MANAGEMENT OF PHARMACEUTICAL DIGITAL RESOURCES

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ABSTRACT

The unique knowledge base for the profession of pharmacy is the body of drug information that the pharmacists use to define, monitor and modify the drug therapy of the patients that he or she serves. Digital resources offer such possibility and possess advantages over traditional sources with respect to access of information. One of the greatest benefit of digital resources is that, users can access the resources themselves. The focus of this paper is on the management of digital resources. Response to specific questions relating to pharmaceutical practices, the growth of pharmaceutical information and the use of Information Technology for managing digital sources are some of the facets dealt in detail. Pharmaceutical Digital Resources in the form of CD-ROMs and Web sites and their contents are detailed for information and use. Finally, an emphasis has been made for acquiring and familiarising Information Technology related techniques for effective use of pharmaceutical information.

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0. Introduction

The profession of pharmacy, the unique knowledge base is the body of drug information that the pharmacists use to define, monitor, and modify the drug therapy of the patients that he or she serves. Like other categories of scientific information, drug information is always changing. These changes reflect the development of new drugs, new uses for drugs, new interpretations of existing information and include data that are used to establish and advance the practice of pharmacy. The pharmacist must be able to retrieve, analyse and communicate drug and professional practice information, if society is to benefit from the existence of the profession.

The effective management and use of drug information are the most prominent features of any successful pharmacy practice. The collection, analysis, organisation, indexing and hyper linking are some of the pre-requisites for better use of such information.

1. Drug Information

Information would be disseminated to respond to specific questions, assist in the evaluation of drug for use in the hospital or information through newsletters of current development related to drugs. Some of the related drug information services are:

- ? Support for clinical services

Answering questions
Developing criteria/guidelines for drug use.

- ? Pharmacy and Therapeutics Committee activity
  Development of Drug use policies
  Formulary Management
- ? Publications: News letters, Journal Columns
- ? Education: Inservices for health professionals, students, drug usage, evaluation /medication use evaluation.
- ? Investigational drug control
  Institutional review board activities
  Information for practitioners
  Investigational drug protocol management
  Investigational drug record management
- ? Co-Ordination of reporting programmes (e.g., adverse drug reactions)
- ? Poison Information

1.1 Exponential Growth

- Drug literature is vast and complex. The very problem of defining what constitutes the literature is difficult.
- Drug literature is growing rapidly in size. It is also increasingly complex, i.e., interdisciplinary and interprofessional in nature. Thus, drug information sprawls across many professional journals of the most varied types.
- Literature on clinical experience with drug is sizable and growing.
- Competent evaluation of masses of drug information is particularly necessary.

Interestingly, these statements seem applicable even today, when the figures of more than twenty thousand biomedical journals and approximately seventeen thousand new biomedical books published annually are considered.

Management of vast quantities of medical information has challenged the disciplines of pharmacy and medicine besides the concerned Library and Information Centre. Due to the exponential rate at which information is increasing, great challenges are being faced by this profession today. Technology for storage and retrieval of medical information will continue to advance to meet these demands, resulting in greater dependence on electronic/digital information management. Today, medical information is stored on a variety of media i.e.text books, journals, newsletters, microfiche, optical disks and computer systems. Proficiency in strategies for searching this medical information is of vital importance to pharmacists and information professionals striving to meet the demands of pharmaceutical sector.

2 Use of Information Technology

The vastness and complexity of drug literature has lead to information explosion. Managing such a situation involves mechanisation in its management. Thus Information Technology will play a major role in information management. A technologically

advanced version of drug information often denotes the electronic management of drug information. Effective management of time, distance and access to correct information through the networks is the order of the day.

2.1 Internet

The Internet is a world network of networks linked for exchange of information. The core of the network consists of computers joined through high speed connections. Part of this Internet is the World Wide Web, the web or the WWW. The web contains graphics and text documents published on the Internet that are clickable. There are other tools like Gopher, FTP, WAIS, etc for better use of Internet facilities.

As far as Pharmaceutical information is concerned, many organisations, individuals, and other interested groups have digitalised a lot of information related to pharmacy and drugs, and conveniently hosted on Internet. Parallely conventional resources (medium) also carry such kind of information. To achieve speed accuracy and to save time and distance, the information professionals and the concerned users prefer digital resources.

3. Digital Resources

Digital resources include resources created and stored in the hard disk i.e. the bibliographic data base of books, serials, theses and dissertations, current and back volumes of periodicals, audio-visual materials etc., databases on CD-ROMs, optical disks, magnetic tapes besides full text databases. But varied type of information on Internet is really a boon to the needy. Exploiting such digital resources will be of much use to both the needy and the concerned library professionals.

4. Digital Resources and their contents

Some important pharmaceutical digital sources have been traced and studied for their information content.

CD-ROM Databases

1. British Pharmacopoeia on CD-ROM
2. Clinical Pharmacology
3. CDinfo-Drugs
4. Dosing & Therapeutic Tools
5. Drug Information Full-Text
6. Drug Information Full-Text/ IPA
7. EMBASE CD- Drugs&Pharmacology.
8. EMBASED CD -Immunalogy&AIDS
9. EMBASE CD -Pollution and Toxicology
10. EuroPharm-Electronic of Drugs
11. EuroReg Healthcare on CD-ROM
12. Health&Drug Information Library

13. Health Source
14. IDENTIDEX system
15. InPharma Database

A study and analysis of the subject coverage of CD-ROM databases on pharmaceutical subjects (studied about 15 CD-ROM dbs) clearly shows that the "drug information" leads all other subjects. Second largest subject covered is the pharmaceuticals folloed by medicine, biomedicine and health. Toxicology is also well represented in CD-ROM databases. Subjects like AIDS, food sciences, veterinary, pollution, standards, etc are just represented as peripheral subjects to cover subject pharmacy. Mostly all databases are abstracts and index databases and a few of them are full text databases. Some of them are reference guides, product guides and news items. Full text journals also part of some databases.

Internet Sources/Sites

1. Clini Web: Http://www.ohsu.edu/cliniweb/
2. Food Drug Administration: http://vm.cfsan.fda.gov/index.html
3. Healthfinder: http://www.healthfinder.org/
4. HealthGate: http://www.helthgate
5. HealthLinks: http://www.hslib.washington.edu/
6. Healthtough: http://www.healthtouch.com/
7. HyperDoc(NLM) http://www.nih.gov/health/
8. NIH Health Information Page: http://www.nih.gov/health/
9. Medline(NLM): http://www.nlm.nih.gov/databases/freemedl.html.
10. National Institute of Health (NIH): http://www.nih.gov/
11. Medical Journal finder: http://www.mjf.de/MJF/MJF/home.html
12. Pharm Web: http://www.pharmweb.net/
13. Pharm Info Net : http://www.pharminfo.com/pharmin.html
14. Pharmcological Reviews: http://www.phramrev.org/
15. Poisons Information Database: http://vhp.nus.edu.sg/PID/

About 15 INTERNET sites have been studied. All of these are Web sites with hyperlink to important information pertaining to their coverage. Some sites are designed more for news items and chat.

The subjects covered mostly are in order of health, drug information, pharmacy, medicine, AIDS, food and related areas of studies

5 Conclusion

The Information Technology is exploding at an unprecedented rate. The ability to rapidly access large quantities of information has become easier with the introduction of web sites and CD-ROMs. New technologies and resources for locating and management of drug information are likely to become available in the near future.

As pharmacist and information professionals develop a comprehensive knowledge of available resources and the necessary skills to use these resources effectively, pharmacy will continue to more toward its goal as an information based profession. Management of Pharmaceutical Digital resources will become the foremost agenda for the pharmacists and the concerned library professionals in the future.

6. References

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