Chapter 5

Resources in Engineering and Medicine

5.1 Introduction:

Publishing industry is transforming due to use of ICT and shifting from print to e-publishing industry. Printed documents are being replaced by e-publications and new publishing in e-form is more preferred by the users. ICT has totally changed the publishing trends and printing slowly shifting to electronic publishing and digital publishing. Today it is observed that publishers are more comfortable in publishing e-documents or digital documents than print because right from submission, editing, peer reviewing etc the tasks are carried out using only digital media contents and on the other hand fast publishing and communicating to society economically. Distribution and access to digital documents is also easy as compared to printed. Digital contents are now more popular and relatively easy and inexpensive to produce as well as acquire. Millions of individuals and thousands of non–book-publishing (media) companies have migrated to publishing and distributing digital contents. In today’s environment of electronic and digital in which everyone is acting as publishers, everybody is searching his own data and information, using ICT and mobile technology, storing information and communicate and access information globally. Internet is like a classroom and e-teacher, high value network gives opportunities to share data or information or communication globally these made academic environment more challenging and huge information explosion is faced by educationalist / academicians / researchers etc.

The advent of ICT has changed the trends in libraries right from collecting, acquiring, storing, retrieving and disseminating information materials and documents. e-Publishing has gained momentum and is ideal form for disseminating the latest research findings and results. It is basically a form of publishing in which books, journals, and other materials are being produced and stored electronically rather than in print. e-Publishing includes the digital publication of e-books, electronic articles and the initiation towards development of digital libraries and catalogues. The future of e-publishing from Indian perspective is increasing.
Advances in computer applications during the past few decades have brought drastic changes in the way information is gathered, stored organized, accessed, retrieved and consumed. The applications of computers in information processing have brought several information products and services into the scene. The internet and the web are constantly influencing the development of new modes of scholarly communication. Electronic resources have surfaced as a dominant medium of communication. Their potential of delivering the goods is quite vast; as they overcome successfully the geographical limitations associated with the print media are eliminated by the e-Resources. Further, the distribution time between product publication and its delivery has drastically reduced and helps in fast communication. These can be used for efficient retrieval and meeting information needs of users. This important fact is convincing many libraries to move towards digital/ e-Resources, which are found to be less expensive and more useful for easy access. At present both print and e-resource information sources are available but slowly publishers are fully migrating to digital publications. In scientific and research as well as academic users are more prone towards use of e-Resources as many resources are available only in e-form more conveniently. In engineering and medical sciences now more e-Resources are being acquired and also used free resources available on net. There is a need to assess the availability of resources in these fields either in print or digital form.

5.2 Traditional Resources: Print:
Print resources are the vital resources in any library and it is available in all most all the libraries. Print media typically includes books, journals, newspapers, articles, etc mainly primary and secondary information resources. Print media is affordable and relatively easy in accessibility till the development of e-Resources.

The characteristics of print media are:
- Easy to handle and carry any where
- Reading or consulting anywhere without any reading aids
- Can be accessible in libraries using catalogues
- Slow growth in publishing as compared to e-Resources
- Cost of the publication is more
- Maintenance in libraries is costly and involve more manpower
• Wear and tear due to handling by users is more and can be mutilated by users
• Resource sharing is weaker and more time consuming in distribution
• Information transfer takes more time
• Access to resources is weak as access points are very few

However print media is the main media prior to e-Resources or digital media.

5.3 Advanced Resources: e - Publications / e-Resources

e-Resources have emerged as one of the most important media of communication. This media has radically changed the way the information is gathered, organized, accessed and consumed. They have exerted a great influence on the academic and professional competence of the academic community. These resources have proved as a great asset to support teaching and research programmes of the university due to faster and easier access to all users in the environment of e-learning.

Due to ICT use in libraries digital media is more popularized and now users and information community / society is feeling the e-Resources more comfortable in use and access than print media.

The advantages of e-Resources or digital resources over the print media are:

✓ A more advanced media and very economical as compared to print.
✓ Introduces more resources in limited revenues and involve new job opportunities.
✓ Relatively more innovative form of media which covers all the media i.e. multimedia contents.
✓ A variety of options for subscription are available over print media like consortium.
✓ Information society can navigate or surf through different channels, sites etc.
✓ Can be reached faster to users either using online or offline.

The main intention of any media is to pass information to pubic more quickly might be in electronic or print media, the public needs to get awareness of the news very quickly to develop monopoly. Most of the users start with print media and gradually switch over to electronic media due to its many fold advances.
Electronic publishing (also referred to as e-publishing or digital publishing) includes the digital publication like e-books, digital magazines, and the development of digital libraries and catalogues etc. Electronic publishing has become common in scientific publishing where it has been argued that peer-reviewed scientific journals are in the process of being replaced by electronic publishing. It is now very common practice to distribute books, magazines, e-Resources, and newspapers to consumers on tablet reading devices, through online vendors such as Apple's iTunes bookstore, Amazon's bookstore for Kindle, and books in the Google Play Bookstore etc. Although the distribution is via internet (also known as online publishing or web publishing in the form of a website) is nowadays strongly associated with electronic publishing. Electronic publishing is also used in the field of student education. Electronic publishing is increasingly popular in scientific areas. While the term "electronic publishing" is primarily used today to refer to the current offerings of online and web-based publishers, the term has a history of being used to describe the development of new forms of production, distribution, and user interaction in regard to computer based production of text and other interactive media. (https://en.wikipedia.org/wiki/Electronic_publishing)

Electronic publishing has been broadly defined as non-print material that is produced digitally. Electronic publishing is an encompassing term for a variety of digitally produced materials (Jones & Cook, 2000) such as bulletin boards, newsgroups, mailing lists, CD-ROM based media, and websites. Material produced electronically can be classified into two major categories that are not mutually exclusive: communication and information management. CD-ROMs and websites are often categorized as information management, while others like newsgroups/forums and mailing lists can be grouped as a means of communication. The differentiation often lies in whether the central purpose is sending messages (communication) or store-housing knowledge or resources (information management).

5.3.1 What are e-Resources?

Electronic resources are very vital source for the scientific research and development. In the recent period e-Resources are widely used by R and D staff and other users of the libraries to carry out day-to-day qualitative research. Electronic resources, is also
known as e- resources, or electronic serials / documents, which are scholarly or intellectual resources that can be accessed via electronic transmission and computer networks. e-Resources are document published in e-form only for better use and accessibility. Different scholars opined that e-Resources very useful than the traditional resources in respect of accessibility. e-Publishing is equated as: Electronic Publishing = Electronic Technology + Computer Technology + Communication Technology + Publishing

One of the most complete definition of Electronic Publishing appears in popular electronic encyclopedia (Grolier Electronic Publishing, 1995), which defines electronic publishing as “e-Publishing refers more precisely to the storage and retrieval of information through electronic communications media. It can use variety of formats and technologies, already widespread used by businesses, general consumers and others are still being developed. e-Publishing technology can be grouped or classified into two general categories: those in which information is stored in a centralized computer source and delivered to the users by a telecommunications systems, including online database services and videotext represents the most active area in e-publishing today and those in which the data is digitally stored on a disk or on a physically deliverable medium”. Electronic publishing is the process for production of typeset quality documents containing text, graphics, pictures, tables, equations etc. it is used to define the production of any document that is in digitized form. It uses new technologies allowing publishers to deliver documents and other contents quickly and efficiently to consumers of information. In brief e-Resources are the resources published only in e-form to achieve benefits of use and economy.

5.4 Type of e-Resources:
There are various aspects related to e-Resources. Digital technologies have made it possible to develop resources which are published more easily, economically, speedily and comfortable to use the stored intellect data using technologies worldwide. e-Resources spread valued information for used in learning, teaching and research; and helps in achieving overall development of the information society. The different types are e-Resources are e-books, e-Journals; databases, e-mail data, internet published material, web published resources and digital documents of any type includes all primary, secondary and tertiary sources. The main purpose of using
e-resource by users and libraries is that, electronic resources are easily accessible even in remote areas where technologies are used. Electronic resources help in solving storage problems and control the flood of information growth to some extent. Print sources are being digitized and stored and maintained for use based on importance. Electronic information sources are becoming more and more important for the academic community. Advent of technologies has made the libraries to add new things and services from its digital collections to users more comfortably. The more prominent e-Resources discussed by Kenchakkanavar (2014) in his communication based on role, types of e-Resources and utility in libraries are:
<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Type of e-Resource</th>
<th>Description of e-Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>e-Books</td>
<td>e-Books are available in many format like PDF and need kindle or e-book reader to access.</td>
</tr>
<tr>
<td>2</td>
<td>e-Journals</td>
<td>e-Journals forms an essential part of any library's collection as it is best primary source of information to users.</td>
</tr>
<tr>
<td>3</td>
<td>e-Newspapers</td>
<td>Useful for current information and available online or web based editions of newspaper and available using internet.</td>
</tr>
<tr>
<td>4</td>
<td>Databases :Bibliographic</td>
<td>Sources issued by indexing and abstracting agencies and provide bibliographic information in the form of abstracts for published literature in all the fields giving bibliographic details.</td>
</tr>
<tr>
<td>5</td>
<td>Databases : Full text</td>
<td>Full text databases are organized collection of full papers / data on a particular subject or multidisciplinary subject areas, and information within databases can be searched and retrieved electronically using free text searching mechanisms.</td>
</tr>
<tr>
<td>6</td>
<td>Databases : Reference Resources</td>
<td>Dictionaries, directories, almanacs, and encyclopedias have reference values and are available online in e-form even over the internet.</td>
</tr>
<tr>
<td>7</td>
<td>Data Banks or Statistical Databases</td>
<td>Databases that contain numerical data useful for research purpose on various subject fields.</td>
</tr>
<tr>
<td>8</td>
<td>Databases : Multimedia</td>
<td>Databases made up of using text, images, animation, pictures and many media together like Encarta Encyclopedia.</td>
</tr>
<tr>
<td>9</td>
<td>e-Thesis</td>
<td>Text or databases of theses submitted to universities available in e-form for use like, Shodhganga, University Microfilms, Proquest etc. These are Ph D Thesis and research Dissertation in e-forms.</td>
</tr>
<tr>
<td>10</td>
<td>e-Patents</td>
<td>Patents are a primary source of information and a valuable tool for researcher. Patents filed in various countries are now available in e-form and accessible free over internet to all.</td>
</tr>
<tr>
<td>11</td>
<td>e-Standards</td>
<td>These are the documents available in e-form developed by the competent authorities for standardized design and dimensions of the products worldwide.</td>
</tr>
<tr>
<td>12</td>
<td>Electronic Clippings</td>
<td>Newspaper databases are available for decision making, forecasting in e-form and available free of charge basis. These sources provide comprehensive analysis of published information in newspapers on a given particular topic.</td>
</tr>
<tr>
<td>13</td>
<td>e-Conference Papers (e-Prints)</td>
<td>Conference proceedings are available in e-form and available to users online or offline.</td>
</tr>
</tbody>
</table>
These are the resources generally available in e-form to users in the areas all the subject and for the purpose of different activities like education, learning, teaching and research. Due to availability of information resources in e-forms it is very easy for the users to access the data and also get the links to research articles on any subject using search engines and ICT.

The library and information services of the 21st century are fast changing due to availability of e-Resources. Due to rapid development of electronic publishing, libraries are not only acquiring reading materials in printed books and journals forms, but also arranging to procure in e-form and provide access to various resources in electronic forms. The web resources and the use of web as a tool for information gathering, has changed the way of users of any subject discipline.

Internet, WWW, Web 2.0 tools and open sources have initiated the concept of use of sharing information, and have focused on user generated content and applications for sharing purpose among the users. This has given the rapid development and popularity to the electronic resources. e-Resources are occupying a significant portion of the global literature. The academic users are more interested in using e-Resources line, academic journals published as Refereed Journals, Review Journals, Preprints and Bulletins as well as non-academic journals which includes Profession and Trade journals, Magazines and Newspapers etc.

5.5 Why e-Resources Needed in Libraries?

E-Resources helps librarians to provide better services to the users community. The few considerable benefited points regarding e-Resources sated by Kenchakkanavar, (2014) are:

1) To get and provide access to an information sources to more users.
2) E-Resources can be searched quickly, using different searching techniques to get accurate information which can be dragged from the ocean of stored and available data.
3) These can be made available easily to the user either free or subscribed.
4) These resources stored in huge volume over the servers and searched efficiently everywhere.
5) Time spent on accessing the e-Resources is less as compared to traditional.
6) Users can evaluate and analyses the data retrieved according to need.
7) To collect, store, organize information in digital form for future use is economical and easy.
8) To promote efficient delivery of information economically to all the users using EDDS
9) Good for developing resource sharing activities.

In libraries e-Resources are more useful for providing library services also. e-Resource collection helped librarians to enhance the quality of existing library services as well as providing new services like e-CAS (Current Awareness Service), Selective Dissemination of Information (SDI), E-Document Delivery Services (EDDS), Online Public Access Catalogue (OPAC) in addition to these digest services, alert services, ask librarian, online data searching services, and mobile based library services, services using internet, social networks, web tools based services etc. E-Resources made transformations in libraries.

5.6 Characteristics of e-Resources:
e-Resources are more useful in libraries nowadays because of their characteristics.
1) Access to e-document by anyone; from anywhere and provide global access to literature on any subject.
2) Retrieval of information from e-Resources is quicker and accurate than print resources.
3) Users can be guided to the documents by providing links to similar and related documents.
4) Easy to search the text using different search techniques and tools.
5) The collection available in any media or multimedia.
6) Rather than ownership access and awareness to literature is more important in case of e-Resources.
7) In electronic environment the interaction between user and librarian is frequent.
8) No defined user groups
9) The software / internet / search engines can help the users in retrieving the desired information quickly from various resources located remotely.
5.7 Selections of e-Resources:
The selection of e-Resources is according to the need and demand of users. Since many e-Resources are available for information society usage in different subject environment, a judicial selection of resources are needed in the libraries. Librarians have to consider some of the guiding principles by preparing collection development policy for e-Resources. Librarians undertake following steps while selecting e-Resources:
1) Understand the needs of users and their preferences.
2) Understand content and scope of e-Resources.
3) Evaluate the e-Resources for proper usage
4) Examine quality of the e-Resources and search facility among them.
5) Maintain cost effectiveness.
6) Verify availability of e-Resources either obtainable through subscriptions or web based or free based.
7) Consider and follow license policies and instructions to buyers fixed by provider.
8) Evaluate resources to achieve economical and useful educational support to users.
9) Assess compatibility and technical support for use.

5.8 Use of Resources in Libraries:
e-Resources are much better advantageous than printed resources and users have now understood the value and benefits of e-Resources, hence users are migrating towards e-resource for various activities. The librarians and libraries are benefited due to e-media. The uses of e-Resources in libraries can be focused as :
1) e-Publishing may be less costly than paper.
2) e- Resources are created and made available in any format like text, audio, video and images.
3) e-Resources are available 24/7 and saves library space, time, finance, and maintenance load
4) e-Resources can be searched easily and prominently because of user friendliness, interface used and use of Boolean operations etc.
5) e-Resources provide users faster, more convenient and anytime access from home, campus or libraries.
6) E-Resources can be accessed using advanced search and retrieval systems.
7) Content can be reproduced, collected, analyzed, repackaged, and disseminated to users instantly through various services.

8) Electronic environment enables libraries to integrate other libraries and make use of their resources through networks of libraries and share their resources.

9) Users access to libraries effectively by dialing up process or using intranet services.

10) Libraries provide access to very large volume of information resources.

11) Libraries focused on providing access to primary information as well as secondary information to users using better library services.

12) Resource sharing is more powerful, this develops economic use

5.9 Issues Related to e-Resources:
e-Resources, no doubt proved beneficial to libraries and users but there are many issues and challenges posed in its management to librarians like:

a. Licensing Issues:
e-Resources need the license from the publishers to use in libraries. License may be for single or multiple users and selected as per the need of users and availability of funds and demand of its use.

b. Intellectual Property Rights:
e-Resources can be easily copied and forwarded to the another users so librarians have be alert about IPR(Intellectual Property Rights) issues while delivery of information.

c. Standards of Metadata:
There are standards for metadata description like MARC21 but the available e-Resources in the market are not following standardized MARC21.

d. Low Budget:
Libraries are non-profit organization so they cannot purchase and afford the costly electronic resources since budgets are very limited and not increased. Budgets are not suiting to fulfilling needs of users even in e-environment.

e. Skilled Manpower:
To manage electronic collection properly, additional skills are required among the staff but existing manpower is lacking desired skills.
f. Lack of Infrastructure:
Use of electronic collection is more effective if supported by powerful ICT components. It is observed that infrastructure in many libraries is not to the mark. Use of r-resources need best configuration.

g. Awareness of e-Resources:
Users are not aware of resources available in their areas and ultimately use is also limited. There is a strong need to enhance the use of e-Resources by orienting users. Orientation to users develops awareness and use of e-Resources may enhance.

5.10 Advantages and Disadvantages of e-Resources:

5.10.1 Advantages of e-Resources:

e-Resources are now more considered in all the disciplines due to manifold advantages like:

Access – e-Resources can be accessed from any computers either on campus or off campus, 24/7. Access to global information either free or subscribed is also made available.

Easily searchable - User can search information themselves and also possible to download complete full text articles using online resources.

Speed - The information can be collected instantly over the net and many times articles/issues appear online before printed version is available.

Interactive - Articles can be read, commented by readers, amended quickly and greater feedback through web. Researcher can contribute his findings instantly and establish monopoly in area.

Links - Hypertext format, exploited links to related articles, information on other web sites, URLs for individual articles and email alerts when latest issue loaded.

Added Value - Advantages received on the web to add value by using animation, virtual reality and interactive mathematical charts.

Inexpensive - Savings of finance in getting free resources, printing resources, resource sharing models are developed like consortium; the collection is sharable and hence cheap.
**Flexibility** - E-Journals published and distributed quickly.

In spite of advantages of e-Resources to all information society, there are few disadvantages of the e-Resources.

### 5.10.2 Disadvantages of e-Resources:

- Many users face difficulties while reading e-Resources on computer screens and also getting proper downloads, formats of documents are not standarised etc
- Computer monitor has its own capabilities
- Read information on the screen is tiresome to readers
- Search engines ignores PDF files
- Format of e-Resources are different and faces problems in opening the resources on the screen.

These drawbacks can be solved by the users many times.

### 5.11 e-Resources in Engineering:

Libraries have witnessed a great metamorphosis in recent years both in their collection development and in their services. Over the last several years, a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials. Mulla and Chandrasekhara (2006) stated in their study that e-Resources in engineering are growing and authors opined that engineering colleges are procuring e-Resources but they are struggling hard in building proper digital collection due to problems like:

- Lack of awareness of availability of e-Resources in the field
- Lack of ICT infrastructure,
- Lack of IT trained manpower,
- Lack of awareness of the digital resources available at different sources free of charge,
- Lack of user needs and demands,
- Lack of financial support,
- Lack of access facilities like computer facilities, network facilities etc,
• Lack of knowledge about the digital preservation methods,
• Lack of training for the digital access to users and staff,
• Lack of searching techniques and capabilities to access data online form databases.

But slowly these factors may be changed and use of e-Resources might be enhanced due to efforts of librarians.

To get awareness of e-Resources in the field of engineering researcher has collected few prominent resources and listed below. The information collected from the links available over the internet useful for all the engineering branches for learning, teaching, and research.

5.11.1 Databases and e-Resources in Engineering:

➢ **IEEE: (Institute of Electrical and Electronics Engineers)**

IEEE (Institute of Electrical and Electronics Engineers) is established in 1884 as the AIEE, IEEE is formed in 1963 when AIEE merged with IRE. IEEE is an organization; consist of engineers, scientists, and students. The IEEE is best known for developing standards in the area of computer and electronics industry. IEEE 802 standards are used in local-area networks widely. IEEE is "the world's largest technical professional society -- promoting the development and application of electro technology and allied sciences for the benefit of humanity, and the advancement of the profession, as well as well-being of their members. (http://www.ieee.org/about/index.html)

➢ **ACM: (Association for Computing Machinery)**

ACM (Association for Computing Machinery) is established at the dawn of the computer age. ACM’s reach extends to every part of the globe, with more than half of its 100,000 members residing outside the USA. Its growing membership has led to Councils in Europe, India, and China, fostering networking opportunities that strengthen within and across countries and technical communities. ACM’s raises awareness of computing, technical, educational, and social issues around the world. The ACM Digital Library Portal provides access to the ACM Digital Library and the Guide to Computing Literature. The Digital Library consists of full-text of all
the publications of the Association for Computing Machinery (ACM). This includes journals, transactions and magazines, conference proceedings, and the SIG publications. (https://en.wikipedia.org/wiki/Association_for_Computing_Machinery)

- **ASME: (American Society of Mechanical Engineers)**
  ASME (American Society of Mechanical Engineers) promotes the art, science and practice of multidisciplinary engineering and allied sciences around the globe. ASME is a not-for-profit membership organization that supports collaboration, knowledge sharing, career enrichment, and skills development across all engineering disciplines, toward a goal of helping the global engineering community to develop solutions to benefit lives and livelihoods of human. It was established in 1880 by a small group of leading industrialists. ASME has grown through the decades to include more than 130,000 members in 151 countries. Thirty-two thousand of these members are students. They bring out society publications in engineering field. (https://en.wikipedia.org/wiki/ASME)

- **J-Gate:**
  J-Gate is a free database of open access journals, launched in February 2006. J-Gate is hosted by Informatics (India) Ltd Bangalore. J-Gate is an electronic gateway to global e-journal literature. J-Gate provides seamless access to millions of journal articles available online offered by 13,117 Publishers. It presently holds massive database of journal literature, indexed from 46,508 e-Journals with links to full text at publisher sites. J-Gate also plans to support online subscription to journals, electronic document delivery, archiving and other related services. The data is available to multi-disciplinary users which includes engineering sciences stream also. (https://jgateplus.com/search/footer-html/AboutUs.jsp)

- **INDEST-AICTE Consortium: (Indian National Digital Library in Engineering Sciences and Technology)**
  “Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium” set up in 2003 by Ministry of Human Resource Development (MHRD) on the recommendation of an expert group appointed by the ministry. IIT Delhi has
been designated as the Consortium Headquarters to coordinate INDEST activities. The Consortium was renamed as INDEST-AICTE Consortium in December 2005 as AICTE plays a pivotal role in enrolling its approved engineering colleges and institutions as members of the consortium for selected e-Resources at much lower rates of subscription. Very good resources for engineering science stream users containing qualitative journals, databases and other resources. (http://www.library.iitb.ac.in/indest/)

- **ASCE:** (American Society of Civil Engineers)
ASCE (American Society of Civil Engineers) have more than 150,000 members of the civil engineering profession in 177 countries. Established in 1852 and ASCE is nation’s oldest engineering society. ASCE stands at the forefront of a profession that plans, designs, constructs, and operates society’s economic and social engine. Through the expertise of its active membership, ASCE is a leading provider of technical and professional conferences and continuing education, the world’s largest publisher of civil engineering content, and an authoritative source for codes and standards that will be protecting the public welfare and interest of the society. (https://en.wikipedia.org/wiki/American_Society_of_Civil_Engineers)

- **USPTO:** (United States Patent and Trademark Office)
USPTO (United States Patent and Trademark Office) is an agency in the U.S. Department of Commerce, USA that issues patents to inventors and businesses for their inventions, and trademark registration for product and intellectual property identification. Established in 1975 at Washington DC, USA, and its headquarters are at USA. (https://en.wikipedia.org/wiki/United_States_Patent_and_Trademark_Office)

- **UGC-INFONET**
The UGC-Infonet Digital Library Consortium was formally launched in December, 2003 by Honorable Dr. A P J Abdul Kalam, then the President of India soon after providing the internet connectivity to the universities in the year 2003 under the UGC-Infonet programme. The UGC-INFONET Digital Library Consortium is now no more operational. It has been merged into "e-Shodh Sindhu Consortium". The Consortium provides current as well as archival access to more
than 7500 core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines. The programme has been implemented in phased manner. The first phase began in 2004, to provide access to e-Resources and provided to 50 universities those have internet connectivity under the UGC-Infonet Connectivity programme under the banner of UGC. (http://www.inflibnet.ac.in/ess/about.php)

- **ASTM International:** (American Society for Testing and Materials)

ASTM was founded in 1898 as the American Section of the International Association for Testing Materials. ASTM is best known for its standards, the Digital Library is a collection of nearly every other ASTM publication – 1,500+ eBooks and 60,000+ papers and chapters, dating back to 1932. These are seminal reference publications that provide: critical insight on the need for a standard as well as the technology and research that led to its development, Hands-on guidance on the proper application and interpretation of a standard, First-hand accounts of user experiences and their opinions on improvements and future needs in their industries. ASTM publishes standards in all the subject area especially in engineering. ASTM International, formerly known as American Society for Testing and Materials (ASTM) an organization that develops international standards for materials, products, systems, and services used in construction, manufacturing, and transportation. It is headquartered at West Conshohocken, Pennsylvania, United States.

ASTM International Digital Library: ASTM International is one of the largest voluntary standards development organizations in the world-a trusted source for technical standards for materials, products, systems, and services. Known for their high technical quality and market relevancy, ASTM International standards have an important role in the information infrastructure that guides design, manufacturing and trade in the global economy. (https://en.wikipedia.org/wiki/ASTM_International)
AICHE: (American Institute of Chemical Engineers)

AICHE (American Institute of Chemical Engineers) is the world's leading organization for chemical engineering professionals, with more than 50,000 members from over 100 countries. AICHE has the breadth of resources and expertise for core process industries or emerging areas, such as translational medicine. Established in 1908, and AICHE is a nonprofit organization providing leadership to the chemical engineering profession representing more than 50,000 members in industry, academia, and government. It publishes scholarly journals and communications for the engineers (https://en.wikipedia.org/wiki/American_Institute_of_Chemical_Engineers).

INSPEC: (Information, Service for Physics Engineering And Computing )

INSPEC is a major indexing database of scientific and technical literature, published by Institution of Electrical Engineers (IEE) now Institution of Engineering and Technology (IET). INSPEC coverage is extensive in the fields of physics, computing, control, and engineering. Its subject coverage includes astronomy, electronics, communications, computers and computing, computer science, control engineering, electrical engineering, information technology, physics, manufacturing, production and mechanical engineering. INSPEC was started in 1967 as an outgrowth of the Science Abstracts Service. The electronic records were distributed on magnetic tapes. In the 1980s, it was available in the U.S. through the Knowledge Index, a low-priced dial-up version of the Dialog service for individual users, which made it popular. This is a good resource for the physics and engineering users. INSPEC database subscription helps the LIS Professionals to give advanced information and bibliographic services to: Scientists, Engineers, Information scientists, Patent specialists, Students, researchers etc. (https://en.wikipedia.org/wiki/Inspec)

Ei Compendex: (Ei= Engineering Information)

Ei Compendex is most comprehensive bibliographic engineering database, covering 190 disciplines from the world's significant engineering and technology literature. Database includes journals, conference proceedings, selected government reports and books. Subjects included are: civil, energy, environmental, geological, and biological engineering; electrical, electronics, and control engineering; chemical, mining, metals,
and fuel engineering; mechanical, automotive, nuclear, and aerospace engineering; computers, and robotics. The database is designed to assist engineers, scientists and others. "Compendex" is a database that provides abstracts from the world’s significant engineering and technological literature. This database can be accessed using the Engineering Village platform. COMPENDEX is the only database available to us on the Engineering Information platform.

Compendex (Ei Village 2) includes Compendex a bibliographic database of scientific and engineering research, covering all engineering disciplines. It includes millions of citations and abstracts from thousands of journals and conference proceeding (www.bodleian.ox.ac.uk/__data/assets/word_doc/0017/.../COMPENDEX_EI.doc)

➢ Web of Science:
Previously known as (ISI) Web of Knowledge is an online subscription-based scientific citation indexing service maintained by Thomson Reuters that provides a comprehensive citation search. It gives access to multiple databases that reference cross-disciplinary research, which allows for in-depth exploration of specialized sub-fields within an academic community and includes scientific discipline. (http://thomsonreuters.com/en/products-services/scholarly-scientific-research/)

➢ Current Contents: (Institute of Scientific Information)
Current Contents is a rapid alerting service database from the Institute for Scientific Information, now part of Thomson Reuters, published online and in several different printed subject sections. Current Contents was first published in paper format, in a single edition devoted only to biology and medicine. Other subject editions were added later including Chemical Engineering. Initially, it consisted simply reproduction of the title pages from several hundred major peer-reviewed scientific journals, and was published weekly, with the issues containing title pages from journal issues. There is an author index and a crude keyword subject index. Author addresses were provided so readers could send reprint requests for copies of the actual articles. (https://en.wikipedia.org/wiki/Institute_for_Scientific_Information)
ACM Digital Library: (Association for Computing Machinery)

The Association for Computing Machinery (ACM) is an international learned society for computing. It was founded in 1947 and is the world's largest scientific and educational computing society. It is a not-for-profit professional membership group. Its membership is more than 100,000. Its headquarters is at New York. The ACM and the IEEE Computer Society are the umbrella organizations for US academic and scholarly interests in computing. Unlike the IEEE, the ACM is solely dedicated and very efficient in the area of modern computing. (https://en.wikipedia.org/wiki/Association_for_Computing_Machinery)

Engineering Village:

It provides access to 12 engineering document databases from a wide range of trusted and credible sources with a breadth and depth of content.

- Ei Compendex
- Inspec - IET
- GEOBASE
- GeoRef - AGI
- NTIS
- EnCompassLIT & EnCompassPAT
- Paperchem
- CBNB
- Chimica

This important resource saves time and provides access to relevant information in a convenient, fast, and reliable way using the leading engineering information discovery platform. Engineering Village is a powerful search platform that is essential for researchers, students, and faculty. Using a wide range of resources, including journals, conference proceedings, trade publications, patents, government reports and more, researchers can improve productivity and facilitate important discoveries with Engineering Village. (https://www.elsevier.com/solutions/engineering-village)
- **McGraw Hill Education:**
McGraw-Hill Education (MHE) is an American learning science company and one of the "big three" educational publishers that provides customized educational content, software, and services for pre-K through postgraduate education. The company also provides reference and trade publications for the medical, business, and engineering professions. McGraw-Hill Education currently operates in 28 countries, has more than 4,800 employees globally, and offers products and services to over 135 countries in nearly 60 languages. Using a wide range of resources, including journals, conference papers support to education system. (https://en.wikipedia.org/wiki/McGraw-Hill_Education)

- **John Wiley and Sons Inc:**
John Wiley is also referred to as Wiley and is a global publishing company that specializes in academic publishing and markets its products to professionals and consumers, students and instructors in higher education, and researchers and practitioners in scientific, technical, medical, and scholarly fields. The publishing company produces books, journals, and encyclopedias, in print and electronically, as well as online products and services, training materials, and educational materials for undergraduate, graduate, and continuing education students. Established in 1807, Wiley is also known for publishing For Dummies. As of 2015, the company had 4,900 employees and revenue of $1.8 billion. (http://www.wiley.com/)

**General Engineering Resources**

- **AccessEngineering:**
Access Engineering is focused around 14 major areas of engineering: Biomedical, Chemical, Civil, Communications, Construction, Electrical, Energy, Environmental, Green/Sustainable, Industrial, Material Science, Mechanical, Nanotechnology, Optical features etc. It features content from a broad range of engineering publications, including the latest editions of classics such as Marks' Standard Handbook for Mechanical Engineers, Perry's Chemical Engineers Handbook, and Standard Handbook for Electrical Engineers, Roark's Formulas for Stress and Strain, and many more.
- **CRCnetBASE:**
  Professional and technical books are available in chemistry, engineering, materials science, environmental science, mathematics, statistics, food science, forensic science, law enforcement, information security, neuroscience, nano-science and nanotechnology.

- **IET Digital Library:**
e-Books and Journals Archives. The IET Digital Library is a global repository of science, engineering and technology focused content produced by the world’s leading international scientific organization and thought leader.

- **ASHRAE:**
  ASHRAE standards establish consensus for test methods and performance criteria. These include voluntary consensus standards for Method of Measurement or Test, Standard Design and Standard Practice. Consensus standards define minimum values or acceptable performance. ASHRAE is accredited by the American National Standards Institute (ANSI) and follows ANSI's requirements for due process and standards development.

- **ICE Virtual Library:**
The ICE Virtual Library is brought by Thomas Telford, the knowledge business of the Institution of Civil Engineers. They create innovative products and services for the civil engineering and construction markets. These include books, journals, recruitment and training, as well as best practice, news and networking opportunities around the NEC and Euro codes.

There are many other resources in engineering sciences, every librarian of engineering colleges have to develop a compilation of engineering resources for the benefits of the users and make them aware of availability of resources in the area.
Some resources available in engineering sciences are listed in table 5.2

Table 5.2 Resources in Engineering Sciences

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Most Preferred Engineering Resources</th>
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<tbody>
<tr>
<td>1</td>
<td>IEEE/IEE</td>
</tr>
<tr>
<td>2</td>
<td>ACM</td>
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<tr>
<td>3</td>
<td>ASME</td>
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<td>4</td>
<td>ASTM</td>
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<tr>
<td>5</td>
<td>J-Gate</td>
</tr>
<tr>
<td>6</td>
<td>INDEST- AICTE Consortium</td>
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<td>7</td>
<td>AICHE</td>
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<td>8</td>
<td>ASCE</td>
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<td>9</td>
<td>USPTO</td>
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<tr>
<td>10</td>
<td>UGC Infonet</td>
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<td>11</td>
<td>INSPEC</td>
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<td>12</td>
<td>Ei Compendex</td>
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<td>13</td>
<td>Web of Science</td>
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<tr>
<td>14</td>
<td>Current Contents</td>
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<tr>
<td>15</td>
<td>ACM Digital Library</td>
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<tr>
<td>16</td>
<td>Buyers Guide</td>
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<td>17</td>
<td>Infolibrarian</td>
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<tr>
<td>18</td>
<td>Engineering Village</td>
</tr>
<tr>
<td>19</td>
<td>McGraw Hill Education</td>
</tr>
<tr>
<td>20</td>
<td>Wiley Online Library</td>
</tr>
<tr>
<td>21</td>
<td>NSDL library</td>
</tr>
</tbody>
</table>
Some reference collection required by engineering users is:


5.12 e-Resources in Medical Sciences:

Medical science has many resources which support to different subjects in the field. Apart from the print media there are many e-Resources now available in medical sciences. Researcher has isolated some prominent resources in the area and listed here.

➤ **PubMed:**
PubMed, first released in January 1996, free office-based MEDLINE searching. PubMed is a service of the US National Library of Medicine which provides free access to MEDLINE, the NLM database of indexed citations and abstracts to medical, nursing, dental, veterinary, health care, and preclinical sciences journal articles which includes additional selected life sciences journals not in MEDLINE. It adds new citations daily. The PubMed was developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine. (NLM) From 1971 to 1997, MEDLINE online access to the MEDLARS Online computerized database had been primarily through institutional facilities, such as university libraries. [https://www.ncbi.nlm.nih.gov/pubmed](https://www.ncbi.nlm.nih.gov/pubmed)

➤ **Scopus:**
Scopus is a product of Elsevier which is in English language. The publishing started from 1995 and presently covers 55 Billion records. Scopus is a bibliographic database containing abstracts and citations for academic journal articles. It covers nearly 22,000 titles from over 5,000 publishers, of which 20,000 are peer-reviewed journals in the scientific, technical, medical, and social sciences (including arts and
humanities). It has tracts from more than 300 magazines. (Additional information at engineering resources) (https://en.wikipedia.org/wiki/Scopus)

- **Springer Link:**
  Springer established by Julius Springer in Berlin in 1842 and his son Ferdinand Springer grew it from a small firm of 4 employees into Germany's second largest academic publisher with 65 staff in just 30 years. In 1964, Springer expanded its business internationally, opening an office in New York. Company offices are located in Tokyo, Paris, Milan, Hong Kong, and Delhi. Springer Science plus Business Media or Springer is a global publishing company that publishes books, e-books and peer-reviewed journals in science, technical and medical (STM) publishing. Springer also hosts a number of scientific databases, including SpringerLink, Springer Protocols, and SpringerImages. Book publications include major reference works, textbooks, monographs and book series; more than 168,000 titles are available as e-books in 24 subject collections. (http://link.springer.de/)

- **ScienceDirect:**
  ScienceDirect is a product of Elsevier. It was established in 1997, covers science disciplines, and covers Index, abstract and full-text articles. It is used all over the world. ScienceDirect is a website which provides subscription-based access to a large database of scientific and medical research. It hosts over 12 million pieces of content from 3,500 academic journals and 34,000 e-books. (http://www.sciencedirectcom/)

- **Annual Reviews:**
  Annual Reviews Inc. publishes journals from the most highly cited scientific literature, and are available in print and online to individuals, institutions, and consortia throughout the world. Since 1932, Annual Reviews has offered comprehensive, timely collections of critical reviews written by leading scientists. Annual Reviews volumes are published each year for 46 focused disciplines within the Biomedical, Life, Physical, and Social Sciences including Economics. (https://en.wikipedia.org/wiki/Annual_Reviews_ (publisher))
MEDLINE:
MEDLINE (Medical Literature Analysis and Retrieval System Online, or MEDLARSOnline) is a bibliographic database of life sciences and biomedical information. It includes bibliographic information for articles from academic journals covering medicine, nursing, pharmacy, dentistry, veterinary medicine, and health care. MEDLARS (Medical Literature Analysis and Retrieval System) are a computerized biomedical bibliographic retrieval system. It was launched by the National Library of Medicine in 1964 and was the first large scale, computer based, retrospective search service available to the general public. The database contains more than 26 million records from 5,639 selected publications covering biomedicine and health from 1950 to the present. (https://en.wikipedia.org/wiki/MEDLINE)

HINARI:
HINARI provide access to research in health programme and was set up by the World Health Organization and major publishers to enable developing countries to access collections of biomedical and health literature. In response to a call by the then UN Secretary General Kofi Annan and to a statement issued by Gro Harlem Brundtland the then Director General World Health Organization, HINARI was launched in July 2001 with a statement of intent from six major publishers: Blackwell Publishing, Elsevier, the Harcourt, Wolters Kluwer, Springer Science plus Business Media, and John Wiley and Sons. As of 2015 there are almost 200 publisher partners providing their online publications through HINARI. 3,750 journal titles were accessible via HINARI in 2007. (https://en.wikipedia.org/wiki/HINARI)

DynaMed:
In 1995, Dr. Alper created DynaMed with a mission of providing the most useful information to healthcare professionals at the point-of-care. Dr. Alper developed a systematic evidence-based process to keep information current and provided DynaMed free on the Internet. DynaMed is a clinical reference tool created by physicians for physicians and other healthcare professionals for use primarily at the 'point-of-care,' with clinically-organized summaries for more than 3,200 topics. (http://www.dynamed.com/home/)
INDEX MEDICUS:
Index Medicus (IM) is a subset of MEDLINE, which is a bibliographic database of life science and science information, principally scientific journal articles. In 1960, the United States National Library of Medicine (NLM) began computerizing the indexing work by creating MEDLARS, a bibliographic database, which became MEDLINE. Today, Index Medicus and Abridged Index Medicus conceptually serve as content duration services that curate MEDLINE content into search subsets or database views (in other words, subsets of MEDLINE records from some journals but not others). This filters search results with a view toward excluding poor-quality articles (such as by excluding junk journals), which is often helpful depending on the needs of the user. (https://en.wikipedia.org/wiki/Index_Medicus)

SCIRUS:
Scirus is a comprehensive science-specific search engine. Like CiteSeerX and Google Scholar, it is focused on scientific information. Unlike CiteSeerX, Scirus is not only for computer sciences and IT and not all of the results included full text. It sent its scientific search results to Scopus, an abstract and citation database covering scientific research output globally. Scirus is owned and operated by Elsevier. In 2013, an announcement appeared, on the Scirus homepage, announcing the site's retirement in 2014. (https://en.wikipedia.org/wiki/Scirus)

Google Scholar:
Google Scholar is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines. Released in beta in November 2004, the Google Scholar index includes most reviewed online academic journals and books, conference papers, theses and dissertations, preprints, abstracts, technical reports, and other scholarly literature, including court opinions and patents. Google Scholar is similar in function to the freely available CiteSeerX and getCITED. It also resembles the subscription-based tools, Elsevier's Scopus and Thomson Reuters' Web of Science. (https://en.wikipedia.org/wiki/Google_Scholar)
OVIDSP:

OvidSP is a search platform which provides access to databases, books and journals offered by the Medical Library at Health First. OvidSP allows to view the full-text content of selected books and journals. The primary medical and nursing literature databases, MEDLINE and CINAHL are available through Ovid. These literature databases contain links to the full article for only those electronic journals to which our library subscribes. Also available on OvidSP, is the Books@Ovid database, which provides full-text searchable access to over 100 medical and nursing textbooks. (https://www.ucl.ac.uk/ion/library/documents/Guide_to_OvidSP.pdf)

MD Consult:

MD Consult is an online resource geared toward physicians and other health care professionals. It offers clinicians the means to quickly answer clinical questions and keep current with medical literature by integrating “the most renowned collection of medical content online. Current Contents: Current Contents is a rapid alerting service database from the Institute for Scientific Information, now part of Thomson Reuters that is published online and in several different printed subject sections. (https://hsl.osu.edu/resources/md-consult-changing-clinicalkey)

CINHAL

CINAHL stands for the Cumulative Index of Nursing and Allied Health Literature and is the largest and most in-depth nursing research database. The CINAHL Complete database provides full text for 1,500 journals, and indexing for 5,500 journals from the fields of nursing and allied health. (https://www.ebscohost.com/nursing/products/cinahl-databases/cinahl-complete)

PsycINFO:

PsycINFO is a database of abstracts of literature in the field of psychology. It is produced by the American Psychological Association and distributed on the association's APA Psycnet and through third-party vendors. (https://www.ebscohost.com/academic/psycinfo)
**Biological Abstract:**

Biological Abstracts is a database produced by Thomson Reuters through its subsidiary BIOSIS. It includes abstracts from peer-reviewed academic journal articles in the fields of biology, biochemistry, biotechnology, botany, pre-clinical and experimental medicine, pharmacology, zoology, agriculture, and veterinary medicine published since 1926. It can be accessed through number of services, including Ebsco, Ovid and the Web of Knowledge. Biological Abstracts / RRMs is similar, except that it covers meetings and conferences, literature reviews U.S. patents, books, software and other media instead of journal articles. The combination of the two is marketed as BIOSIS Previews. ([https://en.wikipedia.org/wiki/Biological_Abstracts](https://en.wikipedia.org/wiki/Biological_Abstracts))

**Chemical Abstract:**

Chemical Abstract provides summaries of disclosures in recently published scientific documents. Approximately 8,000 journals, technical reports, dissertations, conference proceedings, and new books, in nearly 50 languages, are monitored yearly. Patent specifications from 27 countries are covered and two international organizations. Chemical Abstracts ceased print publication on January 1, 2010 and now available in e-form. ([http://www.worldcat.org/title/chemical-abstracts/oclc/1553947](http://www.worldcat.org/title/chemical-abstracts/oclc/1553947))

**SciFinder:**

SciFinder, produced by Chemical Abstracts Service (CAS), is the most comprehensive database for the chemical literature, indexing journal articles and patent records (and other document types), as well as chemical substances and reactions. Source can be searched by topic, author, and substances by name or CAS Registry Number, OR use the editor to draw chemical structures, substructures, or reactions. It’s a core research tool for chemistry, biochemistry, chemical engineering, materials science, nanotechnology, physics, environmental science and other science and engineering disciplines. It is dependent on the topic of research. SciFinder's is complementary to other databases like Reaxys, Web of Science, PubMed, Compendex and INSPEC. ([http://www.cas.org/products/scifinder](http://www.cas.org/products/scifinder))
**EMBASE: (EMBASE for Excerpta Medica dataBASE)**

Embase (often styled as EMBASE for Excerpta Medica dataBASE) is a biomedical and pharmacological database of published literature designed to support information managers and pharmacovigilance in complying with the regulatory requirements of a licensed drug. Embase is developed by Elsevier and contain more than 28 million records from over 8,400 currently published journals from 1947 to the present. Through its international coverage, daily updates, and drug indexing with EMTREE, Embase enables tracking and retrieval of drug information in the published literature. Each record is fully indexed and "Articles in Press" are available for some records and "In Process" is available for all records, ahead of full indexing. Embase database has international coverage, which expands across biomedical journals from 90 countries and is available through database vendors. (https://en.wikipedia.org/wiki/Embase)

**EBSCO:**

EBSCO Information Services is the third largest private company offers library resources to customers in academic, medical, K–12, public library, law, corporate, and government markets. Its products include EBSCONET, a complete e-resource management system, and EBSCOhost, which supplies a fee-based online research service with 375 full-text databases, a collection of 600,000-plus e-books, subject indexes, point-of-care medical references, and an array of historical digital archives. In 2010, EBSCO introduced its EBSCO Discovery Service (EDS) to institutions, which allows searches of a portfolio of journals and magazines. (https://www.ebsco.com/about?_ga=1.62395244.1512436176.1480678307)

**International Pharmaceutical Abstracts:**

The International Pharmaceutical Abstracts (IPA) provides a comprehensive collection of information on drug use and development. As a primary source of drug-related health literature, IPA provides pharmacists, poison information specialists, drug information centers, the pharmaceutical industry, health practitioners, pharmacologists, medical librarians, cosmetic companies, environmentalists, educators, toxicologists, and litigators with information from over 800 health journals throughout the world. (https://health.ebsco.com/products/international-pharmaceutical-abstracts)
Cochrane Library Online:

The Cochrane Library (named after Archie Cochrane) is a collection of databases in medicine and healthcare specialties provided by Cochrane and other organizations. Core collection covers Cochrane Reviews, a database of reviews and meta-analyses which summarize and interpret the results of medical research. The Cochrane Library aims to make the results of well-conducted controlled trials readily available and is the main and a very key resource in evidence-based medicine. (http://www.cochranelibrary.com/cochrane-database-of-systematic-reviews/)

Access Medicine:

Access Medicine is from McGraw-Hill Medical is a comprehensive online medical resource that provides a complete spectrum of knowledge from the best minds in medicine, with essential information accessible anywhere. Access Medicine provides medical students with a variety of resources needed to excel in basic science studies and clerkships; helps residents, nurse practitioners, and physician assistants with instant access to videos, self-assessment, and leading medical textbooks that facilitate decision-making at the point-of-care and enables faculty to create, track, and report their students’ progress through a curriculum tool that eases workflow. This resource allows practicing physicians to brush up on their medical knowledge to ensure the best treatment to patient to outcome from problems. (http://accessmedicine.mhmedical.com/Index.aspx)

Clinical Evidence:

It means applying current best evidence to clinical decision making. Thus integrating evidences with individual clinical expertise and the needs and values of patients. Clinical Evidence focuses on outcomes that matter to patients, meaning those that patients themselves are aware of, such as symptom severity, quality of life, survival, disability, walking distance, and live birth rate. (http://www.clinicalevidence.com/x/set/static/cms/open-access.html)

Clinical Practice:

Good Clinical Practice (GCP) is an international quality standard, provided by ICH, an international body that defines standards, and governments can transpose into
regulations for clinical trials involving human subjects. GCP guidelines include protection of human rights for the subjects and volunteers in a clinical trial. It also provides assurance of the safety and efficacy of the newly developed compounds. GCP guidelines include standards on how clinical trials should be conducted; define the roles and responsibilities of clinical trial sponsors, clinical research investigators, and monitors. In the pharmaceutical industry monitors are often called clinical research associates. (wikipedia.org/wiki/Good_clinical_practice)https://en.

➢ JBI Connect: (Clinical Online Network of Evidence for Care and Therapeutics)

JBI COnNECT+ (Clinical Online Network of Evidence for Care and Therapeutics) provides easy access to evidence-based resources, making it easy to find and it uses the proper and clear evidence to inform clinical decision-making. (http://connect.jbiconnectplus.org/About.aspx)

➢ EBM Resources:

In the case of medicine or health care, decisions about the care of individual patients are essential. Evidence based medicine (EBM) is originally defined as the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. (http://library.downstate.edu/resources/ebm.htm)

➢ Nursing Reference Centre:

Nursing Reference Centre is committed to educating nurses about evidence-based medicine and nursing best practices. As a part of that effort, Nursing Reference Centre refocuses on ensuring that staff nurses, nurse educators, recent nursing graduates and nursing students have quick and easy access to the most current information to provide the best care possible to their patients. Nursing Reference Center provides staff nurses and nurse educators with a resource that supports education goals, encourages nursing students to access the original research, and provides options for patient care while preserving and supporting the essential learning opportunities that educators want to provide. (https://www.ebscohost.com/nursing/products/nursing-reference-center)
ACP PIER: (Physicians' Information and Education Resource)

ACP PIER is now ACP Smart Medicine, ACP Smart Medicine is an electronic, evidence-based, decision-support tool designed for point-of-care use by internists and other physicians. It is developed and supported by the American College of Physicians. The Physicians' Information and Education Resource (PIER) was launched in 2002. It was replaced with ACP Smart Medicine in 2013. In August 2015 the American College of Physicians in partnership with EBSCO Health incorporated ACP Smart Medicine's content into EBSCO Health's DynaMed Plus evidence-based clinical decision support tool. (https://en.wikipedia.org/wiki/ACP_Smart_Medicine)

BMJ- Case Reports:

BMJ case reports is an award winning journal that delivers a focused, peer-reviewed, valuable collection of cases in all disciplines of medicine so that healthcare professionals, researchers and others can easily find clinically important information on common and rare conditions. This is the largest single collection of the case reports online with more than 13,500 articles from over 70 countries BMJ- Best Practice: BMJ Best Practice takes user quickly and accurately to the latest evidence based information, whenever and wherever they need it. Provides correct step by step guidance on diagnosis, prognosis, treatment and prevention is updated daily using robust evidence based on the methodology and expert opinion. (http://casereports.bmj.com/site/about/)

LANCET:

The Lancet is a weekly peer-reviewed general medical journal. It is one of the world's oldest and best known general medical journals. The Lancet was founded in 1823 by Thomas Wakley, an English surgeon who named it after the surgical instrument called a lancet, as well as after the architectural term "lancet arch", a window with a sharp pointed arch, to indicate the "light of wisdom" or "to let in light". The Lancet publishes original research articles, review articles ("seminars" and "reviews"), editorials, book reviews, correspondence, as well as news features and case reports. The Lancet has been owned by Elsevier since 1991. As of 2015, the editor-in-
chief is Horton. The journal has editorial offices in London, New York, and Beijing. (http://www.thelancet.com/)

**Elsevier:**
Elsevier is one of the world's major providers of scientific, technical, and medical information, and a technology company originally established in 1880. Its products include journals such as The Lancet and Cell. The Science Direct collection of electronic journals, the Trends and Current Opinion series of journals, and the online citation database Scopus. Elsevier publishes approximately 400,000 articles annually in 2,500 journals. Its archives contain over 13 million documents and 30,000 e-books. Elsevier’s total yearly downloads is amounting to 900 million. (https://www.elsevier.com/about)

**Proquest Medical Library:**
Users in academic libraries can find definitive research information in the Medical Database. This resource is built on abstracts and indexing from the well-known MEDLINE database, plus over 1,400 publications in full text essential to medical research. The collection's international coverage with content dating back to 1980 provides a strong, stable foundation for any library wishing to build and expand its clinical and biomedical journal collection with content that covers all major clinical and healthcare disciplines, including cardiovascular diseases, paediatrics, neurology, respiratory diseases, dentistry, anaesthesiology, and others. The books, magazines, references/reports, scholarly journals, top journals, and trade publications that comprise the collection are provided by over 240 publishers including Massachusetts Medical Society, Elsevier, Springer, Nature Publishing, and Cambridge University Press. (http://mmc.sbm.ac.ir/uploads/109_2164_1448199258584_proquest.pdf)

**Up to Date Clinical Information:**
Up To Date is the premier evidence-based clinical decision support resource, trusted worldwide by healthcare practitioners to help them make the right decisions at the point of care. It is proven to change the way clinicians practice medicine, and is the only resource of its kind associated with improved outcomes. (http://www.uptodate.com/home/uptodate-subscription-options-clinicians)
IDIS Drug Information Database:

The Iowa Drug Information Service (IDIS) database provides access to the serial literature of medicine and pharmacy. Articles from over 180 English-language journals (about one-quarter are published outside the US) concerning human drug therapy, the clinical pharmaceutics of drugs or the economics of drug use are indexed in the database. Authoritative publications have been selected to provide broad coverage of both general and specialty areas of pharmacy and medicine. Clinical studies, case report/series, reports, reviews, trials, letters, editorials, book and software reviews, and some in vitro studies are included. The drug therapy and disease/conditions treated in each article are indexed in detail using controlled vocabularies (over 6700 drug and 2400 disease terms). The drug vocabulary is a numeric hierarchy that allows searching pharmacological drug categories. Frequent revision of indexes ensures access to all index records as drug names and disease names change over time. A thesaurus of drug, disease, and descriptor terms cross-referenced to trade names, synonyms, code designations, inverted names and abbreviations is maintained. (http://linksolver2.ovid.com/site/products/fieldguide/idis/Copyright.jsp)

Online Journals from Publishers:

Elsevier Science:

Elsevier Science and Technology is the world's leading provider and publisher of science, engineering and technology focused e-journal, e-books, databases, indexes, and content, produced by various organizations, researchers, students and professional. Edited volumes and proceedings of refereed international conferences in Engineering and Technology are featured in this series. (http://www.elsevier.co.in/web/default.aspx)

Lippincot J P:

User visits to Open Library for free and open access to millions of books. Open Library is a project of the Internet Archive—a non-profit with a huge mission: to give everyone access to all knowledge, forever, for free. This is a non-profit library built on trust—a special place to learn and explore. Lippincot lends three e-books per
minute and answers almost a thousand of questions per month. (https://openlibrary.org/publishers/J.P._Lippincott)

- **Wiley Blackwell:**

  Wiley-Blackwell is the international scientific, technical, medical, and scholarly publishing business of John Wiley and Sons. It was formed by the merger of John Wiley's Global Scientific, Technical, and Medical business with Blackwell Publishing, after Wiley took over the latter in 2007. Wiley-Blackwell publishes in a diverse range of academic and professional fields, including in biology, medicine, physical sciences, technology, social science, and the humanities. Access to more than 1,500 journals, Online Books, lab protocols, electronic major reference works and other online products published by Wiley-Blackwell is available through Wiley Online Library, which replaced the previous platform, Wiley Interscience, in August 2010. (http://www.wiley.com/wiley-blackwell)

- **Informa Healthcare :**

  Informa plc. has announced Informa Healthcare’s portfolio of 180 journals managed within its academic publishing division, Taylor and Francis Group, as of January 2015. The move follows the transition of Informa Healthcare's books publishing business to CRC Press, a constituent part of Taylor and Francis Group, in 2012. (http://explore.tandfonline.com/page/med/informa-healthcare-Journals)

- **S. Karger:**

  Karger Medical and Scientific Publishers, S. Karger AG) It is an academic publisher of scientific and medical journals and books. The company published works from well-known scientists such as Sigmund Freud. This led to a more international focus and most journal titles were changed from German to Latin and articles were now published in either German, English, French, or Italian. The company currently publishes over 80 journals. (http://www.karger.com/Company/History)
Theime Verlag:

Thieme Medical Publishers is a German medical and science publisher in the Thieme Publishing Group. It produces professional journals, textbooks, atlases, monographs and reference books in both German and English covering a variety of medical specialties, including neurosurgery, orthopaedics, endocrinology, radiology, anatomy, chemistry, otolaryngology, ophthalmology, and audiology. (http://www.thieme.com/)

BMJ:

The BMJ is a weekly peer-reviewed medical journal. It is one of the world's oldest general medical journals. Originally called British Medical Journal, the title was officially shortened to BMJ in 1988, and then changed to The BMJ in 2014. The journal is published by BMJ Group, a wholly owned subsidiary of the British Medical Association.

JAMA:

The Journal of the American Medical Association is a peer-reviewed medical journal published 48 times a year by the American Medical Association. It publishes original research, reviews, and editorials covering all aspects of the biomedical sciences. (http://jamanetwork.com/journals/jama)

Oxford University Press:

Oxford University Press (OUP) is the largest university press in the world, and the second oldest after Cambridge University Press. The university became involved in the print trade around 1480, and grew into a major printer of Bibles, prayer books, and scholarly works. OUP took on the project that became the Oxford English Dictionary in the late 19th century, and expanded to meet the ever-rising costs of the work. As a result, the last hundred years has seen Oxford publish children's books, school text books, music, journals, the World's Classics series, and a best-selling range of English language teaching texts to match its academic and religious titles. By contracting out its printing and binding operations, the modern OUP publishes some 6,000 new titles around the world each year in medicine. (https://global.oup.com/academic/?cc=in&lang=en&)

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The resources in medical sciences useful for the students, teachers and scholars are listed in table 5.3

Table 5.3 Resources in Medical Sciences

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Most Preferred Medical Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DATABASES</td>
</tr>
<tr>
<td>1</td>
<td>Access Medicine</td>
</tr>
<tr>
<td>2</td>
<td>Biological Abstract</td>
</tr>
<tr>
<td>3</td>
<td>Chemical Abstract</td>
</tr>
<tr>
<td>4</td>
<td>CINHAL plus with full text</td>
</tr>
<tr>
<td>5</td>
<td>Clinical Evidence</td>
</tr>
<tr>
<td>6</td>
<td>Clinical Practice</td>
</tr>
<tr>
<td>7</td>
<td>Cochrane Library Online</td>
</tr>
<tr>
<td>8</td>
<td>Current Contents</td>
</tr>
<tr>
<td>9</td>
<td>DynaMed</td>
</tr>
<tr>
<td>10</td>
<td>EBSCO</td>
</tr>
<tr>
<td>11</td>
<td>EMBASE</td>
</tr>
<tr>
<td>12</td>
<td>GOOGLE SCHOLAR</td>
</tr>
<tr>
<td>13</td>
<td>INDEX MEDICUS</td>
</tr>
<tr>
<td>14</td>
<td>International Pharmaceutical Abstracts</td>
</tr>
<tr>
<td>15</td>
<td>JBI Connect</td>
</tr>
<tr>
<td>16</td>
<td>MD consult</td>
</tr>
<tr>
<td>17</td>
<td>MEDLINE</td>
</tr>
<tr>
<td>18</td>
<td>OVIDSP</td>
</tr>
<tr>
<td>19</td>
<td>PsycINFO</td>
</tr>
<tr>
<td>20</td>
<td>PUBMED</td>
</tr>
<tr>
<td>21</td>
<td>SciFinder</td>
</tr>
<tr>
<td>22</td>
<td>SCIRUS</td>
</tr>
<tr>
<td>23</td>
<td>Web of Science</td>
</tr>
</tbody>
</table>
Table 5.3 Resources in Medical Sciences

<table>
<thead>
<tr>
<th>EBM Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>24  ACP Pier</td>
</tr>
<tr>
<td>25  BMJ- Best Practice</td>
</tr>
<tr>
<td>26  BMJ- Case Reports</td>
</tr>
<tr>
<td>27  Elsevier</td>
</tr>
<tr>
<td>28  IDIS Drug Information Database</td>
</tr>
<tr>
<td>29  J-Gate Plus</td>
</tr>
<tr>
<td>30  LANCET</td>
</tr>
<tr>
<td>31  Nursing Reference Centre</td>
</tr>
<tr>
<td>32  Proquest Medical Library</td>
</tr>
<tr>
<td>33  Science Direct</td>
</tr>
<tr>
<td>34  Scopus</td>
</tr>
<tr>
<td>35  Up to Date Clinical Information</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Online Journals from Publishers</th>
</tr>
</thead>
<tbody>
<tr>
<td>36  Annual Reviews</td>
</tr>
<tr>
<td>37  BMJ</td>
</tr>
<tr>
<td>38  Elsevier Science</td>
</tr>
<tr>
<td>39  Informa Healthcare</td>
</tr>
<tr>
<td>40  JAMA</td>
</tr>
<tr>
<td>41  Lippincot JP</td>
</tr>
<tr>
<td>42  Oxford University Press</td>
</tr>
<tr>
<td>43  S. Karger</td>
</tr>
<tr>
<td>44  Springer Link</td>
</tr>
<tr>
<td>45  Theime Verlag</td>
</tr>
<tr>
<td>46  Wiley Blackwell</td>
</tr>
</tbody>
</table>
5.13 Guidelines for Selecting e-Resources

Librarians have to take initiatives in evaluating and selecting e-Resources considering the following:

- Vision and Mission of the institute / organization
- Type of education imparted
- Assessment of user needs and ISB
- Awareness of standard resources in the discipline
- Librarians have to evaluate the e-Resources prior to subscribing and analyzing the utility and availability.
- Acquires electronic resources which have high rank based on usefulness, need of users,
- Librarian has to evaluate reputation of information provider
- e-Resources contain unique information resources
- Evaluating scholarly contents in the e-Resources
- In addition to these points librarians have to consider following criteria for the selection of e-Resources:
  - Contents: Coverage of information in the resources both current and retrospective
  - Value Addition Resources: Resources have ability to make resources available on the campus and accessible to users
  - Accessibility: While evaluating this point librarian has to check, resources have to be server based reliability, providing links to sources, ease in navigation, online help, interactive features, standard output, permanent retention, unique electronic resources to be acquired.
Summary:

The implementation of e--resources is helpful to ensure exhaustive and pinpointed information gathering. The e-Resources provide themselves various search options to the user and library managers. Use of e-Resources, enables the library to save space of library and time of the users. e-Resources are useful for libraries as well as each and every users of the society who are starving to get a variety of information through the globe. Information and Communication Technology made wonderful changes in the library operations. Its advantages are for technocrats, usage of the electronic products improve the knowledge of user. e-Mails and RSS alerts carry the information for the individual to become aware of the user. Enhancement in infrastructure like high speed network, Wi-Fi in the campus, LAN portals at various rights to use points in the campus and also in departments can be prepared to improve the practice of use of e-Resources effectively. It is observed that many resources in electronic and digital forms are available in both the professional courses and librarians need to exploit these resources among the users to make better use by the users.
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