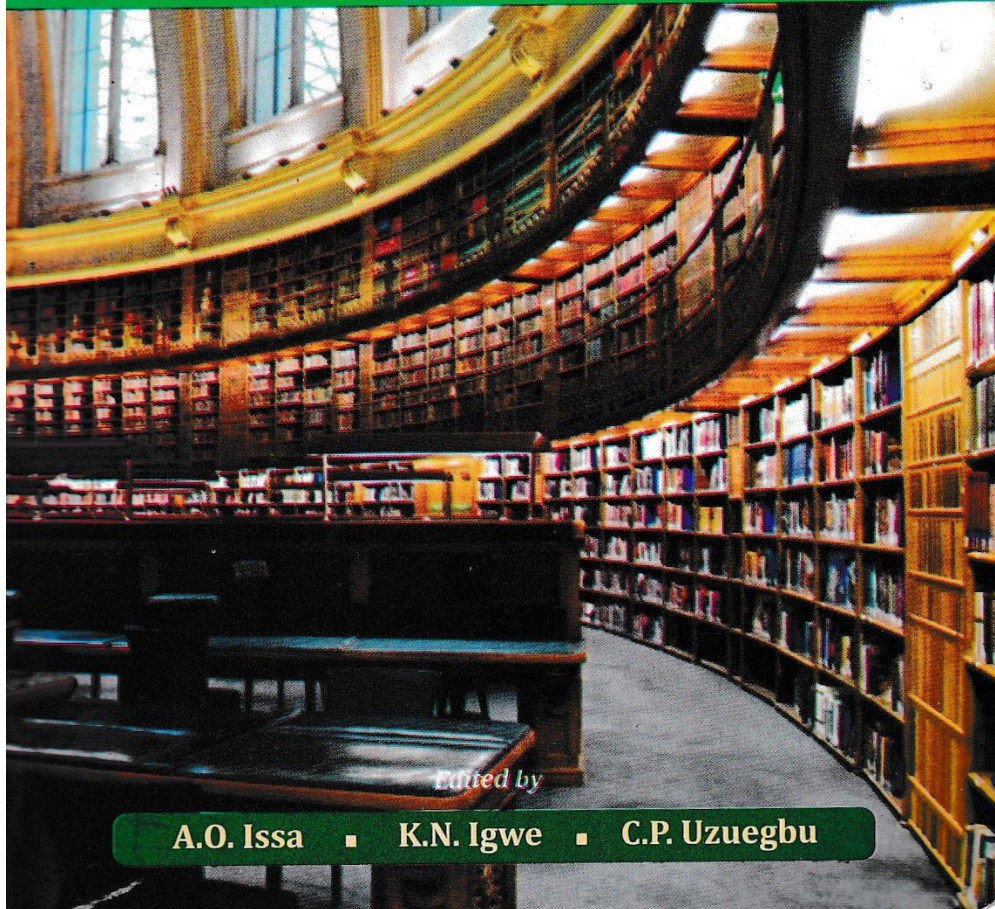


# Provision of Library and Information Services to Users in the Era of Globalisation



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A.O. Issa ■ K.N. Igwe ■ C.P. Uzuegbu

## CHAPTER FOUR

### Provision of Information to Health Professionals: Resources, Sources and Services

By

Ahiaoma IBEGWAM

#### Preamble

Access to health information should be considered as equally important as to access to drugs and equipment. All are essential tools in the delivery of safe, efficient and effective care and/or advice. Therefore, health professionals need health care information to be able to learn to diagnose; and to provide appropriate care, patient education and treatment that saves and improves lives. Health workers have a responsibility to keep themselves informed and up-to-date where adequate relevant and reliable information is available. Where such information is not available, as is the case in many low-resource settings, it is the responsibility of health managers, governments and the international community to make it available. Where it is available it is the business of the information professional to dispense this information to the health professionals. In a situation where all the information cannot be supplied by the content of the health sciences libraries it becomes the business of the health librarians to ensure that the health professional know the sources and services that provide quality health information is provided in a timely fashion to the health care workers. This chapter therefore discussed the information needs, services, resources and sources available for the meeting the health information needs by health professional. The evaluation of electronic information was also examined and conclusions and recommendations made.

#### Introduction

Health professionals in low-income countries such as Nigeria, currently lack access to the health care information they need, especially at the levels of primary and ward care. This according to Cunha, AJLA, Muhe, Qazi, Simoes,



unfamiliar health care problem; update basic knowledge on a topic through review; obtain information from another specialty when dealing with a patient or person with multiple problems; highlight particular patient care concerns to other members of the health care team; find out about a rare or unusual patient care problem; determine whether a knowledge gap exists in the literature and whether a new research project or publication should be planned; or assist in implementing new administrative or organisational initiatives.

### **Types of Information Needed by Health Professionals**

The type of information needed by health professionals is determined by several factors, including the topic or issue in question, the area of specialization of the physician, the knowledge base of the health professional, his or her awareness of information sources, the associated costs of acquiring information, and the purpose for which the information will be used. The starting point for conducting a search for information varies widely among health professionals. A general practitioner is likely to make request information that border on general practice, while a paediatrician will request information on children's' health conditions. Thus, the obstetrics and gynaecologists will be interested in women disease related information while, the emergency room and primary care professionals will probably need information on cases that are brought to their attention which may be the endemic diseases of that locality. Once an information need has been identified, the next step will be to determine who should conduct the information search (Olatunji, Ibegwam and Odugbemi, 2002). In order to take an informed decision regarding who should do the search, certain factors must be taken into consideration. These factors include that the researcher have the ability to conduct a database search (access to the database and the knowledge required to conduct the search); have the time available to conduct the search; and has the ability to determine whether a high value is placed on seeing the data and information available and following leads and data path.

### **Information Specialists Providing Health Information**

Information specialists, public health officials, educators, and students, are more likely to conduct searches themselves, whereas physicians in general or health professionals working in the medical colleges and teaching hospital are most likely to have others conduct a search for them (Northup, Moore-West, Skipper, Teaf (1983). This is especially true of the older generation of lecturer, consultants and professors than it is of the younger lecturers and residents. The ability to meet the information needs of a health care worker largely depend on the information scientists ability to know the how to search, where to search, which database and When to search. Before then, the professional must request information from the appropriate information specialist. The information

managers in the health science centres and libraries also has a duty to ensure that the correct staff is deployed appropriately especially in the readers services departments. Professionals that are trained to provide health information include medical librarians, health record managers, archivists, informationists, clinical librarians, and clinical informationist among several others

All the information specialists are focused on verifying, understanding and meeting the information needs of the health workforce, both to ensure evidence-based health care and to ensure professional job satisfaction, as part of a broader supportive environment that values and motivates the health worker (Ogunyade and Ibegwam, 2011). They ensure the availability of high quality, reliable, relevant and up-to-date evidence at the point of care. They also guarantee the provision of needed information to a healthcare professional that will assist him or her to make informed clinical decisions. Other ways of meeting information needs of health professionals include the provision of training in information skills to the healthcare provider, including retrieval, critical appraisal, and synthesis; and opportunities for personal and group study in the library to support learning from peers, continuing education and professional development.

### **Health Information Services Available to Health Professionals**

The Health Science Library and information Centres provide information resources, services, classes, and tutorials to the health professional. Most health science libraries provide the following services to their clients: Digital Library services, full-text journals and textbooks, health care related databases, evidence-based medicine resources, and other healthcare links, request for articles, books, and videos. Your medical librarian can help you search for the *latest and greatest* literature (Woolf, 1989). Other services provided by the health science librarians are: document delivery; online literature search service -urgent or standard; remote access to electronic journals; alerting services, such as table of contents alerts. Medical libraries feed or customised search updates, under the Selective Dissemination of Information (SDI) and provide training in online searching skills or critical appraisal techniques. Some online tutorials for successfully using resources on the Digital Library are usually given to library users. In addition to these, librarians can customise services to suit individual needs. Online literature searches can be ordered through an e-mail request. Studies have shown that the inexperienced searcher may find only 15% of the total available literature on Medline, compared with the 45% retrieved by the professional searcher. If you wish to sharpen your searching skills, librarians conduct one-on-one, group practice or formal hospital training sessions (Wake Forest School of Medicine, 2013).



The librarian can orient the user on the structure and format. Arrangement can be made for a site visit or have the librarian work with professional during ward round, during practice, in the treatment room or during a lunch breaks in the physician's office. The library client can be proactive in making use of all the services, and tell their librarian what they found useful. This will help at a time when services are evolving. This type of input will ensure the user continues to have what he or she needs, at the point of need. Some quick tips for getting the most from a librarian and the information scientist include: being specific about the type of information one is looking for and the depth of research needed; discussing where the user has already looked; and being prepared to explain ones topic to the information expert.

Services that are often available at a library reference desk include: Asking for assistance or instruction in the use of the library, including location of materials, use of the catalogue, use of computers to access information, and the use of basic reference sources; Seeking assistance in identifying library materials needed to answer a question; Providing brief, factual answers to questions, such as addresses, statistics, phone numbers, etc. that can be quickly located; Requesting a sign-up sheet for reserving computers with Internet access, or word processing software; the ability to place the book 'on hold', which prevents the person who has borrowed it from renewing it. The person who placed the 'hold' is notified when the book has been returned. The ability to request Interlibrary loan of books and other materials from other branch libraries in the same library system, or from a cooperating library anywhere in the world; The opportunity to recommend that the library purchase something for its collection that it doesn't have, which may be needed or of interest to other library users.

The librarians who are staff at the reference desk can usually do the following by virtue of their professional training and experience: the librarian can look up a brief, factual answer to a specific question; the librarian can use the catalogue to find out whether the library owns an item with a particular title or author, or that contains a short story, chapter, song, or poem with a particular title, or to compile a list of books by a particular author or on a particular subject; the librarian can briefly teach the user how to use the catalogue and how to use its advanced features, or recommend the proper subject words or terms that are used in the catalogue for the topic the user has in mind; the librarian can often take the library user directly to the shelves with books on a certain topic without using the catalogue; the librarian is familiar with the contents of hundreds of reference books, and can recommend books that might contain the answer to a particular question; the librarian can teach the library user to use online databases such as magazine and newspaper articles, and recommend words and search strategies for the topic the user has in mind; the librarian can recommend reliable web sites, give advice on searching the Internet for information, and

evaluate the reliability of the information on web sites; if the library doesn't have information on a given topic, or if the library user wants more information, the librarian can refer the library user to another library or to an organisation.

### **Resources Available to Health Professionals**

Information needs are contextual and highly variable in place and time, and according to different health professionals in different clinical circumstances (King, 1987). A variety of approaches is required. Traditional, printed materials such as books, and job aids such as wall-charts and simple printed guidelines, remain important (Kaplan, 1997). These are increasingly complemented by a range of newer media including stand-alone computer technologies, internet resources, wireless technologies and smart phones. Some of the approaches to meeting information needs include:

1. **Print materials:** - Printed materials will include all printed monographs that are available in the medical libraries, faculty libraries, departmental resources' and even the medical records departments (Edwards, 2009). Examples of this type of material include: 'Library in a box': e.g. WHO Blue Trunk Library; ICN Mobile; Book donations: e.g. Book Aid International ([www.bookaid.org](http://www.bookaid.org)); Low-cost books: e.g. Teaching-aids At Low Cost (TALC) ([www.talcuk.org](http://www.talcuk.org)) and Free/low-cost newsletters and periodicals: e.g. Africa Health ([www.africa-health.com](http://www.africa-health.com))

2. **Stand-alone computing:** This group includes information contained in digital storage devices like MEDLINE on CD-ROM, Reference Update, -Provision of computers: e.g. Computer Aid ([www.computeraid.org](http://www.computeraid.org)), CD-ROMs and DVDs: e.g. eTALC ([www.talcuk.org](http://www.talcuk.org)); 'Internet in a box': e.g. eGranary ([www.widernet.org/digitallibrary](http://www.widernet.org/digitallibrary)) and Diagnostic and management software: e.g. Map of Medicine ([www.mapofmedicine.com](http://www.mapofmedicine.com))

3. **Internet-based Computing:** This category of medical information is stored on the web and the internet, Internet gateways: e.g. Essential Health Links ([www.healthnet.org/essential-links](http://www.healthnet.org/essential-links)), Educational and reference materials: e.g. WHO website (over the past 5 years, WHO has made many of its publications free-access) ([www.who.int](http://www.who.int)), Electronic journals: open access journals e.g. BioMed Central ([www.biomedcentral.com](http://www.biomedcentral.com)), partial free-access e.g. BMJ (original research articles), Lancet (all original and secondary, content relating to global health/low-income countries); free/low-cost to registered, institutions in some lower-income countries e.g. HINARI ([www.who.int/hinari](http://www.who.int/hinari)), Discussion groups and social/professional networks: e.g. HIFA2015 ([www.hifa2015.org](http://www.hifa2015.org)), Surgery in Africa ([www.utoronto.ca/ois/SIA.htm](http://www.utoronto.ca/ois/SIA.htm)), Telemedicine: e.g. Réseau en Afrique Francophone pour la Télémédecine, RAFT (<http://raft.hcuge.ch/>)



4. **Mobile phones:** mHealth Alliance ([www.mhealthalliance.org](http://www.mhealthalliance.org))

5. **Mass media:** Television, radio, newspapers (mainly used for health education and information for general public; relatively little used for health worker education) It is vital not only to ensure that health workers have access to health care information, but that they are given appropriate support and training in knowing how to search for, appraise and apply information in practice. Uninformed health care is unsafe health care. Patients and consumers are increasingly demanding the safe, appropriate, effective and informed health care that is their right. Yet many health workers in a wide range of health care settings do not have access to the information they need, when they need it, to learn, to diagnose, and to save lives (Gorman, Ash, Wykoff, 1994).

#### **Factors Affecting Information seeking Behaviour among Health Professionals**

An understanding of the factors influencing information-seeking behaviours among health professionals is critical for the provision and development of future information resources that will best serve the diverse information needs of health professionals. The information needs of health professionals arise from a variety of factors including patient care, patient education, professional curiosity, and research (Marshall, 1992, Osiobe, 1985). Additionally, the rapid advancements in technology and science have expanded the knowledge base in all fields of medicine and health care. When health professionals take decisions on whether to pursue an information query, they must consider and find the middle ground between a number of contradictory factors including the need for the information and the cost implication of locating the information such as the time, effort, and monetary expenses involved in information seeking (Connelly et al., 1990). Huth (1985) analysed information-seeking methods in terms of a utility-cost analysis. In this approach the value of the information resource depends on the utility of the retrieved information (its relevance, thoroughness, and the efficiency with which it is retrieved) as it relates to the costs necessary to obtain the information (including the purchase cost and time and other access costs).

Studies on the information-seeking behaviours of health professionals have found that colleagues and reference books are frequently the information resources that health professionals first turn to with an information query (Ibegwam, 1997; Blackwelder and Dimitroff, 1996). The access costs are minimal, and the relevance and efficiency are usually high. A recent study of nurses, physicians, pharmacists, occupational and physical therapists, and other health professionals found that majority of health professionals would first consult a colleague to answer an information query, a large number of them would first use personal files and reference collections, and the least number of

these professionals would first consult a librarian (Blackwelder and Dimitroff, 1996). Similarly, a 1990 survey revealed that nurses sought information from colleagues and only consulted written sources some of the times. Other resources including the databases were used some of the times (Corcoran-Perry and Graves, 1990).

#### **Factors influencing Information Needs of Health Professionals**

Osheroff et al (1991) developed a typology that assesses the information needs of health professionals, specifically physicians, by analysing the questions posed during clinical teaching and concluded that information needs are driven by the extent of a patient's problem, a patient's inquiry, the professional's knowledge base, and his/her level of awareness of available resources and curiosity to find out more information. Other factors that drive their information needs are:

**Demographics:** Although current health professionals appear to be in a transition phase regarding computer use, the new generation of young health professionals are more computer literate and more reliant on computers for many different kinds of information (Pakenham-Walsh and Bukachi, 2009). Many current medical and nursing students spent their high school and college careers using computers for school and recreation. School libraries at all levels have online library catalogues, and the use of computers in schools has been increasing rapidly. In the next 10 years, there will be a dramatic shift in student computer expertise, in computer familiarity, and in the assumption on the part of students that information is more easily located online than in reference books. This changing dynamic will have a significant impact on computer utilisation skills and on the extent of online database searching. This is true of the developed world as it is becoming true of the developing world.

**Work/Practice Setting:** The work environment or practice setting also affects the information-seeking behaviours of health professionals. There are wide variations between work settings in the opportunities that health professionals have to access online databases and computer networking capabilities. Health professionals in smaller work environments or practice settings (e.g., clinics and private practices) tend to rely more heavily on informal sources, such as colleagues, and limited formal sources, including textbooks and handbooks (Dalrymple, 1990). Although health professionals working in academic settings or in larger clinics and hospitals associated with medical schools or research institutions still refer to textbooks and colleagues frequently, they are more likely to have access to health science libraries and extensive computer networks (Dalrymple, 1990; Gruppen, 1990; Osiobe, 1985). As computers continue to become more commonplace in all health care settings, access to online resources will no longer be an issue of concern.



**Time Sensitivity and Level of Detail:** The time sensitivity factor, or how quickly an answer is required, is closely correlated to the level of detail needed and the type of information resource consulted. Owing to time constraints, health professionals working in patient care require information resources that are readily accessible so information can be efficiently retrieved (e.g., colleagues, textbooks, and handbooks). These health professionals often need a summary of known information (e.g. summary information on a specific chemical and its effects) that accurately answers their questions (Cohen et al., 1982; Northup et al., 1983; Osiobe, 1985). This is particularly true in emergency care situations. When an emergency room physician encounters a patient who has swallowed a household cleaning product, that physician needs immediate factual data (i.e. What product was swallowed? What are the harmful ingredients in that product?) and detailed treatment management information.

On the other hand, health professionals involved in research, policy development, and other activities that allow for a greater length of time to be devoted to locating information will frequently require comprehensive retrieval, an exhaustive search of the literature, and the use of in-depth sources of information (Cohen et al., 1982; Northup et al., 1983; Osiobe, 1985; Wallingford et al., 1990). Additionally, they are most likely not to want summarized information but rather are searching for original data from which they can draw their own conclusions or hypotheses. For example, a study of physicians' use of medical information resources found that 73 percent of the respondents indicated a willingness to spend between 10 and 30 minutes on computer searches (Woolf and Benson, 1989). However, most of these physicians indicated that they would devote this amount of time to conducting research, but not to making clinical decisions. Online databases can serve both the acute and long-term information needs of health professionals if systems are designed with those factors in mind.

**Cost:** In addition to the expenditure of the health professional's time involved in locating information, the financial costs of online searching may be a factor in determining what sources of information are consulted (Curley et al., 1990; Dalrymple, 1990). Since online charges generally are determined both by the amount of time spent online (the per-minute connect time) and by the amount of information retrieved online, knowledge of the database and expertise in developing relevant search strategies relate directly to the final costs. Because online costs are difficult to determine ahead of time, health professionals may prefer to use CD-ROM resources, which allow for unlimited searching for fixed costs. The extent to which search costs affect searching of online databases as well as potential strategies to simplify pricing structures (thereby providing the user with cost estimates at the outset of the search) need to be considered in future studies.

**Accessibility and Relevance:** Ease of access and the relevance of the data retrieved are important considerations when seeking information and solutions to diagnostic and treatment problems. The use of textbooks and journals is easy and convenient for most practitioners. Furthermore, discussing a case with a trusted colleague, particularly one who has examined a similar case, may provide more relevance to the situation at hand. These are traditional methods of obtaining information, particularly among many current physicians who were not trained in the use of online resources and who are not aware of the benefits of online searching. Searching a computer database usually results in more extensive amounts of information, if not always completely relevant information, and substantial benefits to the patients. Several studies have demonstrated the benefits of online literature searching to the patients when health professionals have consulted online databases for additional or the most up-to-date information on diagnosis, treatment, and prevention (Haynes et al., 1990; King, 1987; Marshall, 1992). The retrieved information affected patient care in a positive way by changing the way in which a case was handled, contributing to a better-informed clinical decision, or resulting in higher-quality patient care. In 1994, Klein and colleagues examined the association between the use of MEDLINE searches by health care professionals and economic indicators of hospital costs, charges, and length of stay for inpatients. For the patients whose health professionals used MEDLINE and conducted literature searches early in the patients' stay, costs and lengths of stay were significantly lower than those for patients whose health professionals conducted searches later or not at all (Klein et al., 1994).

**Sources of Health Information:** There are several sources of health information (DAB, Siegel, Rapp, Wallingford & Wilson, 1993). These sources include: Health care officials such as doctors, nurses, and dentists; Government health resources such as the centres for disease control and prevention; The National Institutes of Health (NIH), and the World Health Organisation (WHO); Health related organisations, American Red Cross, American Cancer Society, and American Heart Organisation. In Nigeria, it will include the Federal Ministry of Health and other health parastatals like the National Agency for Food and Drug Administration and Control (NAFDAC); Educational organisations, such as colleges and universities; Library resources, such as health and medical journals. There are also free accesses to the following databases among many others on the Internet: MEDLINE, Health STAR, AISLINE, HISTLINE, HSRPROJ, SDILINE, TOXLIT & CANCERLIT.

### **Challenges in the Provision of Health Information**

There are several challenges that information scientists face in the provision of information to the health practitioners. There are those that arise as a result of inadequate resources, untrained human resources, Infrastructural



problems including power outages. In addition to these, there are those that arise as a result of health professionals not being aware of the benefits of the information resources. Sometimes they are unaware of the health care trends such as the use of evidence-based medicine approaches that emphasize incorporating the biomedical literature into clinical decision making may provide an impetus for increased searching of bibliographic databases.

A number of studies have shown that owing to a host of factors, including lack of awareness, access, training, and time, many health professionals have not developed effective and efficient information-seeking habits that expand beyond colleagues and textbooks (Covell et al., 1985; Haynes et al., 1990; Williamson et al., 1989; Woolf and Benson, 1989).

### **Evaluating Sources of Health Information**

Kaplan (1997) stated that until recently, the discussion of evaluation had focused on the information technology itself or on the individuals who use or are affected by the technology. Evaluation from a technology perspective considers hardware, software, telecommunications technology, and databases. Evaluation from a people perspective focuses on training, personnel, attitudes of personnel, ergonomics, and regulations affecting employment. It also is important to consider the nature of the work individuals do and the tasks they perform (Friedman, Jeremy and Wyatt, 1997). Designers and evaluators increasingly are recognizing that compatibility of an information resource with work practices is an important concern, and some new methodologies are premised on the assumption that design must be based on work routines (Klein, Ross, Adams, Gilbert (1994); Lockyer, Parboosingh, McDougal, Chugh (1985); Maizell (1967); Marilyn Hockenberry, David Wilson, Patrick Barrera (2006). The recent surge in online health information and consumer use of such information has led to expert speculations and prescriptions about the credibility of health information on the World Wide Web. In spite of the growing concern over online health information sources, existing research reveals a gap in the realm of consumer evaluations of trustworthiness of different health information sources on the Internet (Mohan Dutta-Bergman, and Mohan Dutta-Bergman).

NIH (2013) recommended that the researcher should first, consider the source. If you use the Web, look for an "about us" page. Check to see who runs the site: Is it a branch of the government, a university, a health organisation, a hospital or a business? Focus on quality. Does the site have an editorial board? Is the information reviewed before it is posted? Be sceptical. Things that sound too good to be true often are. You want current, unbiased information based on research. The Federal Trade Commission (2013) posited that the online sources of health information should make it easy for people to learn who is responsible for posting information, the original source of the information that is posted, and the medical credentials of people who prepare or review the material that is

posted. More resources are listed below. In addition, the following information must be answered by the searcher:

#### **1. Who manages this information?**

The person or group that has published health information online should be identified somewhere.

#### **2. Who is paying for the project, and what is their purpose?**

You should be able to find this in the "About Us" section.

#### **3. What is the original source of the information that they have posted?**

If the information was originally published in a research journal or a book, they should say which so that you can find it.

#### **4. How is information reviewed before it gets posted?**

Most health information publications have someone with medical or research credentials (e.g., someone who has earned an MD, DO, or PhD) review the information before it gets posted, to make sure it is correct.

#### **5. How current is the information?**

Online health information sources should show you when the information was posted or last reviewed.

#### **6. If they are asking for personal information, how will they use that information and how will they protect your privacy?**

This is very important. Do not share personal information until you understand the policies under which it will be used and you are comfortable with any risk involved in sharing your information online. NIH (2013) have posted and recommended the following sources that available on their website online for tutorials that will assist the researchers examine any website for its content and quality value. These include: Evaluating Internet Health Information: A Tutorial from the National Library of Medicine; Health Information on the Web: Finding Reliable Information (American Academy of Family Physicians). Also available in Spanish, MedlinePlus Guide to Healthy Web Surfing the National Library of Medicine.

### **Conclusions and Recommendation**

This chapter has discussed the information resources, sources and services needed for meeting the health information needs of health professionals. It highlighted the Information needs of health professionals, health Information Services available to health professionals, sources and resources. Printed and computerised health science information sources as well as the web based services, resources and sources were discussed. The Challenges of the providing of health information to the health professionals were also elucidated. Finally methods used in the evaluation of information in order to ensure that only quality and authentic information are sourced were also



discussed. It is recommended that health professionals make constant use of health information which are available in print, digital format and on the internet via the world wide web for patient care, continuous education, and life- learning. Where the professional lacks the competence to perform expert search, they should consult the librarians and other information professionals. In the same vein, the information scientist should have a regular programmememememe that ensures that staff and students are given regular training on how to search and evaluate information from the internet, even if it means taking the training to the offices, and wards of the health professionals. The implication for the librarian is that he or she must update their knowledge regularly in order to keep up with the development in Information Communication Technology.

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