titles. Hamaker and Grinell [166] recommends a better understanding of the state of special
libraries, a very close monitoring of the developments in the literature, an analytical approach to libraries and their collection to overcome the stagnating increase both in the new journals publications by publishers and the subscription prices. In principle the selection of a periodical title must be based on Use; Relevance; and Availability Around and the following formulae may assist:

Periodical Usage:

\[ Ur = \frac{2 Pr + 2 Cr + 1 Sr}{5} \]

- \( Ur \) = Usage Rank
- \( Pr \) = Photocopy Rank
- \( Cr \) = Circulation Rank
- \( Sr \) = Shelving Rank

Periodical Relevance:

\[ R = 3 Qr + 1 CCr + 2 Hr + 2 JCRr \]

- \( Rr \) = Relevance Rank
- \( Qr \) = Questionnaire Rank
- \( CCr \) = Current Content Rank
- \( Hr \) = Hit Rank
- \( JCRr \) = Journal Citation Rank
Periodical Availability:

\[ Ar = 10 - (EA \times H) \]

- **Ar** = Access Rank
- **EA** = Ease of Access
- **H** = Held
- **Yes** = 1
- **No** = 0

Journals Worth:

\[ JW = \frac{3 \times Ur + 2 \times Rr + Ar}{6} \]

- **JW** = Journals Worth
- **Ur** = Usage Rank
- **Rr** = Relevance Rank
- **Ar** = Access Rank

Journals Not Received:

\[ Ur = ILr \]

- **Ur** = Usage Rank
- **ILr** = Inter-lending Rank
Cost:

\[ C = Sc + Ac + Pc + Bc \]

\begin{align*}
C & = \text{Cost} \\
Sc & = \text{Subscription Cost} \\
Ac & = \text{Accession Cost} \\
Pc & = \text{Processing Cost} \\
Bc & = \text{Binding Cost}
\end{align*}

Having given the ways to improve on the systematic selection of periodicals in libraries, one must hasten to add that no single system or formulae may be right for individual libraries in the special task. It is useful to consider the following:

** If the cost of purchase and maintenance of a periodical title does not exceed the cost of satisfying the demands for that title as an Interlibrary Loan, then the title must belong to the library’s collection.  
** If the cost of purchase and maintenance of a periodical title exceeds the cost of satisfying the demands of an user, then the title should be dropped.  
** A title should only be in a library where there is more demand for it.  
** Each network library therefore is to acquire,
04. 6. 3 Audiovisual Materials:

If the medical communication in the future is going to make use of audiovisuals methods, the communicators, publishers and those incharge of producing audiovisuals must pay attention to the particular values that these materials share with no other media. This comes down to two essential factors: [a] the ability to show movement; and [b] the ability to demonstrate human communicating skills. For e.g. The surgical procedures require showing of movements; non-verbal communication etc.

Audiovisual materials [AV] are indispensable collection for every library. Variety of AVs are available- microfiche, microfilms, 35mm and 16mm films, video cassettes, audio cassettes, slides and combination of any of these.

AV are known for their compact size and fine format and production. More importantly AVs provide an user with actual condition of the picture. Users are able to see either 2 or 3-dimensional figures. Lately the biomedical video cassettes have stormed the market which helps viewing of exact condition of a patient thereby giving the first hand information on their therapeutic procedure. For e.g.

A video on endoscopic cholecystectomy

will provide a surgeon with actual
operation procedures as against reading in printed book.

The use of audiovisual materials is one of the enhancing understanding of issues which may well be inadequately understood at present because of the sheer volume of printed materials that are currently being produced and available in biomedicine.

A checklist is provided for all aspects of audiovisual facilities planning and design for health sciences libraries [183]; and a list of selected 105 periodicals on Microfiche for the health sciences libraries of the developing nations is justified [332]. Because of the above reasons, these are popular and considered essentials for health sciences libraries.

04. 6. 4 Securing the Collection in Libraries:

Both in the developed, developing and the third world countries, the risk of loss of books can not be discounted. The loss of books from libraries accounted for over 15 to 25 million British Pounds in UK; $125,000 in New York; $100,000 in Stanford; and in 1978 ten thousand stolen library books were found from a flat in England [37, 151, 236, 359, 372].

It is advisable to consider the fool proof electronic security system that will avoid loss of expensive reading materials from the library’s shelves. In US twenty-five
hundred electronic library security systems were working in 1980 [38]; and over 6600 around the world during 1979/80 [211] and in 80% to 99.93% of cases these electronic systems were effective [210].

While considering to install a electronic security system one must consider the following [15]:

01. How much book loss per year?
02. How much it cost library annually?
03. What items are stolen/Lost?
04. Are the losses significant to warrant an electronic security system?
05. Evaluate the available Security Systems;
06. Choose the system best suited with less flaws.

A list of known library security system suppliers is appended. The approximate cost of different electronic security system available in the 1980’s are given which may only be taken as guidelines while budgeting for the requirements. The prices have now increased by about 60% [Fig. 15]

04. 7 Personnel:

The staff is one of the three essential elements of a library as noted by Ranganathan and is one of the most important among this Trinity. The staff is the support for
LIBRARY SECURITY SYSTEM VENDORS FROM THE USA

[Fig. 15]

=======================================
CHECKPOINT SYSTEMS INC.
P.O. BOX 188 TEL: 609-848-1800
THOROFARE, NJ. 08086
GAYLORD LIBRARY SYSTEMS
Division of GAYLORD BROS, INC TEL: 315-457-5070
SYRACUSE, NY. 12221

KNOGO CORPORATION TEL: 516-822-4200
100 TEL STREET TLX: 57805 KNOGO R
HICKVILLE, NY 11801

LOSS PREVENTION SYSTEM
LPS INTERNATIONAL LIMITED TEL: 404-432-0010
2775 CURTIS DRIVE
SMYRNA, GA 30080

SENSORMATIC
500 NW, 12TH AVENUE TEL: 305-427-9700
DEERFIELD BEACH, FL 33441

SENTRONIC INTERNATIONAL
Division of GENERAL NUCLEONICS, INC TEL: 216-225-3029
P.O. BOX 0815
BRUNSWICK, OH 44212-0815

3M
LIBRARY SYSTEM 220-9E TEL: 612-733-2851
3M CENTER
ST. PAUL, MN 55144

=======================================
operating people and not substitute for them. Effective staff work requires specific goals and objectives, clear targets, and dead lines [113]. The libraries are professional organizations and as such must be managed by the professionals [123]. For libraries to gain efficiency and effectiveness, the staff must be given responsibility, accountability and authority [56].

The task is to determine how many staff are needed to carry out library's goals and objectives. Size and type of staff and the ratio between professional, semi and nonprofessional or supportive staff is then to be determined. While the size of library can be accomplished based on long range goals and objectives, the ratio for professional and supportive staff is rather difficult to determine.

In the US medical schools, the ratio of professional staff to all categories is 1:2.19 [9]. In the developed world, the most frequently stated staff ratio for a library as a whole is 2-3 supportive staff for each professional [390], even though technical and circulation services require more staff than reference service and in India Deshpande considers 1:3 ratio [102].

An organization will help determine the supportive staff. The following formulae will assist in working out cost per hour per library staff [10] [Fig. 16].
$\text{Salary} + 26\% + [175\% \text{ to } 225\%]$ 

\[
\text{Hours per Year}
\]

[Fig. 16]

[Hours per year are the total number of hours in a year according to 7-8 hours-day, 6 days a week, and 52 weeks a year; 26\% is approximate additional payment for Provident Fund, Holidays, and over time etc.]

The required treats of staff are; commonsense and or judgement; and compatibility which is natural result of a balanced personality.

04. 7. 1 Professionals:

A profession is defined as an occupational subset that is distinguished from others by at least following attributes [141, 156, 188]:

** A body of generalized and systematic knowledge;

** Some general agreement with respect to contents and practices of the discipline and their application;

** Some control over the exercise of its knowledge-based skills;

** Self-control of behavior through codes
of ethics internalized by the process of the work socialization; and

** Cohesiveness of the professional group that sets standards for admission and practice.

The librarianship as a profession on the above criteria has been challenged [148, 281] stating that one of the basic characteristics of a profession is a intensive and specialized training which is not required of the librarianship. If these authorities were to visit health sciences library of today equipped with computers, audiovisual aids, huge indexes and thousands of periodicals, networks and on-line databases which require special intensive training and skills for use, they would certainly categorize the health sciences librarianship as a profession.

The profession of librarianship is established, organized and for the most part unified. It has considerable literature and has built a distinctive discipline although its contents are continuously under review. Despite the diversity, the librarian in whatever speciality, has a common body of knowledge and a basic set of skills. The library science has a symbolization of a triangle with resources, methods applied to organize and the users- the "Library Trinity". The performance
of librarians will weaken if they neglect any of the above basic factors.

The traditional custodial role of librarian has been changing [301] and he/she must function as one of the most important medical educators [385]. In a health sciences library the service is provided not only to the health professionals, but also to people and patients. Therefore the drive for service is extremely strong. The health sciences librarianship is fundamental to effective provision of health care.

In the United States, the basics for education for librarianship were adopted from Williamson’s report based on Flexner’s definition of "professionals" which comes down to the two fundamental concepts: Competence and responsibility. Flexner implied Competence by phrases such as "intellectual operation"; "science and learning" and "communicable techniques"; and Responsibility by phrases like "individual responsibility", "self organization" and "Altruistic motivation". But Hayes [150] regards responsibility as the prime component of a professional, as it characterizes and differentiate the professionals from others.

The calibre of a librarian is the most important and valuable resource of a health sciences library [8]. The skills of the librarian and the staff consist in excelling in the art
of the promotion of use of libraries and its services. Thus the librarian’s role is a teaching role because of the new advents of technologies [195]. The librarians need to know their technical staff; the task they perform and the level of training they need to achieve desirable level of competence and the cost involved in doing so [235]. The librarians are professionals and they do have standards.

A major obligation of the librarian is to direct the staff in carrying out the objectives identified in the plans of the institution. The Librarian must delegate responsibilities, motivate staff, coordinate activities, and resolve conflicts.

The librarian assume three basic services [153]:

[a] To keep up with production of information;
[b] To select, purchase and organize materials suited for organization’s mission; and
[c] Provide bibliographies and bibliographic instructions.

To these we may add one additional responsibility:

[d] To manage personnel.

Now that the patients are seeking damages from their physicians who in turn are seeking damages from their librarians for providing faulty and outdated information Mika and Shuman suggests [269]:
"We must communicate that we are librarians, not health professionals, that we are providing information, not advice, that our information may have been superseded by more recent information, that we can not provide interpretation, that there is certain information they must read for themselves as it might be misunderstood, if read over the telephone. For the protection of our clients, we should learn to use disclaimers...and consider it a professional responsibility to be aware of these precautions".[4].

Librarians are information specialists because they are not confined to a library but operate anywhere the information is available [371]. To function effectively librarians need to have the following managerial skills [169]:

[a] Management Skills which require acute awareness of the needs of the total organization and the user community being served;

[b] Technical Skills are the solid knowledge of nature of information itself; and full range of information resources important to research, education, services for organization, the operation and management of health care
institutions; and the process by which the information is generated, stored, organized and retrieved;

[c] Information Technical Skills are the technical knowledge of information technology to carry out information processing or the understanding of basics of computer programming, data base, management system and of available hardware, their capabilities and limitation;

[d] Communication Skills are the complex that are essential including interpersonal skills and the ability to apply them in the context of information services and operation of information enterprises;

[e] Information Use Skills which are the most important among all. Crucial problems with information resource management may not be technical, but the fact that there is differential use—those know the value of information and those who know how to use it. It means that there must be a clear understanding of medical or health process, of the history of medical and health profession, of structures, of methods, of
research and the terminology as well as philosophy of health care; and

Analytical Skills refer to the professional information work. Information services require an ability to identify problems that could be solved and formulate these in terms of information etc. It means that the librarians must understand the research process of the individual users.

The health sciences librarians of this decade and beyond will need ability to manage a complex environment containing many specialities and interests successfully administer of the different back grounds including politicians. There is a need for the health sciences librarians to identify health information needs, design and programs to meet these needs with satisfactions and obtain successfully the resources needed to carry out these programs.

Librarians do need information on what to provide, how to provide, how much to provide, whom to provide and at what cost.

04. 7. 1. 2 Basic Education:

The current researcher of biomedical and health information is none other than a professional librarian. This professional must therefore be familiar with materials and
publications such as Abstracts, Indexes and their controlled vocabulary and with their many fold computerized services. The education and training of library science is basic and very essential for the manpower development and planning [312]. The education to handle a variety of documents is one of the most important features of health sciences librarianship.

The Indian library schools feel that these have not as yet a stage to impart courses in the essential aspect of this very special profession. The university schools must establish courses leading to health sciences librarianship. The practical and working syllabus required for courses in India are presented [30, 261, 262, 293] which will help establish the specialized training programs by the university library schools.

It is unique and worthy to note that the Chinese National Medical universities have started imparting a five year course in medical librarianship. The first three years are spent in the non-medical training followed by two years of training in library and information sciences. The first batch of students admitted in 1988 are expected to graduate in 1992 [78].

The diverse population of health sciences librarians calls for varied yet coordinated system of postgraduate education involving the associations, libraries and the library schools. The most basic requirement is a Masters
degree in library science with specialization in health sciences librarianship or at least sufficient working experience in a health sciences library. A study shows the variety of basic education background sought by employers of health sciences libraries [366].

When certain qualifications are made mandatory, and or minimum requirements are set for any professional positions in the health sciences libraries, there will be uproars from some peers and professional organizations. Margret Myers [278], in trying to answer a critical question "How closely related to job are the requirements as MLS and MLA certification", writes:

"If the knowledge, skills abilities [KSA] and their personal attributes obtained in the acquisition of a degree, such as the MLS, are substantially correlated with the requirements of the job, there is little probability of being challenged. But if the use of the MLS as hiring requirement results from traditional of expediency and not from a thorough analysis of the job requirements, validity may be questioned". 
In 1986 of 294 professionals positions announced in the US Medical Library Association's MLA News 56% were looking for librarians with on-line bibliographic search capabilities and 25% with certification in health sciences librarianship; 47% with communication skills and 33% with general library skills [366].

The postgraduate education for health sciences librarians is approachable from several perspectives including internships, certificate programs, CE, etc. The more persuasive mechanisms for maintaining standards for professionals is accreditation of educational programs by either state, central governments, by an universities or by professional associations. The certification programs offered by either of the three sources- state or central government, universities, and professional associations function as supplementary means for maintaining quality of professional library personnel.

04. 7. 3 Continuing Professional Education:

The Continuing education [CE] is defined further as [20]:

"Any learning activity used by a professional and which in the minds of the learner builds on some previously established base to extend and amplify awareness or capacity. Activities for which CE units are given and which meet
conditions specified above are considered as CE; however, degree or formal certificate programs are not considered as Continuing Professional Education Activities".

All professionals need to consciously and continuously update their skills in order to meet the professional challenges and changes in health care technology [257]. A glance at the MEDLINE literature on "Libraries, Medical" or Health Sciences Libraries will show that a total of 1,841 articles on various aspects have been published from 1966 to September 1990 in 42 languages of the world, on an average of 74 articles annually. This means that there is a lot being published in professional periodicals that concerns the health sciences librarians beyond those that are included in MEDLINE. Over 80% of these articles are in English. There are only five articles on health sciences libraries that have either been published on Indian libraries that could be retrieved out of over three thousand biomedical and health sciences periodicals indexed in MEDLINE files.

No doubt that there are many more articles on medical or health sciences libraries published throughout the world in periodicals that are not indexed at all. Some Indian Library Science periodicals finds themselves a place in either Indian Library Science Abstracts or Library and Information
Science Abstract [LISA]. How one can locate articles that neither are included either in indexing or abstracting periodicals. Without proper indexing of professional literature, no amount of publication will help a professional seeking literature and will face dissemination problems. The research reports and state-of-the-art articles explaining new trends in the profession and professional education will be buried away. Indian Library Science Abstract does provide coverage to a limited number of periodicals.

It becomes therefore extremely important that health sciences librarians make use of appropriate current literature that can help them perform the tasks utilizing latest technological and telecommunication advances in information sciences. Eaton [118] has provided useful outline of course for staff development for libraries.

04. 7. 2 Semi-professionals:

A new position now beginning to emerge is "Library Technologists". These personnel are capable of carrying out the tasks that were previously performed by professionals—such as circulation or ILL, etc. A library technologist is an experienced support staff member or a semi-professional with college education and working experience in libraries.
04. 7. 2. 1 Basic Education:

The minimum basic education for semi-professionals has to be viewed as regards to the job or task requirements and job descriptions. Since health sciences libraries cater to the professionals engaged in life saving tasks, it dictates that those in charge of providing services to these personnel have minimum education and skills. Therefore a basic degree from a recognized university with sufficient working knowledge and experience in a major health sciences library becomes essential. The basic requirement in addition of the essential education and experience must include an innovative capability and acquisition of skills in handling biomedical literature and users.

Due consideration must be given to the selection process of candidates for the post who have demonstrated ability to contribute effectively towards the provision and dissemination of health information to users.

04. 7. 2. 2 In-Service Training/Education:

It becomes essential that the semi-professionals continue to be educated through effective in-service educational programs and training in the libraries. This will facilitate acquisition of newer techniques to handle variety of biomedical and health materials with varied information that may affect user satisfaction.
04. 7. 3 Support Staff:

It is extremely important to consider the role the non-professionals, such as clerks, typists, and office aides play in a library's progress. The term "Clerical" has demeaning sound and therefore has been replaced by term "Support staff". The classification for support staff must be on the basis of job classification factors as education, experience, complexities or work, manual skills, difficulties, accountability, and contact with users [306].

04. 7. 4 Over staffing:

Over-staffing in organizations destroys motivation, accomplishment, achievement, satisfaction and in the end performance. The formula or the structure recommended by the MLAI Task Force for staff, would have devastating effect. The growth in qualified general librarians at the present rate overshoots the target and is bound to be disorderly and wasteful. There is over-staffing because it is fashion to go in for this or that activity, whether needed or not. There is over-staffing because times are good and has been recommended and approved by the Indian Medical Council and that it is easier to accede to a demand for more than that to fight it for.

It would be wise to recruit the staff as per the job descriptions, in which case the essential staff are appointed
who would perform the designated task and undertake appropriate responsibilities. Hiring of employees in libraries must be criteria based that includes attitude, experience, qualifications, graduation date and potential communication skills [142].

The inability to provide dynamic approach to library services in the developing and the third world countries lies in the recruitment policies of library personnel [337, 338].

It is beyond anyone's comprehension as to how the following thirty library staff could be justified by the Task Force for a medical school with 100 student intake annually [30, 261]:

- Chief Librarian 01
- Deputy Librarians 02
- Assistant Librarians 02
- Documentalists 02
- Catalogers 01
- Library Assistants 10
- Stenographer 01
- Repographer 01
- Typist 01
- Clerks: Upper Division 01
- Lower Division 01
- Daftry 02
A featherbedding pattern will result if the above staff formulae is adopted. It is astonishing to note such a large categories of library staff for a medical school library. It will be a over-staffed library without a doubt. In absence of job descriptions or position descriptions, it is extremely difficult to either account for or justify the staff and their daily tasks. The major consideration in health sciences library management is the number of staff needed to operate it at a minimal level. Based on established Job Descriptions, a staff of ten personnel listed hereunder may be considered adequate for a medical school library which is kept open for 16 hours a day in two shifts seven days a week.

** Professionals:

Librarian 1
Asst. Librarian 2

** Library technicians;
or RDAs 3

** Supportive Staff or
non-professionals 4

04. 7. 5 Personnel Evaluation:

The test of an organization is the spirit of performance. It requires that there be full scope for individual
excellence. The focus must be on the strength of an employee—on what he/she can do, it must be on performance. The first requirement of an organization is the high performance standards for the group as well as for each individual. It does not mean "success" every time; but it has no room for lower standards.

The focus of organization must be on opportunities rather than problems. The decision that effect people must express the value and benefits of organization. The management must demonstrate that it realizes that integrity is one of the absolute requirements of a librarian.

The personnel evaluation must be undertaken on an ongoing basis based on predetermined schedule, which could be either on a six monthly basis or annually. All employees of a library must be evaluated and the method selected must conform to the environment of library and its administration. If some standards of evaluation exist in the parent organization, these must be modified for appropriate use of the library.

An organizational chart will be most helpful in indicating the levels at which evaluation should be undertaken. The different categories of staff require different evaluation mechanisms. A library may use objective mechanism of evaluation for support staff whose performance is easy to measure. For the professional staff, a subjective
evaluation may be more appropriate. In this context, Peele’s analysis of subjective and objective evaluation [300] will help. Regardless of the methods used, the personnel evaluation is a major responsibility of the Chief of the library. The personnel evaluation must be fair and tight. It should be an integral part of library policies. The libraries will face instantaneous problems without clearly defined and written policies and procedures [278] in this regard.

It will be helpful to consider the following while conducting performance evaluation:

01. A formal, written evaluation for each employee periodically depending on the procedures of library is completed. This will be on some sort of evaluation form of 3 parts [Fig. 17]. This form will become a part of employees permanent record. The form designed by John A. Burns School of Medicine, University of Hawaii, Honolulu, USA is simple, easy to use and will be an ideal [379]. This form will be a basis for merit, promotion or demotion of the employee in future. The form is designed to involve both the employee and the supervisor in reviewing performance, identifying areas that need improvements and planning ways to make the required improvements.

02. Collect employees job description, a copy of last year’s performance evaluation if one available giving the plan
Employee Performance Appraisal

Part I

Information about the Employee

Name: Position: Grade:

Date of joining: Last Performance:

Supervisor: Suitable for promotion/reward

Part II

Supervisor’s Evaluation

Employees Tasks:

Employees strength in performing the assigned tasks:

Employee weakness in performing the assigned tasks:

Steps suggested to improve performance:

Comments:

Fig - 17 (a)
Part III

**Interview with the Employee**

Employee reaction to the evaluation: Agree/Not Agree

If does not agree give reasons: -------------------------------------

Supervisor’s comments: -------------------------------------

Next evaluation scheduled --------------------

Combined comments: -------------------------------------

Supervisor’s Signature  Employee’s Signature

Date of evaluation:  Next evaluation

Signature of Supervisor  Signature of Chief Librarian/Director
for improvement and any other materials that may relate to job performance of the employee.

03. After comparing previous year’s performance and improvements as per the job description, list employee’s strengths which may be more effective in job performance. It is important to examine the underlying causes for the areas that need improvement. Listing of ways to improve the weak areas will be extremely useful. It is time to assess if the employee requires close supervision or additional training to improve performance. If the job training is required, the ways how best to achieve it must be worked out.

04. Supervisor will then meet the employee to review performance and plan necessary improvements. An advance notice is given to the employee of the performance appraisal, supply the employee with a copy of the evaluation form and then meeting takes place to work out a joint plan for improvement. Ample time needs to be given to employee to hear his/her explanation for any negative points noted by the supervisor.

05. The supervisor must explain the reason for the meeting. He/she has to be frank, objective and fair in discussing employees performance on the job. The employees performance must be compared with the standards in the job description or in previous years evaluation and improvements
in performance. One should not compare the employees performance to other employees in the library.

It is advisable to discuss employees strength and the areas that need improvements, which have been noted by the supervisor in Part I of the form. Together the causes are discussed, which may help suggest ways to work on the areas that require improvements. Clarification is required as to the reasons for employees failure to come to the expectations. It may be possible that the directions given by immediate supervisors may be faulty.

The employees lower or unacceptable performance may be due to lack of proper directions and communication from the immediate supervisor. The supervisor may not have given clear instructions as to what is expected of each employee, etc. The causes may be in work situations—lack of required equipments, interference by other employees, or excessive demands. It may be noted that once the causes for lack of performance are noted and identified, action should then be taken to correct these.

The supervisor must decide along with the employee the actions to be taken to achieve the goals. More than one ways to improve employees performance must have to be discussed and the best suited action has to be selected. After an agreement has been reached between the supervisor and the employee, it
should be written down in Part. II of the evaluation form. This then will become a plan for improving performance of the employee. Agree on a plan and write down in the performance evaluation form, put the date. It must be noted that periodic check on the employee's progress must be maintained.

06. At the end of the meeting the evaluation form must be signed both by the supervisor and the employee. Then the form is submitted to the Chief Librarian. It is important to end the evaluation with a positive but an encouraging note. The supervisor may point employee to the opportunities available to improve performance and how it might help him/her and the library.

07. It is imperative that supervisor must work with the employee on the specific tasks that are agreed on the joint meeting. The review sessions are crucially important and therefore must be held regularly between the supervisor and the employee. It is the responsibility of the supervisor to provide support, leadership and motivation on daily basis.

04. 7. 6 Performance Appraisal:
The performance appraisal has become a "Standard" practice in the management. It is a major responsibility of the chief librarian. The effectiveness of programs of a library are determined by effective staff \[300\]. The subordinates have a right to know the opinion of their
superiors so they can correct their weakness if any. The process is designed to:

[a] Provide systematic judgement to backup salary increases, promotion, demotion, or termination, etc.

[b] Assist superiors of telling subordinates how he/she is doing and suggesting needed changes in behavioral attitudes, skills and job knowledge, etc. and

[c] Use as a basis for the coaching and counseling of individuals by supervisors.

04. 7. 6. 1 Responsibilities on Subordinates:

The following can be noted as the responsibilities of any subordinate:

[a] Develops personal short-term goals;

[b] Has done a good deal of thinking about his/her job;

[c] Has made a careful assessment of his strength and weakness; and

[d] Has formulated plans specific to accomplish his/her goals.

After considering the responsibilities of an employee, the superior will have to enter the process activity. The superior’s role is to help an employee relate self-appraisal,
his/her "Targets" and plans for ensuing period to the realities of the organization.

The first step is to write a job description delineating responsibilities. The superior and employee will meet jointly, draft and modify as required until there is a mutual agreement that the job description developed is adequate.

On the basis of this statement or job description, the employee establishes his/her goals or "Targets" for a specified period. These are discussed with superior or supervisor and an agreement is reached. At the end of the specified period, the employee makes his own performance appraisal and then arranges an interview with supervisor, which is merely an examination by his superior. The employee and superior meet for evaluation. They will then fix dates and goal for the next period with superior having a veto power in each of the steps above.

One must know that the rewards and satisfaction sought from the career as librarians depend on individual contributions to the organizational objectives. More time is required to implement the Performance Appraisal. The superiors have to spend considerable time in implementing the performance appraisal program as described and advocated by Douglas McGregor [241, 242].
04. 7. 6. 1 Motivation:

Motivation are the result of human needs or desires. When a person is in need of something, he/she is automatically motivated. First the goal or target is set and he/she takes action to reach that target. The target becomes Goal and all human activities are diverted towards it, Fig. 18 will explain.

There are several kinds of needs [17]:

** Hidden- illegal or wrong;
** Symbolic- size of the office, specific furniture, Car, House, etc.;
** Emotional- these defy rationalization;
** Changing- needs change;
** Conflicting- more than one need;
** Short and long term-

   a library assistant can never become a librarian by merely working hard; there is a long term need to qualify.

Needs are want, desire, wish or a life requirement which will move a person into action. A person stays in one form or the other seeking to reach the goal that will satisfy the need. This action is the motivation that provide a desire or wish for a person to engage in action to reach the set goal.
TRIANGULAR PATH GOVERNING ALL HUMAN BEHAVIORS

Fig. 18

ACTION

GOAL

NEED

MOTIVATION
The action ceases when the need is satisfied and no action takes place until the need surfaces again. When an individual is blocked from achieving a goal, it will result in frustration.

04. 8 Services in Health Sciences Libraries:

The WHO conference [405] affirms that the library services in most developing nations are inadequate and in these nations traditional task of providing information services to the health professionals is based on medical school libraries. India and Karnataka are not exception to this observation. The libraries in India offer primitive style of services [68]. Circulating reading materials to users is a routine task performed by the professionals. Very little importance is given to bibliographic service. 75% of health sciences libraries surveyed provide no ILL service; 62% do not entertain any reference queries; and 68% were not aware of MEDLINE [107]. The preparation of a list of references using available index volumes is being attempted by a very few. These have therefore failed in their objectives by limiting their services to only supply of a list of references instead of articles or documents. The libraries and the librarians serve the end users who want the information they need; when they need and in the most appropriate form. While a list of references or citations is only the first step in satisfying
users' needs, finding out the actual items without much delay is the real problem in these libraries. Even abstracts if included, may summarize contents but are not substitutes for original articles or documents. A list of 20-30 relevant citations of available articles require days, often weeks and some times months, especially for a library in India. With this time lag, how well are the users served? The libraries of the developed world have solved this intruding problems through cooperative efforts.

The traditional boundaries by which libraries were grouped in the past have now collapsed as service functions are shared [59]. The librarians have not been trained to analyze, synthesize or evaluate information that is provided to clinicians and allied health professionals. Due to new responsibilities, the role of librarians now include analyzing and evaluating of the information to be provided which should suit the needs of users with minimum time lag [59, 212].

04. 8. 1 Circulation:

Circulation is an important aspect of readers' service. Normally book collection excluding reference collection is categorized as circulating. Textbooks and standard reference work are also included in the circulating items. The drug indexes, encyclopedias hand books, dictionaries, have always been categorized as non-circulating. The audiovisual materials
mostly are non circulating because of the special nature requiring special care in handling. These materials are loaned specifically for a large audience such as in-house conference or presentation. The periodicals have always been non-circulating. There are however, health sciences libraries in the western world that have made an exception to the circulation of back volumes of periodicals. Some have gone a step ahead in granting circulation of current issues of expensive periodicals for overnight or 72 hours basis.

The periodical circulation will always remain an important form of dissemination despite its higher cost, low currency, low selectivity and high loss problems [324]. The circulation of journals to users is restricted to in-house use in most health sciences libraries due to time consuming problems and safety.

Although the shelf reading is often given lowest priority. By not doing it on a regular basis, the library increases the probability of users asking staff to search an item required [74]. It is because the item is not where it is supposed to be.

04. 8. 2 Classification:

The library classification has to be the one that is most useful. Be it, Colon Classification [CC], National Library of Medicine Classification [NLM], Dewey Decimal [DC], Universal
Decimal [UDC], Library of Congress [LC] or any other system. These schemes may be dysfunctional, inasmuch as they neither support typical human cognitive approaches nor follow human information processing patterns [228, 279].

Classification of books and periodicals together might well work in an university library. It eliminates here, the need to know the title of a periodical in a particular subject area and the user may save time in finding out what is needed. The health sciences library rejects this arrangement because its users usually gain access to the periodicals literature through indexing or abstracting services. It is therefore advantageous to arrange periodicals by title. Since a major collection in a modern health sciences library comprise of periodicals, these are arranged title-wise on the shelves and have thus eliminated mis-shelving problems. The arrangement of periodicals is one of the most important aspects of physical access in libraries since maximum use is for these materials in the health sciences libraries.

04. 8. 3 Cataloging:

It is a key to the library’s collection; if it is not up to date, physical access to library is impaired. Two application programs are offered for users to choose in the proposed uniform catalog where libraries are able to maintain standard interface while freely incorporating innovations in
to their primary cataloging as individual needs dictate. The automation of the catalog is the first step towards formation of network of health sciences libraries, in which their library holding are accessible by computer terminals. This will help search state-wise reading materials with ease. The availability of reading materials will naturally improve user services by sharing items available elsewhere in the network facility many of which might be very close to the user library. The formation of network consortia will give all health sciences libraries and their users, better access to materials.

Although there are many national and regional standards which facilitate the exchange of bibliographic information, there are a few international standards such as Unesco’s Common Communication Format [CCF]. The CCF is worthy of only one aspect and that is its methods of housing multiple bibliographic entities in a single record and of expressing relationship among them. The techniques used by CCF to accomplish this though central to it, are rather different from those of user formats needing further discussions [347]. Even with this comment, the CCF is filling real needs and is accepted by a number of bibliographic agencies because these agencies do not find a standard format that meets their needs.
In the Health Sciences Libraries especially in the United States of America, the National Library of Medicine has established uniform standards for document delivery system including time required to fill an Interlibrary loan request and the minimum number of ILLs to be filled by a RHLs [234].

It is therefore valuable that a working format of cataloging is worked out to record books, monographs, periodicals and audiovisuals etc. The cataloging format [Fig. 19] for automation of library collections, irrespective of Catalog codes that are being used in libraries now, will be helpful. It is important however, that the development of any bibliographic format must be based on the users' requirements. The suggested format is simple which could accommodate any Cataloging Codes, Classification Systems that are being used in HSLs in Karnataka. It is however, extremely important to ensure that Medical Subject Headings [MeSH] used must be based on those accepted by international community. The MeSH used by the US National Library of Medicine in Index Medicus and MEDLINE is very appropriate.

04. 8. 4 Reference Service:

Reference service ensures the optimum use of information resources through substantive interaction with user group [6]. Facilitating access to information through instruction about the library and its resources including reference materials is
## DATA ENTRY SCREEN

**Fig. 19**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST AUTHOR</td>
<td></td>
</tr>
<tr>
<td>SECOND AUTHOR</td>
<td></td>
</tr>
<tr>
<td>TITLE</td>
<td></td>
</tr>
<tr>
<td>FIRST EDITOR</td>
<td></td>
</tr>
<tr>
<td>SECOND EDITOR</td>
<td></td>
</tr>
<tr>
<td>EDITION</td>
<td>VOLUME NO. :</td>
</tr>
<tr>
<td>PUBLISHER</td>
<td></td>
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<tr>
<td>YEAR</td>
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</tr>
<tr>
<td>ISBN</td>
<td></td>
</tr>
<tr>
<td>ISSN</td>
<td></td>
</tr>
<tr>
<td>SERIES</td>
<td></td>
</tr>
<tr>
<td>BIBLIOGRAPHIC DATA</td>
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</tr>
<tr>
<td>SUBJECT 1</td>
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<tr>
<td>SUBJECT 2</td>
<td></td>
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<tr>
<td>SUBJECT 3</td>
<td></td>
</tr>
<tr>
<td>CALL NUMBER</td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td></td>
</tr>
<tr>
<td>ORDER NO. &amp; DATE</td>
<td></td>
</tr>
<tr>
<td>DATE RECEIVED</td>
<td></td>
</tr>
<tr>
<td>PUBLISHED PRICE</td>
<td>COST :</td>
</tr>
</tbody>
</table>

==============================================
one of the standard approaches to reference service [91]. The prime objective of reference service is to locate needed information.

Theories of reference work focus on the level and nature of the services to be offered. The conservative opinion would limit service to instructions and guidance, making it imperative that the user finds information by him/herself. The liberals believe that it is more valuable for the users to have the information than to learn how to get it. The librarian would perform any task when the time saved by the client is an important consideration. The moderate position is an intermediate, which combines a willingness to offer direct information service under special circumstances; instructing users in information retrieval techniques by various methods of user instructions and education. The special libraries such as Health Sciences Libraries adhere to a mixture of liberal and moderate views in this regard, where as university libraries adhere to moderate view and other to conservative views.

The purpose of reference service is to assist users in securing information and in using library resources [244]. In developing policies for reference service, the objectives of library and its parent institution must be considered. The
fundamental rules for setting policies applicable to reference service have been outlined by Evans [129].

[a] The rules delegate authorities;
[b] Let know what it is and what it is not Policy;
[c] Reflect institution’s objectives;
[d] Policies be consistent and flexible;
[e] Policies be controlled and reviewed periodically;
[f] Policies be explained and discussed.

A written policy ensures that all staff members are aware of preferred course to be followed when problems arise. The ALA [6] refers librarians to a practice code, which details the circumstances "under which services and resources are to be offered, the extent to which they are to be provided, to whom and by whom such services are to be provided".

The literature search is a product of liberal or extended reference service, which is intuitive process and often is a carefully planned, logical procedure amenable to analysis and visualization. The searching process varies according to an enquiry which will include several steps [22] such as:

** classification of query; or a reference interview;
** identification of search parameters;
purpose, time span, scope, etc.

** translation of query into appropriate subject headings or search vocabulary;

** selection of systems to answer query;

   Medline, Toxline, Avline, Cancerline, etc.

** conducting computerized vs manual search;

** evaluation of both search, outcome of result and delivery.

Any search which locate desired information with a minimum amount of time and effort is an effective service. A search strategy is a pre-requisite for an efficient reference service and communication between librarian and the user both verbal and non-verbal is only the first part of reference service. A reference librarian in health sciences library has an added responsibility of instructing users in the use of biomedical and health resources and in teaching the search techniques.

The quality of reference service depends upon the strength of reference collection and the ability of the staff to utilize it effectively in communicating with users. The reference service performance is evaluated in terms of how completely and accurately user’s needs are met through the user satisfaction [198].
The reference questions fall into four basic categories [331].

01. Directional;
02. Instructional;
03. Factual or Direct; and
04. Research of In-Direct.

The step approach to reference questions is a must and each question has to be analyzed into [392]:

01. One Step: which is a directional, requiring one judgmental step. e.g.
   Where is Index Medicus located?

02. Two Steps: requiring one judgmental step to a source external to the respondent and a second step to deliver the response. e.g.
   What is Jacksonian Tumor?

03. Three Steps: requiring three or more sequential steps to arrive at approximation of response if not a correct one. e.g.
   Adverse reaction to Tagamet; or
   The name of the syndrome in a child with Microphthamia, Microcephaly, Equinovirus, and Umbilical Hernia, etc. etc.
04. Research or Direct.

The directional questions are answered without use of reference tools. e.g. where is this or that type. A simple question such as Where is the Index Medicus located may further lead to a question requiring its use. The professional receiving such an inquiry may discover the need of an user only if more than a cursory answer is given. The factual questions require specific information such as what are the trade names of Nefidipine, etc.

The instructional questions require librarian to assist user in learning. e.g. How to use Index Medicus, Science Citation Index or the Physicians Desk Reference [PDR]. This is to aid an user in the pursuit of information rather than to provide it directly. The extended reference services lead user to full range of sources that must be searched in order to find an answer.

It is advisable to interview an user for any reference question that might require a three-step answer. The purpose of reference interview is to [203]:

** Ascertain what information the user requires for a particular question or a problem;

** Clarify the question in terms of itself [what it means rather than how it is
expressed] and in terms of translating
it into a form acceptable by a search
system;

** Ascertain the amount, level of the
materials which will answer the question.

Eighty percent [80%] of questions at reference desk can
be answered by well trained non-professionals [5]. A study
shows that only 0.7% of questions asked at the reference desk
are in depth and time consuming [213].

The appointment of several RDAs on part-time basis to
perform task at the reference desk may be helpful, but their
training by professional is questionable due to the lack of
time at the disposal of the professionals.

Both the above observations seem appropriate at a public
or an academic library. These observations do not hold good
for a health sciences library. This observation is
questionable especially in health sciences libraries with more
than one professional at the reference desk. A reference desk
at an academic library is meant only for directional questions
and for those requiring factual information and quick replies
[144]. Ford [138] is in favor of elimination of reference
section in favor of User Education, Bibliographic Instructions
and Point-of-Use Aids etc.
A library depends on students assistants as an integral part of the library staff [122]. The utilization of library science students for the reference desk is recommended [99] since the health sciences library will be an effective and up to date laboratory for them. The students of library science from the university library schools are best suited to work at the reference desk in the health sciences libraries. This will provide them with first hand opportunity to handle important reference materials at the reference desk, know factual information about each of these important handbooks, drug indexes dictionaries, encyclopedias, etc. while they are still pursuing their professional graduate education.

The paraprofessional are also recommended as suitable to answer directional questions and to help locate materials from the catalog cards. These are called Reference Desk Assistants [RDA] a . They can also answer ready reference questions from sources such as Handbooks and Dictionaries. The staffing of reference service with paraprofessionals or RDAs, in recent years has resulted in a wide discussion from which some agreements emerge that the in depth reference or literature searching should be the responsibility of the professionals [41, 70, 280, 331].
04. 9 Resource Sharing and Cooperation:

Because of interdependency of libraries on one another, there is a notion that self-sufficiency even of largest health sciences library is impractical. There is a vast difference in general, special and health sciences libraries. The budget requirements in health sciences libraries are larger as cost of books and periodicals are higher and service demands are heavier. The frequent need to call upon other libraries and a willingness to provide extended user service, both characteristics of a health sciences library, play a leading role in the development of cooperative Inter-lending and resource sharing [305]. The undeniable truth is that the size and cost of serial in health sciences will demand unprecedented cooperative collaboration in acquisition, preservation, dissemination and the management.

In the US, the librarians have accepted the tenet that no library can be self sufficient. The health sciences librarians are particularly strong believers in this regard because of availability of a extremely strong National Library of Medicine as their backup and an equally strong network of health sciences libraries in the country.

The special collection and users as well as strong service orientations place health sciences libraries in category of very special libraries. These libraries form a
distinct group and yet they share more characteristics than differences with other groups. The health sciences libraries as focal institutions for biomedical communications exist within a complex and dynamic environment. The collection and analysis of data within reasonable time intervals and covering an entire universe of biomedical and health care are essential for effective management and planning.

At the aggregate level, whether national, state or local, information distribution of library resources, personnel and service, is essential for the orderly development of consortia, network and state-wide library system.

The variations in the health sciences libraries and their institutions make it extremely difficult to collect accurate comparable data on them. The six International congresses in medical librarianship held from 1953 to 1990 have created, to some extent, the recognition of the solidarity of goals and problems of the health sciences libraries in general and in the developing nation in particular.

Cooperation is not easily accomplished. It requires practice and a great deal of staff time. Mergers, cooperation and shared acquisitions are the frequent tools for growth of facilities. There is a contention that library cooperation is impossible in the absence of agreed upon standards of bibliographic representation, description and processing. It
is important that bibliographic data are treated consistently by all participants. If authority files are not maintained for the specifications of appropriate cataloging rules and interpretations, the joint catalog constructions and access methods by different library organizations can not be implemented.

04. 9. 1 The Cooperation:

The cooperation among the participants is essential for success. The best decades have witnessed cooperative efforts on an international level. The United States NLM has expanded its on-line MEDLARS data base to foreign countries. The cooperation between libraries demands and depends on discipline, norms and established procedures. A survey [39] has revealed non cooperation in libraries of the developing nations.

The availability of a Union List of serial becomes absolute for the local, regional, national as well as international cooperation. There must be a mechanism for its production, distribution and periodical update for free and smooth exchange of reading materials among participants.

For more effective participation in cooperative ventures the arrangements must have to be evaluated in the light of the characteristics of those that have been successful. A special attention must be paid to the equality, adaptability,
programmatic focus, commonality of interest in programs and organizational effectiveness. Alternative approaches to proposed cooperative efforts must be explored to avoid conflict of interest among libraries. An ongoing evaluation of the cooperative arrangements thus becomes of paramount importance.

04. 9. 2 Interlibrary Loan [ILL]:

The goal of all health sciences libraries is to provide efficient and effective access to all information and resources needed by the organization and users they serve. To accomplish this goal, a library consistently strives to maintain a sound balance between self sufficiency and reliance upon other libraries [186]. Another goal of ILL is to provide a library with new capabilities that would not be possible through local libraries. The ILL cooperation runs the gamut from reciprocal borrowing privileges, the ILL of materials and shared staffing arrangements to participation.

ILL has two basic aspects:

[a] Requesting materials for library users; and

[b] Supplying materials to other libraries that make requests on behalf of their users.
Both concepts are the means of extending the library services. First by expanding resources available to its users and secondly by expanding the group served by library and the uses made of library materials.

The following are the prerequisite for ILL [284]:

01. Mutual need for resources beyond those available in individual libraries;

02. Limitation on participation by members must be clearly understood by participating libraries;

03. Standards of performance for the participating libraries must be agreed upon, including minimal cataloging requirements and adherence to any national standard if available;

04. Long term commitment by participating libraries.

The practice of inter-lending, or document delivery, seems is set to become even more important as libraries face increasing difficulties in finding sufficiently large budget to maintain, let alone increase acquisition levels at a time when the amount of materials published continue to grow.

It is estimated, on the basis of the cost at a requesting library alone, that if six ILL requests of a given title are
made in a year, it is more economical to subscribe or add the title to library than to continue making ILL requests [393]. Kronick [219] recognizes that supplying free ILL service is no longer viable in the changing world.

Over 98% of times, the users have requested for articles from English periodicals. The British Lending Library estimates that 87% of their ILL requests are for English language articles [400], and an analysis of ILL from 1968-1969 shows 86% requests for journal articles [148].

The DOCLINE which is the National Library of Medicine's automated Interlibrary Loan request and referral system. It was developed to fill an immediate need for improved services to the users by the rapid routing of ILL requests throughout the Regional Medical Library Network. It is worth to try to find a matching system on the lines of DOCLINE system.

The automated ILL request and referral may be difficult and impractical for a developing nation such as India at the present time. However, a manual directive procedure making it mandatory on the participating libraries will help to great extent and will speedup ILL filling times for libraries for the benefits of health professionals.

04. 9. 3 Resource Sharing:

The idea of sharing carries with it not only some notion of reciprocity, but also the idea that the participants
process materials they can share. Kronick [219] suggests to weigh savings in the cost of acquiring materials against the cost of borrowing. The cooperative acquisition programs are desirable if libraries are to achieve effective resource sharing. These programs are designed to reduce duplication of infrequently used items such as expensive and highly specialized journals.

The most important requirement of resource sharing is availability of a union catalog as in the nation, state or a region.

It is through the sharing that self realization, enlightenment and fulfillment are accomplished [133]. For effective participation in resource sharing, it is recommended [353] that the Librarians:

01. evaluate prospective cooperative arrangements in the light of characteristics of those that are successful;

02. assess the nature and depth of conflicts before entering into cooperative endeavors; and

03. evaluate program periodically.
Job Description:

Job descriptions are probably the most neglected and under rated documents in employment [134]. Job descriptions are recommended by Deshpande in the early 1960s.

Managing effectively is often based on the ability of librarians to identify the work to be performed, to delegate work to others, to control its progress and accomplishments. This requires that several tasks, duties, responsibilities and inter-relation in a library are defined. The Job Description are tools to accomplish these definitions. These descriptions should be completed before the position or job is filled.

The criteria for job descriptions must integrate values [77]. The traditional job descriptions consist of a responsibility statement, task statement and standards. The responsibility is a general description of the job, such as "performs routine daily duties as Circulation Desk Assistant to control the circulation of library materials". The task statement identifies what is to be done such as "checks out circulating reading materials to the eligible users of the library"; while the standards establish how and why it is done. A problem for such standards is that it does not contain enough information for value integration to occur.

Automation has allowed libraries to contain staff and more importantly, to redirect available human resources to
direct user services. Increase circulation and reference services are handled without increased staff. Cataloging and Classification are handled more easily and in short time than Deshpande [102] suggested.

Analyzing job must be conducted by an outside specialist or consultant or by a staff committee with the help of personnel department; or by the personnel department with the assistance of the library staff. The staff involvement is critical for successful Job Analysis program.

Three basic methods of Job Analysis are:

01. Interviewing of Individual Staff;
02. Observing Activities of Staff;
03. Questionnaire Completion by Staff.

The Job Analysis must include:

** List of duties with brief explanation and percentage of time in performing tasks on daily/weekly basis, etc.
** Identification of most complex tasks performed and why members think so;
** Include environmental conditions;
** Tools and equipments necessary to perform tasks- such as computers, Classification and Cataloging schedules, etc.
** Supervision received and how much;
** Supervision given and how much;
** Interaction with other staff or departments and percentage of time involved on daily/weekly basis.

Job Analysis must be reviewed to ensure that tasks, equipments, tools etc. are verified; and the verification of how the individual staff define their jobs or tasks. For example:

Interlibrary Loan has been transferred from great many libraries because of the percentage of time devoted to reference service or user information by reference librarian; and also by increased amount of time devoted to providing of articles for readers from sources outside of the user libraries.

The Job Analysis will result in a dramatic change in library organization [31].

Objectives and goals are the ends towards which activity is aimed. The purpose is to give information and influence action, an attitude to decide and in a order in which they are presented.

Policies are plans in that they are general statements of understandings which guide or channel thinking and action in decision making of subordinates. These delimit an area within
which a decision is made and assures that the decision will be consistent with and contributes to objectives.

Policies should be regarded as a means of encouraging discretion and initiative, but within limits.

Three broad classes of errors that undermines user documentation are:

[A] *Strategic Errors*: these include failures of planning and analysis;

a. Poor definition of audience;

b. Poor definition of task and;

c. Lack of an overall plan.

[B] *Structural Errors*: these include:

a. Failures of design and modeling;

b. Lack of substantive outline;

c. Poor testing of an outline;

d. Omitting an user from the interview.

[C] *Tactical Errors*:

a. Editing;

b. Revision- use nomenclature, grammar, etc. in consistency-spelling and clumsiness.

Procedures are used in training:

[a] Tutorials,
The traditional custodial role of the librarians has been changing. Automation will need huge resources—financial and others, but the availability of more information and its use for the benefit of students, researchers, clinicians and ultimately the patients will have to justify the increased cost requests by libraries [301].

To secure the resources needed to carry out the goals and objectives of the library is both pleasant and unpleasant tasks of all librarians. The success in budgeting is basic to success in all other endeavors. It is a vehicle for implementation of library goals and objectives rather than getting the money and distributing among different units. Therefore, a budget should be logically and consistently tied to library objectives and by this way can budget be defended and protected from arbitrary cuts. The surveys suggest that the political aspects of financial management are critical [62].

Regardless of the size of an organization and its budget, a librarian must perform the following basic budget functions:

1. Analyze budget request documents supplied by the budget office including previous
year's budget expenditure as well as procedures and instructions;

02. Analyze budget for the current year projected against actual expenditure and prepare Variance Report.

A variance report is the difference between what was budgeted in a particular category and what was actually spent. Any large Variance should be explained and statistical information in its support be gathered.

It may be noted that priorities for budget items be estimated and a note stating as to how the priorities established are given. Plans for use of budget requested have to be given in relation to the existing budget and its impact on overall operation of a library. After receipt of budget requested—either in its entirety or with cuts, it should be set up. The establishing budget for purchase of books, subscriptions, furniture, binding, etc. may be undertaken. If the budget is reduced, priorities must be set up in consultation of library staff. The budget monitoring in such cases becomes extremely important.

04. 11. 1 Types of Budget:

There are five basic types of budget:

01. Lump-Sum Budget;

02. Line-Item Budget;
03. **Formula Budget**;

04. **Performance Budget**; and

05. **Planning and Program Budget**;

*It is also called Program Budget.*

To these we may add the following:

01. **Zero-Based Budget.**

04. 11. 1. **Lump-Sum Budget:**

This type of budget is the easiest to prepare and allows most flexibility. But the most obvious drawback is that the cost do not increase at the same rate for all categories. e.g. Books and journals are known to increase at a higher rate than other goods.

In lump-sum budget a single amount is provided for all library operations. The librarian allocates amount to different units. The amount required is arbitrarily determined. e.g. It may be a fixed percentage increase over all rates of inflation, although personnel budget needs to be considered separately in determining the percentage. It would be wise to construct a more detailed budget document for the internal use of the librarian, if a library practice a lump-sum budget.

04. 10. 1. 2 **Line Budget:**

The line budget is constructed by major categories such as Purchase of books; Subscription to periodicals; Binding;
Furniture & equipments; Printing & postage; and Stationary, etc.

It will be helpful to allocate budget on a percentage basis. The usual approach will be 50% budget towards subscription; and 30% for purchase of books; 10% for furniture, etc. and the remaining 10% for other requirements.

04. 11. 1. 3 Formula Budget:

This type of budget is seldom used in health sciences libraries. It is usually practiced in university libraries. Any one of the formulas are used in preparing formulae budget:

[a] Percentage of Institution’s general budget; [b] A fixed percentage; or [c] A set amount per student.

This budget allows a librarian little opportunity to emphasize specific factors. The problem will arise in this type of budget like that of lump-sum budget for any new program. It is better if a library develops its own formula for budget and get it approved by the management based on the accomplishments and usage of resources and services.

04. 11. 1. 4 Performance Budget:

This type will explain what a library intends to do with funds requested and how much finance is needed to carry out certain library programs. In the budget document, each program is described along with supporting documents so that
authorities— who usually are non-library viewers can understand it. This type of budget has two procedures:

[a] Determining individual programs: Grouping similar functions is useful in determining redundancy and cost of each program is calculated;

[b] Calculating their cost: Personnel cost are determined by counting staff hours put in each category of personnel needed to perform the function. e.g.

The number of staff hours that the reference desk is to be manned is the number of hours needed for that program.

04. 11. 1. 5 Program Budget:

Much of the techniques in preparation of this budget is similar to the performance budget. In program budget the cost of any program is calculated and is presented. All costs in any one program are grouped together regardless where the task or program is performed. It requires careful attention to all similar activities performed in the different departments of library. It is synonyms with the Program and Performance Budget System or Planning & Program Budget System [PPBS].
Planning & Program Budget System [PPBS]:

It is the most complicated type of budgeting. In the PPBS the objectives derived from planning process together with the performance requirements for meeting these objectives, are put into a unified budget that shows the inter-relationship. The emphasis here is on Out-put or Objectives rather than Input or Cost.

The PPBS consists of four elements:

[a] Program memoranda are tied to the objectives of library and the reasons for budget requests are explained;

[b] Program Financial Plan [PFP] identifies the present and future cost of meeting objectives;

[c] Program structure and statement of strategy will describe how the objectives are met; and

[d] Program evaluation assesses success in meeting objectives. It seeks to answer the question "How well is the plan working?".

Ultimately PPBS will result in a Line-Budget, but with one difference in that the budget will be based on a determination among alternative choices relating to future outcomes and not on the preceding year's budget.
The key to PPBS is setting the objectives and determining costs. The objectives should be structured hierarchically into program categories, sub-categories and elements.

The particular strength of ZBB and PPBS is that they lend themselves more easily to budget restrictions. Both are developed for alternative levels of service on a variety of objectives. They can be reduced level by level to match the amount budget amount received.

PPBS requires certain statistical methods from the librarian, which can be mastered in a very short period of time. It is valuable when reductions in services are required as it is developed by program. The management can either elect to eliminate or reduce the level of activity selectively among different programs.

Importance here must be given when there is issue of spilt staff. e.g. A professional may devote half-time in reference desk and half-time in user education. If one of the two is not funded or viewed as a low priority and is deleted, an alternative must be found for the half-time effort associated with that professional.

The recommendation will be Performance or the PPBS budget which provides the maximum of information with minimum of efforts in compilation especially when coupled with a Line-
Budget. The budget controls the process and only the activities that have the resources.

The following Example with help explain the PPBS:

01. **Statement of Purpose:**

   The Karnataka Regional Health Sciences Library Network shall serve the health professionals with reading materials and information in medical and health sciences for improving medical education, research, continuing education and finally the patient care in the communities of the State.

02. **Program Structure:**

   The Health Sciences Library will appoint Circuit Librarians [CL] who will pickup reading materials from the libraries in the Region and deliver to health professionals of the health care institutions. The service shall be provided every day Monday to Saturday during normal working hours. The CLs will make all stops to deliver materials containing health and biomedical information, collects lists of required materials from health professionals including collecting already issued materials according to schedules.
03. **Program Financial Plan** [Fig. 20]

<table>
<thead>
<tr>
<th></th>
<th>Last Year</th>
<th>This Year</th>
<th>Proposed Cost Next Year</th>
<th>Estimate Cost Future Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Cost:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Clinical Librarian</td>
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<tr>
<td>2. Driver</td>
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<td>3. Vehicle Maintenance</td>
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<tr>
<td>4. Oil &amp; Petrol</td>
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<td>5. Personal Vehicle</td>
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<tr>
<td><strong>Shared Cost:</strong></td>
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<td></td>
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<tr>
<td>1. Photocopy</td>
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<tr>
<td><strong>Initiating Expenses and or Capital Improvements:</strong></td>
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<tr>
<td>1. 2nd Vehicle</td>
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<td>2. Leave Salary</td>
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<tr>
<td><strong>Program’s Total Cost to Network</strong></td>
<td>-----</td>
<td>-----</td>
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</tr>
</tbody>
</table>
prior to the establishment of the Circuit Librarian Program. The health professionals acquired latest information on the therapeutic and diagnostic advances and have put into their practice thereby resulting in the improved patient care, self education and research.

** It has tended to bind health professionals to the provision of biomedical and health information from libraries for self-education, research and patient care.

** The cost of operation of the program has remained in line with the budget.

04. 11. 1. 7 Zero-Based Budget [ZBB]:

ZBB is the modified performance budget. A library identifies and develops its programs without reference to the previous years activity. i.e. It starts with zero with no reference to the previous year.

In example of Reference Service, the performance budget calculates the incremental amount of activity and the resources needed; whereas ZBB describes the total reference service activity expected and total cost needed for that task.

The heart of ZBB is the decision unit or the unit of activity to be analyzed, which will be carefully chosen. e.g.
Purchasing unit is too large and must be divided into Book Ordering and Subscription Ordering sub-units.

The elimination one unit may result in overloading another e.g. cancellation of five journal subscription may save amount but will result in heavy ILL activities.

Alternative ways of performing work are pointed out and accomplished by cost/benefit analysis. The best of both will then be presented to authorities along with budget request.

The ranking of each unit is determined and budget allotment is based on ranks. The ZBB requires extensive commitment of time and therefore is considered only by a large library such as an university library.

The application of ZBB to a library creates problems in that the planning is not linked to the unit and therefore the implications of the process are not seen. The ranking is difficult if presentations from different units are inconsistent. It is a sophisticated type of budgeting and therefore must be carefully studied before it is undertaken.

**04. 11. 2 Data Collection for Budgeting:**

All budget systems require that a data supporting the amount requested for each unit be prepared. Since budgetary funds are monitored one way or the other throughout the year, data collection and its analysis are important of budgetary control process. The libraries are traditionally weak in this
respect. The tough measurement of quality of activity is extremely difficult to achieve. What a library does is related to the very factor of qualitative work.

The quantitative measures in libraries assist in decision making processes, are used for budget justification and therefore necessary. The system analysis [SA] or operation research [OR] are important for a librarian and help him/her to answer questions like, "whether the quality of the decision is improved sufficiently to warrant the cost of data collection", etc.

The OR is simply a body of applied sophisticated mathematical techniques to study systems and suggest ways for modeling that can be used in assessing library performance. If the assessment of quality are to become one of the several themes of characterizing libraries, the overall qualities of libraries will improve, and assessment becomes a means to this end and not an end in itself [344].

The techniques to measure library effectiveness can be summarized into:

[a] Reputation: The ranking of schools by deans or principals; ranking of medical schools by medical educators; ranking of library schools by librarians, etc.

[b] Institutional Resources: The per capita
expenditure; number of librarians; publications by staff; grants awarded; volumes owned, etc. The theory being that greater the resources the more likelihood of high quality.

[c] Focus on Outcome: The number of items lent; reference questions asked; databases used; library instruction classes offered; survey of library users, etc. even though the real outcome or effects of these are difficult to know. The factual data on real outcome is lacking.

[d] Value Added Method: The positive impact of quality on its members.

It is important that a librarian is aware of these techniques. Bommer [35] strongly feels that OR is not suitable for use in libraries because:

[a] It is too mathematical and models are too complex;

[b] Too little attention is paid for implementation of the model;

[c] Insufficient emphasis is paid on the process of OR; and

[d] It has paid too little attention to the strategic problems of librarians.
04. 12 Libraries in Hospitals:

The hospitals are defined either as secondary or tertiary care facilities reflecting levels of care provided. Teaching hospitals provide both secondary and tertiary care with a wide range of medical and surgical specialties and subspecialties. Many hospitals are part of teaching institutions; others are affiliated. Several more— a very large number in Karnataka are neither part of a teaching hospitals nor affiliated.

The residents and interns are the souls of the buildings called hospitals. The advances in health care technologies have changed the shape of hospitals and the future will be more exciting [25]. The hospitals and physicians are the contractors, where the price is not driving force, it is "quality" [69].

Increasingly the library and its expanding resources serve the total hospital community, administrative personnel and the consumer/patient population in addition to its more traditional support of the physician and other direct health care providers. The librarians have therefore knowledge of multi-disciplinary information needs of the institution as well as an understanding of other information related issues which effect hospital organization [288].
The situation is changed now. The Joint Commission of Accreditation of Health care Organizations [JCAH] has made it mandatory the availability of a library when the hospitals become member of this organization on voluntary basis. To be recognized by this agency, a hospital must have to have a library established in the hospital with a full time qualified librarian; or must avail on contractual basis library services. This has resulted in compulsory establishment of libraries in hospitals in the US.

All hospitals and health care institutions providing patient care need information about the effect of technologies and environment on health care. Over 70% of hospital libraries in the US are members of ILL consortia [406]. A survey has revealed that 86.8% ILL requests were for articles from periodicals and that of this total, 42.9% were from practicing physicians. The percentage of ILL from academic center was much lesser. For hospitals without libraries, the solution will be contracting for library services from neighboring medical school libraries rather than appointing full time qualified librarians [265]. As hospital change in adopting new environmental technologies and conditions, so will the hospital libraries [317].

Fazzone & DeSimore’s data [131] shows 53% use in hospital libraries; and 34% in academic centers. MEDLARS use
by physicians is 56%; 17% by nurses; and 11% by allied health professionals, the patient related MEDLARS searches are 49%; and 19% teaching.

Because of the stringent regulations of the Indian Medical Council [IMC], the medical schools now have established libraries with qualified staff with a few exceptions. These few health care school libraries are being managed by semi or non professionals.

Most of the hospitals, both major and minor have no libraries or library services of any kind. Bhatt [27] indicates that out of 7402 hospitals in the nation, some 55 hospitals— or 0.74% have some sort of libraries. The professional staff of these hospitals have to depend on the neighboring medical college libraries. In the past the major factor was that hospitals could not afford libraries due to cost strongly related to scale. The second factor was that the level of demand for library services was not modest. Hospitals without a library perceive that selected information is adequate and that their need for library services and resources may be limited [265]. Times now have changed. For modern practitioners there is little time for reading even literature of great importance and which is directly related to specific clinical problems at hand. If the library services are to help such physicians, these should be convenient,
prompt and particularly relevant to their specific needs [388].

Each hospital library is itself unique with its own intricate web of information needs [44]. The hospital libraries serve information needs of the health professionals associated with hospitals. The most common requests are for clinical information relating to the patient care to be applied on day to day basis. The collection in hospital libraries emphasizes current literature with periodicals or serial accounting for majority of expenditure. Small hospitals have a core collection of 50-100 books on clinical medicine and specialities and 20-25 periodicals or serial subscribed.

What is needed in the nation in general and the state in particular, is an agency or a body that sets forth as 'mandatory' the existence of either a library or some sort of library services on a contractual basis on the lines of JCAHO in the US.

An agency similar to the JCAHO in India will pave way for the necessary improvements now needed in health care information delivery to the professionals in hospitals thereby affecting every aspect of patient care and education in hospitals. The availability of libraries or services will increase awareness for health related information or literature, and improved patient care is provided. The
patients and communities of Karnataka and India deserve a very well trained and prepared team of health care professionals and specialists who can put to practice, the latest advances and techniques in biomedical and health sciences in the treatment of the sick. The communities expect that the health care team that takes care of patients must have access to all information of value which would in any way affect the delivery of health care and well being of the members in the communities.

For larger hospitals with libraries, the US Medical Library Association [MLA] gives some acceptable standards of both collection, services and staff which are considered as bare minimum. For a large teaching hospital library, the MLA considers an annual acquisition of about 500 titles, 600 subscriptions and a staff of seven as adequate [271]. These standards have been favored and seconded by the accreditation agency- the Joint Commission on Accreditation of Health Care Organizations [JCAHO]. Both the MLA and the JCAHO have been playing an outstanding role in the development of hospital libraries and their services. The State of New York in the United States has specific minimum standards for libraries in the hospitals [189] which is mandatory.

In the nation, the recently established Medical Library Association of India [MLAI] in cooperation with the National
Medical Library New Delhi, Indian Medical Council devised some "Minimum" standards as for Indian Health Sciences Libraries. It is incogitant, to convince the administration of medical schools or a health care institutions to accept these recommendation [30, 261]. The professionals are vacillating if they should request and suggest the above staff formulae in their libraries.

04.13 Administration and Organization:

A library is a part of the total organization of its parent institution. To perform its various functions, it must utilize the services of a number of people who will work together. It is therefore an institution, which has to be administered. Its administrator of the Chief Librarian or the Director is concerned with almost everything that pertains to institutional functions and the management. The "Chief" is to become involved in and ultimately makes major decisions about the collection development, organization of materials, and type of services to be provided to users, etc. The Chief must deal with continued challenges such as budgeting, recruiting and maintaining staff, long and short range plans etc. The powers and functions as a "Chief" depend on the governmental or legal system under which the library operates. One of the most difficult and challenging responsibilities of the "Chief" is to plan ahead to ensure that someone else plans ahead for
the library. Such planning is difficult as this requires projections into the future with a number of intangible factors and it usually involves a complex situation in which a change in one aspect of the institution's work has an important effect on other aspects. The planning of collection development in a new specialization that is going to be taught college and its attached teaching hospital, will have effect on the total education of that speciality and then on the total patient care of the sick. For e.g.:

The attached teaching hospital of a medical school is planning to open a speciality in Cardio-thoracic Surgery and would establish teaching of postgraduate degrees leading to MS in Cardio-thoracic Surgery. It means that the library will have to obtain adequate number of reading materials—both books, periodicals, the back volumes and the audiovisual materials so that the teachers will have access to the reading materials to enable them to teach; the students will have access to materials they require for their education, teaching and practice.

Every "Chief" engages in planning in regard to specific projects such as planning new building, classification and reclassification of books, periodicals and service patterns to users. The process consists of five main steps: [a] Goals; [b] Analyzing available resources; [c] consideration of
alternative ways of using the resources to achieve desired goals; [d] choosing and implementing the alternative; and [e] accessing or evaluating the results of the planning.

04. 13. 1 Goals and Objectives:

Setting goals is probably the most difficult step in planning. The goals define the direction in which a library is going or must go, though they may change as the circumstances dictate. A goal of health sciences library is to assure the improvements of library services. These always reflect the library's overall mission and its guiding principles. Goals describe a desirable future, that is where the library wants to be in a certain period of time. These are broad statements — for e.g. One goal may be "to process new materials in timely manner so as to provide access to current materials".

Each goal's statement must be related in some aspect of mission. If this can not be done, then either the mission needs to be revised or the goal is inappropriate. The mission and goal reflects the environment analysis that has been prepared. In order to obtain more detailed information on which to base the mission, the library may need to attempt to sample opinion.

Here both Delphi Method, Nominal Group Technique [NGT] [139, 185, 258, 381] and Program and Planning Model [PPM] [100, 101] will be useful. The NGT is a structured process
which seeks to provide orderly procedure for obtaining qualitative information from target groups who are more closely associated with the problem area. There is a contention that Social Judgement Analysis is superior to both Nominal Group Technique and the Delphi [323]. The methods for data collection as well as qualitative understanding of major parameters of the problems as perceived by the target groups be developed, otherwise, the data collected might be invalid [194, 267].

Sackman [330] offers different view altogether on the original research stating that the Delphi sampling methods fail to report key population characteristics. Dalkey [90] argues in favor stating that Delphi is based on expert opinion and forecasting future events. Fishcer [135] on the other hand cautions that Delphi needs closer evaluation and scrutiny.

Apart from its pros and cons, the Delphi, NGT and PPM have been used successfully to gauge the problems, for forecasting future events and policy decision determinations in the health sciences libraries [258]. Several libraries in the US have used the NGT in a variety of situations and on regional level. The Midwest Health Sciences Library Network adopted NGT to develop a regional plan on invitation from the National Library of Medicine [185] to explore the Problem Exploration Phase and Planning Process. The Delphi method
seeks to determine the future by asking the target groups users and librarians what they expect the future would be and their responses.

Both in Delphi, NGT and PPM techniques, group reactions forecasting future trends, existing problems, selected solutions are obtained from experts. The results are compiled. From this a description of problems common to the situation is arrived. Groups of one type of personnel are to be held and several other groups can be formed for physicians, health care administrators, nurses, and allied health professionals. The PPM is designed to enable the user group participation in the planning process in such a way that acceptance of change and of a new program is facilitated. A useful NGT technique, is especially helpful in problem exploration phase of planning. The PPM and NGT helps bring about meaningful rather than trivial change and they allow implementation of well designed programs [100, 101].

The major objective is in using the information generated or collected through NGT, PPM or NGT methods to develop a set of hypothesis. The hypothesis will concern the determinate problems, parameters and identifications of the specific areas of inquiry for standardized data collection instruments. An appropriate classification system may be a set of priority headings or traits that are measurable.
Three decisions can guide the researchers in choosing the measurable traits among the priority items:

[a] To search the nominal items that are observable over wide variations;

[b] That seem to explain a large number of related phenomenon; and

[c] That are easiest to measure and lowest in measurement cost.

Action plans are the detailed requirements for accomplishing the objectives and identifying what will be done, by whom, when and how. It is possible to combine the objective and action plan into a single statement. For e.g.:

Mission: To develop a strong collection of reading materials in the biomedical and health sciences.

Goals: To establish lines of communication with the users of library in order to determine their needs.

Objective: To identify programs and subject specialities or the organization and establish contacts.

Action Plan: Acquisition Librarian will write to all speciality departments in January each year requesting list of materials and input
in selection process of reading materials.

04. 13. 1. 1 Goals:

The goals are derived by program area and establish directions for the program area. These will allow a librarian to understand the direction in which the program is moving.

for e.g:

** Program Area: Collection Development:

*Goal:* To establish and maintain effective lines of communications with library users to know the present and future needs.

** Program Area: Circulation:

*Goal:* To establish procedures which guarantee maximum availability of reading materials at all times.

The goals should be broad in scope and extendable over the maximum foreseeable future of 3-5 years. These must be action oriented commencing with "To". for e.g.:

*To acquire of reading materials of possible interest to the organization;*

*To process the reading materials within three days from the receipt;*

*To shelve the new materials within three days of receipt, etc. etc.*
04. 13. 1. 2 Objectives:

These are described as a desired state or outcome of behavior or activity [260]. These must be precise, attainable, consistent, written, flexible and most importantly measurable. for e.g.:

** Program Area: Collection Development.

** Objective: To identify specific program and staff representing subject areas and establish contacts either by letters, memos, telephones or by personal contact.

The objectives usually are accomplished in a year. These should state What will, By whom, and When this will be done. For e.g.:

The new reading materials processed and shelved within three days upon receipt by technical section.

Each objective must be related to one of the goals established and if the objective does not move the library closer to one of the goals, it perhaps is, invalid. The objectives of a library should be specific, measurable statements of attainable and timely course developed by operating unit itself.

The objectives must be specific in order to produce results. The major element here will be the ability to measure
the objective. These should be developed for key areas in the library such as: For whom—Users; What—Improve, expand, add new, etc.; How—collaboration and participation; with What—with available finances, equipments etc.

The objectives identify in each program area, the important expected results. The listing of just functional requirements or responsibilities such as "collect more books, circulate more items" etc. must be avoided.

**04. 13. 1. 3 Action Plan:**

Action plans list all parts of an objective and indicates as to who will be responsible for the task and the date by which it is to be accomplished. These are mechanisms for taking future thinking and making these become a reality. For e.g:

**Program Area:** Collection Development.

**Goal:** To establish procedures which guarantee maximum availability of reading materials at all times.

**Objective:** To identify programs and subject specialities or the organization and establish contacts.
** Action Plan [Fig. 21]**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Person Responsible</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Examine books in Cardio-thoracic Surgery and contact Department Chairman and obtain recommendations.</td>
<td>Asst. Librarian</td>
<td>December 15</td>
</tr>
<tr>
<td>2. Compile a list and forward to the Library Committee.</td>
<td>Chief Librarian</td>
<td>January 15</td>
</tr>
<tr>
<td>3. Obtain Approval and Process Orders for items.</td>
<td>Chief Librarian</td>
<td>February 1</td>
</tr>
</tbody>
</table>

[Fig. 21]

04. 13. 2 Policies and Procedure Manuals:

These are another important aspects of plan implementation which can be derived from structure. These define what is to take place within each unit of library. The organization chart and detailed flow chart will identify the areas where these manuals are needed. These manuals are also means to an end. There is always a possibility that a library service unit will be operated to conform to a policy and procedure rather to meet the needs of its users. Therefore these manuals, when constantly used, must be reviewed frequently to determine if these are consistent with goals and objectives of library.
The policies should be broad statements of what the library will do and should be tied to goals, for e.g. Who is eligible for borrowing privileges, etc. These should be flexible so that staff members can make decisions on the appropriateness of a proposed action. The procedure manuals contain specific instructions for carrying out certain tasks and are likely to be tied to objectives, particularly the ongoing objectives that remain unchanged for a long period of time, such as check-in activity for periodicals [168]. A good management requires a set of written procedures to:

[a] Organize activity;

[b] Establish Standardization; and

[c] Ensure continuity.

The procedures must:

[a] Be up-to-date; and

[b] Reflect current trends in practice.

Effective writing helps to accomplish defined goals. While writing four areas are included which should be concerned with the:

[a] Purpose;

[b] Audience;

[c] Format; and

[d] Contents.
The procedure manuals are helpful for support staff. Their importance to new employees is extremely great since these manuals are step by step guides for discharging the duties [387]. Deshpande strongly favors procedure manuals to assess the performance of each section or unit of the library on regular periodic interval- at least three decades ago.

04. 13. 3 Management:

According to Drucker [111] the purpose of management is to:

** Carry out the mission of the organization;

** Make the work productive and worker achieving; and

** Manage the social impact and responsibility of the organization.

It is to effect a continuing compromise between what the library desires to offer in the way of services and what is feasible in view of the available resources [254]. The management is really a type of behavior, and therefore the modern management theory and practice have been heavily influenced by behavioral sciences [46]. It is work with skills, tools and techniques. It is a life giving organ of the institution it manages. It is a discipline- an organized body of knowledge and therefore applicable everywhere; it is practice, and the essence of which is not knowing but doing
It also is the authority in performance, an objective function. It is to be grounded in the responsibility and performance. It is also a professional function, discipline and task which manages the professionals who practice this discipline, carry out functions and discharge these tasks.

It is not knowledge, but performance. It is the application of common sense of leadership in addition to financial manipulation. Its practice is based on knowledge and responsibility. The task of management is the managing of the social responsibilities of an enterprise. The management is not an end in itself but rather is a means to an end. The goal of most libraries is very simple - More. More of every thing that is good for professionals. More only fixes the direction in which a librarian wishes to head. It does not say how far he/she plans to go and the time taken to get there [112].

And one who manages must have to be an administrator, an entrepreneur and has to manage improve what already exists and known. The managers are the basic resources of the enterprise and they are the most expensive resources.

It is a work which requires specific skills for:

[a] Making effective decisions;
[b] Communications within and without organization;
[c] Proper use of controls and measurements;
Proper use of analytical tools of management science.

According to Peter Drucker [111-113] no one is able to master these skills, but every manager must at least understand these.

Communication is the fundamental process in all the phases of management. Internal communication takes place within the staff and may be either formal or through meetings, written memoranda, manuals or informal through conversation. It takes place usually between the manager and the peer group. The managers therefore must develop effective skills to ensure that the communication is unbiased, since what is communicated is not what is intended. External communication is through newsletters, list of acquisitions, suggestion box, annual report etc. Drucker described management process as "achieving results through people".

Haas [163] identifies four specific purposes of education of library administrators.

[a] Comprehension;
[b] Imagination - Foresee;
[c] Application; and
[d] Apprehension.

Accordingly, all the management activities are based on one of the following purposes:
** Determining purpose of the organization is based on comprehension;
** Planning is based on imagination;
** Implementing the plan is based on application; and
** An evaluation is based on apprehension.

Since the apprehension is the knowledge that the plan may fall short of the goal, evaluation becomes the measure of apprehension. The different management views may be expressed through the tasks of:

01. Planning;
02. Implementation; and
03. Evaluation.

Ford [140] offers some important points in decision making process model:

01. **Problem Recognition:**

One must know what problems exist and must relate these to the objectives and assess problems in terms of urgency and importance and a need for decision;

02. **Problem Diagnosis:**

The librarian must assess situation and foresee likelihood of their occurrences, identify sources of data and estimate value of additional data versus actual cost and finally make diagnostic decision; and
03. **Action Section:**

Objectives defined. Value and time criteria are to be specified, decision criteria are weighed, forecast risks, objectives compare with operating principles, alternatives are sought for action. Predict outcome—estimates gains and losses; seeks more information needed, determines then the best action needed to implement action. This model is an important step in helping librarians minimize risk and improve quality decision making.

04. **13. 3. 1 Planning:**

Planning is one of the most frequently stated concepts in the literature and yet one of the least performed functions by the librarians. It is the primary function of management and its purpose is to organize for effective action. A careful analysis leading to a well-thought out plan is the most powerful tool a librarian will have for solving problems.

Planning is concerned with the development of difference courses of action necessary to achieve established objectives. It requires establishing procedures, determining the necessary work and development of budget. it is necessary to organize effort and is a prime requirement for good decision making [348].
It comprises of the two major elements [a] Environmental analysis; and [b] Definition of mission, Guiding principles, goals and objectives.

04. 13. 3. 2 Environmental Analysis:

The environmental analysis is in itself a learning process which brings to light aspects of libraries and their services that heretofore have been overlooked. It provides a format whereby facts and problems pertaining to libraries and their services can be evaluated. It provides planners and providers- Librarians and health care administrators come closer to a understanding of the health professionals and the environment to be served by identifying needs and interests of user groups thereby allowing development of improved services. It helps individuals within target groups- users- understand their own problems and resources to enable them to take steps forward in resolving their problems independently.

The environmental factors are those forces on which a library has little or no control such as social, political and economical factors that effect the library and its parent organization. Any planning will begin with realistic understanding of existing conditions. Both internal and external forces affect the libraries, therefore these should be assessed and evaluated in order to provide a firm
foundations for setting library goals and objectives and for
developing a plan for future action. for e.g.:

** Users: Who are users served by library ?

** Service Demands: What is required
by the users ?

** Technology: How can it be used ?

** Competition: What other libraries
are offering similar services ?

** Economic: What is status of budget ?

** Political: What factors affect library
in accomplishing its plans ?

The open-system concept stresses the flow of resources
between the library and its environment. The examination of
this critical relationship is the first step in planning
process [179, 243, 414].

The next step in environmental analysis is the
examination or review of present library programs using the
same factors, but applying to library’s internal programs. The
collection, services, and use of resources by users, etc. must
be examined. Planning implies change and any change starts
from the existing stage. This type of analysis is useful in
developing overall plans.
With the analysis of environment complete, the librarian will be ready to define goals and objectives. There are two ways to define objectives, missions or goals:

01. **Top-Down;** and

02. **Bottom-up**

**04. 13. 3. 3 Top-Down Planning:**

In this type the librarian works independently, though key subordinates may be consulted from time to time. It is simpler, short and can be accomplished in record time. The librarian is the only one who is aware of factors or information included in the planning.

After completion and approval of the plan, copies of the approved plans are distributed among the staff. This may be good for 1-2 person libraries. In larger libraries, this approach seldom works. It is naive to accept staff to participate enthusiastically into new plans for implementation in which they have no role in formulation, particularly when a plan calls for an extensive change either in function or structure or both.

**04. 13. 3. 4 Bottom-Up Planning:**

On the other hand, in this type, staff are involved from the very beginning. Even in a 1-2 staff library, this will be extremely helpful.
In this system, the librarian will distribute environmental analysis prepared along with an explanation about the planning process to be undertaken. This will be discussed in a staff meeting, which decides what committees if any, are needed to carry out the steps. These committees are formed along traditional technical and public service lines so long as their members are aware of inter-relationship that exists. This type of planning will be successful since all members have a good hand in its formulation and they are committed to carry it out.

Regardless of the approach selected, the librarian must be aware that implementation of plan means change and that there always will be a certain amount of resistance to change from members and users. Much of the resistance can be resolved by involving subordinates and others in planning process. This will develop group leadership skills and planning competence [179] which are visionary potentials—forecasting; ability to enlist others; risk taking skills; developing confidence or encouraging trust; and developing empowerment skills [344]. The first cycle of planning results more in planning process than in complete plans and hence the administration can not expect too much out of it [414].

After the selection of appropriate system, development of mission, goals and guiding principles—such as policies,
selection of personnel, facilities and services- must begin. The mission statement must be broad and include defining the overall purpose and functions of the library and providing justification for its continuous support, on the basis of mission of the organization. The two concepts requiring consideration in planning process are:

[a] The difference between strategic and tactical planning;

[b] The control of activities to ensure that the desired results are achieved.

Strategic planning is long range planning designed to move library closer to goals; and tactical planning is the process determining individual unit objectives which, when accomplished by each unit, will move the library in the direction indicated by the strategic planning. It is short term plan that is- what must be done now, by what unit or department or section in order to achieve long-range goal or carry out the overall strategy.

The planning of control process, which is equally important must be divided into: [a] Management; and [b] Operational.

The management control is one in which librarian assures that the resources are required, acquired and used in an effective and efficient manner to accomplish organizational
objectives. The operational control is a process of assuring that specific tasks are carried out effectively and efficiently. It is rather difficult to separate these two functions and therefore both are considered in developing comprehensive plans for the library [367].

As planning requires a selection of planning principles and guidelines for the library network, a thorough understanding of planning process must be developed by professionals and then applied to the unique library characteristics [105, 145].

Planning has four aspects [215]:

[a] Contribution to Objectives:
The purpose of plan is to facilitate accomplishment of objectives;

[b] Primacy of Planning:
It is unique in that it establishes objectives necessary for all group efforts. Planning and control are inseparable.

[c] Pervasiveness of Planning:
It is a function of every manager.

04. Efficiency of Planning:
It is measured by the amount it contributes to objectives as well by
costs and other unsought consequences required to formulate

04. 13. 3. 5 Plan Implementation:

Implementation is a period of time when the program plans are "Tried Out". Any error occurring during the planning process surfaces during this period. Both strength and weakness recognized during implementation reflect directly on the planning process.

The plan is cut into packages of action with sufficient information before implementation on each and is undertaken as regards to:

01. What are activities to be undertaken ?
02. Who will undertake these ?
03. What resources will these activities assume ?
04. What target will these activities accomplish ?; and
05. How will the success of these activities be evaluated.

The process of working out detailed answers to these questions so as to help implement the plan is called "The Elaboration of a Plan" [161]. The purpose of such planning is to ensure the systematic accomplishment of a series of activities leading to the achievement of an objective or a set
of objectives of development of a task or a process. The elaboration of plan becomes the most significant link activity between planning and implementation and the success of this depends largely on the thoroughness of how the plan elaboration is done. However well a plan is formulated, it can not be successfully implemented until one has answers to all questions in the action package. Therefore, much attention is devoted to the plan elaboration as well to the plan formulation. The two broad categories of plan action are identified:

01. Program is a large package of actions each consists of several projects. Programing is a combination of activities of related areas. It is also defined as a set of projects which collectively aims at achieving one or more related objectives of a plan. This is the first step in the plan elaboration. For e.g:

In the planning of a library in a state, the development of libraries is an objective. This has to be achieved by increasing the collection development in libraries, increase in the budget, making available spacious and comfortable buildings, equipping libraries with equipment and furniture, training professional librarians and supportive staff, modernizing school or college curricula intensifying the use of libraries, providing training for use of libraries to the
user community and a mechanism for the regular evaluation of libraries, services, user needs and library staff.

02. Project Identification is the second step which is defined as any unit of expenditure which is administered or accounted for as an identifiable group of activities. For e.g:

In the example above, a number of packages of action are seen as constituting the program. These packages may be put together in a form, units of expenditure which can be administered or accounted for together are identified. The results of this exercise may be the identification of additional groups of activities such as:

- Establishing Goals and Objectives;
- Preparation of list of acquisition of reading materials;
- Formulation of library policies and procedures;
- Development of Job Descriptions; and preparation of salary grades etc.
- Selection of suitable candidates;
- Development of physical planning of library;
- Formation of Library Committee;
- Development of In-Service Training Programs for Library Staff;
** User Training Programs;
** The Development of an evaluation
techniques for library as a whole, etc. etc.

Implementation requires a librarian to select a response
to an inferred situation; it requires to consider all aspects
of the plan and of human factor involved before decisions are
made. To arrive at a decision to implement a plan, due
consideration is given to all aspects such as the health
professionals, libraries and services, librarians, and
monetary resources. If these factors are not considered and
are ignored, the implementation decision may very well fail.
Implementation will have to begin with the plan in its place.
This requires different techniques and responses to several
changing circumstances. The librarian must be aware of
interpersonal relations of his/her staff. It is important that
a librarian first prepares a suitable ground and creates an
environment with the organization where the plan is to be
implemented.

There are several aspects that need to be examined before
implementation of a plan such as: Structure of the
organization within which the plan is to be implemented, etc.
etc.
All libraries are structures with sizes— which reflect a particular goal to be accomplished. A library may be structured along with functional lines of acquisition, cataloging, reference, etc. In a library the structure may be separated by professional, semi-professional and non-professionals. Since there is always a structure in a library— either big or small, the plan may warrant restructuring. A strategic plan describes a future that is desired; a need for a different organization, a different staff structure, or a different assignment of responsibilities etc.

Since planning process is in itself a change, it is essential that additional changes may be delayed until staff had time to adjust to the new structuring.

If the planning process is initiated when there are vacant positions, or new positions are being added, the conditions are optimum for restructuring according to plan. It is desirable in other instances to redesign job responsibilities. for e.g. If a full-time reference librarian is responsible for reference section and on-line databases where he/she divides half-time to each. If on-line is dropped from library services, how is he/she going to utilize remaining half-time? A change in job description or responsibilities is required due to this change.
An organizational chart for a library is necessary, which is only a two dimensional representation and reflects only superficial relationship among staff. An organization chart will be the means to an end and not an end in itself. The librarian’s task is to keep in mind a picture of ideal organization or to have it portrayed graphically in a chart. When conditions change, when staff resigns or are on long leave, the librarian can immediately determine how the vacancy should be used to move the library closer to ideal management.

In developing a structure, it is helpful to use the techniques of system analysis [SA] which will help the librarians to identify relationship that can be documented. One of the important techniques of SA is the use of flow charts [160]. Fig. 22-23 will highlight flow charting for purchase and receipt of ordered books.

The controlling is a final step in implementation which is very important. After the organization has been developed, the staff is in place, and appropriate techniques have been developed for directing the activities of staff, it is to be controlled. To complete this process, librarians must set up a control mechanism to:

** Guide budgeting;
** Collecting data for measurement of an activity;
RECEIPT OF BOOKS

START

OPEN CARTON

CHECK P O

NO

PARTIAL SHIPMENT

YES

NOTE ON P O

REFILE COPY OF P O

SEND BOOKS FOR PROCESSING

SEND INVOICE & P O TO ACCOUNTS

SEND COPY OF P O COMPUTER

FOUR COPIES OF P O
OPEN ORDERS BY P O NO

Fig. 23
** Establishing operating standards;
** Reporting results.

All the above functions are inter related and therefore must be carried out simultaneously.

04. 14 Conclusion:

Libraries in general are the essence of the educational foundations and these form a nucleus of their institutions. The special libraries differ from general libraries in that they cater to the specific user community. The very special libraries are the biomedical and allied health sciences libraries which effect all aspects of medical education, research and patient care. No other libraries can qualify to the uniqueness of these libraries as these have direct impact on human beings. The Health Sciences Libraries bridge communications gaps and provide the required information to the health professionals to perform their duties and obligations that are bestowed on them by virtue of their choice to enter into biomedical and health care field. This field is very specialized one. Whatever the health sciences libraries do, to fulfill their goals and objectives, reflect in the biomedical and health education in the communities they are part of. Without these specialized institutions which are cathedrals and foundations of learning, no other system can match the capabilities and specialized services.
The rate at which the biomedical information is expanding, there is hardly any room for negligence on the parts of either the governments, managements or the librarians to ensure timely provision of qualitative biomedical information to health professionals on selective basis just enough to meet their needs and no more and no less. On the other hand the obligation of the health professionals is to ensure that they have access to all information that they require for their education, research and patient care and to demand that these are provided by the elite institutions called "libraries". Unless the health professionals change their attitude towards libraries and librarians and feel that these are essential for their career development and assist them in their duties and responsibilities that the societies and communities have transferred on them, the state of the art of both the biomedical education, research and patient care will not improve.

Having said this one must immediately address the other important aspect and in that the health sciences libraries will cease to exist if they fail in their only goal of provision of biomedical and health information by acquiring materials of possible interest to their users, processing the materials in a way that is convenient to locate, retrieve when required. Because of tremendous information generated in
biomedical, technological, and scientific and its effect on libraries, the health professionals and professions, it is critical that effective library services become the domain the health sciences libraries. The information industries have engaged in processing this specialized information to be able to disseminate and reprieve on selectivity as per the desires of the very special users— the health professionals. The discussions preceded clearly indicate that libraries are hampered with this output and can not match either efforts or resources to ensure that all of possible extent is obtained to serve the health professionals.

In the developing nations such as India, there are no traditions for libraries and library services. With the potful of their budgets, the libraries are working to provide to the possible extent all that is possible for them. These have not kept pace with the advances in the scientific and information sciences and the management. The Change to these libraries is trivial. None would welcome changes that effect the libraries, their collection and services. The librarians of these institutions lack encouragement, status and recognitions.

The situation in Karnataka is similar to the situation of libraries in India. Absolutely nothing will move them a step ahead in their obligations as professionals whose business is
to provide for the health information to the members of the health care team.

The reasons are many—right from the encouragement, status, financial awards, and recognition. A few can be categorized as a little different than the majority. The management and the government are failing to recognize the importance of libraries. To most, the libraries are mandatory conditions from either the Universities or the IMC and that's all. Their improvements both in resources and services is not, they feel, mandatory. Therefore the management do not move towards the improvements of libraries of their institutions.

Because these are the first to suffer the financial cutbacks from their managements, the libraries of Karnataka are at atrophic stage, and these are only repositories. The propensity of managements towards libraries and librarians is that these are required but not essential. The health professionals are inuring these libraries because they do not have a choice. They are ambivalent about libraries and their future.

The librarians to their part face a dilacerated profession because of the trends in the health sciences librarianship because of the above reasons. Some do march ahead and one can not subvert them in their remarkable achievements. Such category is hardly any.
The health sciences libraries, if these are to be empyreal, must change the tracks and accept new challenges resulted due to the advances in scientific and technological fields. The libraries will be able to survive the periods of highest inflation in reading materials. These will be able to augment collection and resources with cooperative arrangements, continuing professional education, adapting to new technologies which are ofcourse part of the 20th century. The resource sharing with others will result in accessing of resources beyond their own collection. The users will find their libraries though with limited resources have access to collection of other libraries which will meet their needs for information. The health professionals will be espousal of libraries and librarians.

The hospitals are essential in provision of health care in the communities. The clinicians, residents and interns are the backbone of these facilities. The discussions has, without a shadow of a doubt proved that the use of libraries in hospitals and health centers- where actual patient care is provided, is much greater than academic centers. The soul purpose of medicine and health care is to provide improved patient care. If these are to meet their goals and objectives, they must have access to the latest information that help and change their treatment methods. The libraries in the hospitals
and health centers therefore become of paramount importance. The Karnataka health care system fail to satisfy this need.

The new technological advances demand that the libraries and librarians of Karnataka take note of the changes and do the right thing- to work to incorporate new changes that have effected them. If they do not meet the technological and scientific challenges and changes they will be lost and will become victims of the information explosion.

What is needed are integrated networks and protocols for sharing data. The Integrated Academic Information Management System [IAIMS] Programs is demonstrating such environments. The IAIMS planning and implementation are on the forward edge of organizational and technological change. They are demanding changes in the technological and administrative skills of health sciences librarians.

The health sciences libraries have reached a stage now where institutional resources are inadequate to meet the growing justified demands for up-to date, qualitative, quantitative and timely biomedical and health information. These have, therefore, to depend on other sources- mainly the health sciences libraries at, either local, state, regional, national or international levels.

Because of these changing times and requirements, the library networks and consortia have been formed, which are
playing a dominating role in the development of libraries and services world wide.