3.0 Introduction

User studies are basically designed to ascertain the information needs, information use and information seeking behavior of the users of the system. It is assumed that the main objective of most user studies is to obtain data that is capable of accumulation and synthesis which can be used, directly or indirectly, to develop or improve information services and system. User surveys are undertaken to assess users, their characteristics and information seeking patterns. User studies therefore aim to improve science communication system, performance of existing information services and its impact on the research activities. According to Ennis (1) user survey falls into four categories (a) General audience use inside the Library, (b) Special audience use inside the Library, (c) Readership survey as to the needs of what book, what journal etc., (d) Communication patterns and information needs of different types of specialists.

The first know empirical studies on the needs and uses of information were reported by Bernal and Urquhart at the Royal Society’s International Scientific Information conference held in London in 1948. These studies are regarded as the beginning of the research on user communication behavior.

On reviewing the literature, one can see there are three major reviews of user studies (Menzel) (2) Paisley (3), Bates (4). These review cover user studies in the natural and social sciences. Each study considered to be excellent summary of the states of the art in the field. According to Menzel (2) Information need/demand studies which include opinions, evaluations, requests for information and experiments on the impact of a service. Information use studies include relative contribution of communication channels and critical incidents studies, user interaction with dissemination systems, and studies of the flow of information at the scientific meeting.

3.1 Need for Online Information Search

Online Information need is a difficult concept to define and measures. It involves a cognitive process which may operate at different levels of consciousness. Defining “need” is an important part of the creative process. An information demand expressed in relation to a particular purpose, to be used within a particular
environment is more easily defined. Several doubts have been expressed about the ability of the users to express the needs as opposed to information requirements.

The most significant contributions of online searching are related to our understanding of information retrieval itself. Studies of online searching have led to the identification and specification of specific information retrieval patterns, strategies, search tactics and illustrated the importance of underlying data structure, retrieval engines, interfaces and user training for electronic systems. The online version of the database covers more journals than the printed version and about 65% of all the citations include abstracts. Electronic systems may also provide instruction and help for users. For example the MEDLINE database, a bibliographic collection for the medical literature, is analogous to the printed Index Medicus, electronic indexes may contain more information than their printed counterparts.

1. Asefeh .A (2005) (5) An attempt has been made to determine the present status of familiarity and use of Digital resources. It was felt that use of digital resources is still poor the medical students of the Universities in the developing countries. The paper presents survey to investigate the familiarity and use of digital resources by students online and offline information Databases of the Central Library.

2. Wilkins (2005) (6) Many physicians access electronic databases to obtain up-to-date and reliable medical information. In North America, physicians typically use MEDLINE as their sole electronic database whereas in Europe, physicians typically use EMBASE. While MEDLINE and EMBASE are similar, their coverage of the published literature differs. Searching a single literature database (eg, MEDLINE or EMBASE) has been shown not to yield all available citations and using two or more databases yields a greater percentage of these available citations. This difference has been demonstrated in a variety of disciplines and in family medicine using the term “family medicine,” but differences have not been shown using specific diagnostic terms common in family medicine. We sought to determine whether searching EMBASE with terms for common family medicine diagnosis yields additional references beyond those found by using MEDLINE alone.
3. **De Groote (2003)** research sought to determine use of online biomedical journals and databases and to assess current user characteristics associated with the use of online resources in an academic health. Users prefer online resources to print and many choose to access these online resources remotely. Convenience and full-text availability appear to play roles in selecting online resources. The findings of this study suggest that databases without links to full text and online journal collections without links from bibliographic databases will have lower use. These findings have implications for collection development, promotion of library resources and end-user training.

4. **Delgado, M (2001)** The discovery of new knowledge by mining medical databases is crucial in order to make an effective use of stored data, enhancing patient management tasks. One of the main objectives of data mining methods is to provide a clear and understandable description of patterns held in data. We introduce a new approach to find association rules among quantitative values in relational databases. The semantics of such rules are improved by introducing imprecise terms in both the antecedent and the consequent, as these terms are the most commonly used in human conversation and reasoning. The terms are modeled by means of fuzzy sets defined in the appropriate domains. However, the mining task is performed on the precise data. These 'fuzzy association rules' were found to be more informative than rules relating precise values.

### 3.2 Knowledge about awareness and usage of Online Medical Databases

1. **Ya-Wen, C. (2009)** Physicians have to deal with a broad range of medical problems in clinical practice, thus making the timely acquisition of relevant information is a critical skill for physicians to improve care quality. The current national study investigates how physicians search for medical information and analyses how they use online medical databases. A structured questionnaire survey was conducted, with 457 valid returns collected. Internet-based resources (Web portals, online databases and electronic journals) were more often accessed by physicians to look for medical information than personal or paper ones.
Almost universally physicians have accessed online databases. MEDLINE was the most frequently accessed database. Furthermore, physicians under 50 years old tended to access online databases more often than their elder colleagues. In addition, physicians with faculty position were more often accessing online databases other factors including clinical experience, administrative position, gender, academic degree and professional specialty carried no significant differences. These data may assist in determining how to promote the use of online evidence-based medical information for clinical services. Adapted from the source document.

2. Rezaei, S. (2009) (10) One of the most important factors challenging the issue of "information storage and retrieval" in the Internet environment is the lack of control on authorities, i.e. subject authority control. The present research aims at examining the feasibility of subject authority control of Persian medical databases available on the Net. Based on research methodology, we have randomly chosen 50 keywords utilized by users searching databases for articles. In the pre-test stage, these keywords were searched through Iranmedex, a database for Persian medical articles. Comparing them with Persian medical thesaurus, those keywords exactly matched to the thesaurus words were entered in a designed database using Microsoft Access software. Then, we entered these authorized keywords in Iranmedex. Findings of new search sessions revealed that control of authorities on the one hand, makes information retrieval more precise and accurate and on the other prevents false drops. The research findings can be used for modifying the process of information storage and retrieval on the Internet. The research concludes with a model for applying thesauruses as authority control tools for other databases available on Internet.

3. Upadhyay, N. and Chakraborty, H.K. (2008) (11) Remote access to online catalogues and bibliographic databases has altered Library user patterns over the past decade. Library statistics shows fewer patrons entering the library as more resources become available online and patrons have given access form their desktops. This paper describes the use of online journal and databases and their awareness among researchers of IT-BHU. In this case study, a survey was
conducted using questionnaire, to collect the data. This paper examines the researcher’s awareness and use of online journals and databases available through UGC-Infonet, INDEST and University Library; finally it highlights the suggestions given by the users for improvement of online resources.

4. Dadzie, P.S. (2005) (12) observes that sets out to investigate the use of electronic resources by students and faculty of Ashesi University, Ghana, in order to determine the level of use, the type of information accessed and the effectiveness of the library's communication tools for information research. Design/methodology/approach: A questionnaire-based survey was utilized. It consisted of 16 questions to determine level of use, type of information accessed, assessment of library's communication tools, problems encountered when using electronic resources and ways to improve the provision of electronic information in the community. The questionnaire was distributed to all students, faculty and administrative staff in order to reduce the generalization of the results. The students were made up of four year groups categorized as Year Group A, Year Group B, Year Group C, Year Group D. The questionnaire was pre-tested on six students from three different year groups and some amendments were made. A total of 169 questionnaires were therefore distributed and 141 completed questionnaires were returned, giving an overall response rate of 83 per cent. Survey responses were coded and input into Excel for analysis. Findings: The study found that general computer usage for information access was high because of the University’s state-of-the-art IT infrastructure. Usages of some internet resources were also very high, whilst the use of scholarly databases was quite low. The low patronage was attributed to inadequate information about the existence of these library resources. The study recommends, among others, the introduction of information competency across the curriculum and/or the introduction of a one-unit course to be taught at all levels and the provision of more PCs on campus. Originality/value: Would be of value to library administrators considering how to determine level of use, type of information accessed, assessment of library's communication tools, problems encountered when using electronic resources and ways to improve the provision of electronic information.
5. **Bergeron, B (2003)** (13) Gone are the days when a single, spiral-bound reference book on internal medicine -- much less relying on memory of past patient visits -- is sufficient to answer every clinical question likely to be encountered on the wards or in a walk-in clinic. Furthermore, in today's time-pressured work environment, there often isn't time for a clinician to walk to her office library to look up a disease differential or review the genetics of a particular disease. The patient's medical record, the hospital formulary, the latest research on the proper therapy for a rare condition, and notices from the Centers for Disease Control and Prevention (CDC) or other national health organization are ideally at a clinician's fingertips at all times. A wireless personal digital assistant (PDA), tablet personal computer (tablet PC), or desktop computer can provide access to these and other data, assuming that the data are maintained in readily accessible electronic databases. This article continues with the theme of pervasive computing -- the anytime, anywhere access to clinical computing power and data -- introduced in is on the major online medical databases that can be used to support clinical decision making.

### 3.3 Problems of usage of Online Medical Databases

1. **Kelly, L. (2008)** (14) Searching by MeSH terms often produces very different information from that found when searching by text word. A unique term, such as *Ojibway*, is best found with a text word search. A more general term, such as *Aborigines*, is best searched by subject using a MeSH term. Many databases can be searched through Ovid and might all use different MeSH terms for the same reference. PubMed default searches that use MeSH terms and text words simultaneously often produce very large numbers of articles. In searching for *North American aboriginal* using MeSH terms, MEDLINE and PubMed produced the most references, followed by Healthstar. Calculating distinct “all aboriginal” references in EMBASE, Healthstar, and PsycINFO indicated that MEDLINE produced nearly all the articles found in Healthstar. In fact, MEDLINE alone produced 88% of the articles found in MEDLINE and EMBASE and 79% of the articles found in MEDLINE and PsycINFO.
3.4 Integration of Databases to access Online Medical Databases

1. Drakos, J. (2008) (15) The integration of biomedical information has become an essential task for health care professionals. Current progress in the domain of Information Technology allows for huge data storages and powerful computational possibilities to be affordable; thus, they have been quite common. Researchers are gradually becoming aware of the importance of keeping together diverse data pertaining to a specific medical entity and successful attempts to create and maintain such databases are becoming known to the scientific community. Data models specified by standards are often included in databases, without taking into account inherent limitation posed by the procedure of acquiring original data. It is therefore quite often that inference is affected by errors that propagate throughout the entire process, from data acquisition through processing and analysis. While data models are adequate for their initial usage, they are inflexible to the requirements posed by new analysis procedures that become available as data are massively aggregated from diverse origins. Often, they include data reduction steps, narrowing the scope of future analyses. Having the data in their raw form, however, would offer the opportunity of reanalyzing the data as new, unpredicted at the time of acquisition, hypotheses are put under test.

2. Hammond, R (2001) (16) Discusses the problems of searching medical databases whose content is similar, but which are indexed with different controlled vocabularies. To retrieve documents from databases like Medline, Embase and Biosis, the user must be familiar with the highly specialized controlled vocabulary which was used to index each record. Describes a technology to enable searching across medical databases. Smartlogik is developing a suite of software tools to automatically create ‘digests’ of each index term in each controlled vocabulary. These digests are lists of ‘SignPost’ terms. Generating SignPost terms makes it possible to go beyond the simple search for a synonym, which other databases rely on. Maintains that Sign Post terms are preferable to
super thesauri because the latter take the understanding away from the user, and are going to be expensive, slow and difficult to maintain accurately.

3.5 Online Searching of Medical Databases

1. **Chen, D (2005)** (17) With the rapid growth of online publications such as the Medline and other sources raises the questions how to get the relevant information efficiently. It is important, for bench scientist, e.g., to monitor related publications constantly. It is also important, for a clinician, e.g., to access the patient records anywhere and anytime. Although time-consuming, this kind of searching procedure is usually similar and simple. Likely, it involves a search engine and a visualization interface. Different words or combination reflects different research topics. The objective of this study is to automate this tedious procedure by recording those words/terms in a database and online sources, and use the information for an automated search and retrieval. The retrieved information will be available anytime and anywhere through a secure web server.

2. **McGowan, J and Sampso, M (2005)** (18) Variations in Medical Subject Headings (MeSH) mapping: from the natural language of patron terms to the controlled vocabulary of mapped lists This study compared the mapping of natural language patron terms to the Medical Subject Headings (MeSH) across six MeSH interfaces for the MEDLINE database. Search request statements were parsed into separate terms or phrases. Using print sources from the National Library of Medicine, Each parsed patron term was assigned corresponding MeSH terms. Each patron term was entered into each of the selected interfaces to determine how effectively they mapped to MeSH. Data were collected for mapping success, accessibility of MeSH term within mapped list, and total number of MeSH choices within each list.

3. **Laura, S and Spyridakis, J. H (2004)** (19) A study was undertaken to examine the effect of frequency of headings, used in Web sites devoted to online medical databases, on the comprehension of online medical information with participants drawn from two different populations: one with a vested interest in obtaining
medical information; and one with a more neutral relationship to obtaining medical information. Reports that moderately frequent headings led to higher comprehension for one sample and to beliefs about more new knowledge gained to the other sample. Differential Scanning Calorimetry (DSC) role of content familiarity in comprehension.

4. Hareley, J and Kostoff, R.N. (2003) (20) consider the generation, use and value of key words in research articles designed to help readers, writers, indexers and abstractors locate related information, and we also present some suggestions for the future practice.

3.6 Online Search Strategies of Medical Databases

1. Margaret J. Anderson, (2009) (21) The Cochrane Handbook for Systematic Reviews of Interventions provides instructions for documenting a systematic review’s electronic database search strategy, listing elements that should be in the description. Complete documentation of the search strategy allows readers to evaluate the search when critically appraising a review’s quality. DOI: 10.3163/1536-5050.97.1.004

2. Siddharth S. (2009) (22) With the large number of urological journals now indexed in online search engines, just reading a few journals will not keep urologists up to date on the latest developments. This paper proposes search strategies to quicken the search and retrieval of the required literature, so that the best evidence may be used to guide practice. This survey of optimal strategies begins with framing the inquiry so the search engine returns results within an accurate scope. The researcher must also isolate the type of evidence appropriate for the scenario and determine its validity. Finally, regardless of the extent of their institutions subscriptions, researchers should be able to attain the complete document. Besides search strategies, this article extensively reviews sources of information valuable to urologists, including databases and web links. DOI: 10.4103/0970-1591.52936
3. **Eady, A.M (2008)** (23) Clinicians increasingly use online access to evidence in the course of clinical care as well as for continuing education and research. In addition, online searching is crucial for systematic reviewers who strive to find all available clinical studies that address their research question. However, information retrieval in electronic databases is often difficult and time-consuming. Relevant articles are scattered across a broad array of journals; the concentration of high quality, relevant studies in a large database is dilute; the indexing in any large bibliographic database is limited; and databases contain many studies that are preliminary and not ready for clinical application. Added to these obstacles is the frequent lack of search skills. Researchers have developed search strategies to assist clinicians and researchers with searching. Most of these strategies have been developed to find therapy and review articles in MEDLINE. Some strategies for PsycINFO have also been developed and tested for specific interventions and study types (i.e., to find outcome studies of group psychotherapy and randomized controlled trials of cognitive therapy for depression, but these strategies are based on few journals and few target articles.

4. **LaPelle, N.R (2006)** (24) Movement towards evidence-based practices in many fields suggests that public health (PH) challenges may be better addressed if credible information about health risks and effective PH practices is readily available. However, research has shown that many PH information needs are unmet. In addition to reviewing relevant literature, this study performed a two representative PH groups, focusing on identifying current practices expressed information needs, and ideal systems for information access.

5. **Lorence, D.P. and Park, H. (2006)** (25) States that is growing evidence of the use of the Internet to obtain critical health information as well as increased diversity of user groups. While users of web-based information often report their reliance on healthcare providers for validation of information, it has yet to be determined if this is universally true across all types of information or user groups. In some cases consumers may aggregate in places where they trust web information (relative to provider-based information), such as areas of unsettled diagnostic methods or ambiguous treatment protocols. To date little research has been done
to identify and differentiate clusters of health consumers and their similarities related to type of information sought. Data from a study of consumer Web search activity in a post-intervention era serves as a natural experiment, and can identify whether clusters of "digitally underserved groups" persist in the US, following national efforts to eliminate barriers to health information access. This exploratory technology assessment study seeks to differentiate and delineate specific information behaviors, across targeted healthcare subgroups. Doing so allows the design of more effective strategies to promote the use of the Web as a health education and health promotion tool, under the envisioned shared decision making, consumer-centric health information model, critical to the proposed US national health information infrastructure.

6. **Haynes, R.B. (2005)** (26) Evaluating the existence and strength of an association between a putative cause and adverse clinical outcome is complex and best done by assessing all available evidence. With the increasing burden of chronic disease, greater time demands on health professionals, and the explosion of information, effective retrieval of best evidence has become both more important and more difficult. Optimal search retrieval can be hampered by a number of obstacles, especially poor search strategies, but using empirically tested methodological search filters can enhance the accuracy of searches for sound evidence concerning etiology. Although such filters have previously been developed for studies of relevance to causation in MEDLINE, no empirically tested search strategy exists for EMBASE.

7. **Bonnie, D. (2005)** (48) Strategic approaches to online searching strategies are increasingly being dictated by the growing mass of information filling the World Wide Web, making searches of medical databases and other Web based medical information sources increasingly difficult. Offers useful advice to searchers on how to develop strategic searches by: starting with written questions and search strategy; using different search engines for different objectives; finding information that cannot be found on publicly accessible Web pages; knowing the high quality resources; starting the searches as narrow as possible; and reviewing the basic search engine commands and search language. Presents
seven useful searching tips from medical librarians experienced in such searches. Concludes with notes on typical search engine features for common search engines.

3.7 Search Technique and Hints in Online Medical Databases

1. DeShazo, J.P. (2009) (28) The purpose of this study is to identify publication output and research areas as well as descriptively and quantitatively characterize the field of medical informatics through publication trend analysis over a twenty year period (1987–2006). Medical informatics has been emerging as a discipline over the past quarter century, along with the evolving, successive formal definitions that have been put forth, each one building on the previous. The term "Medical Informatics" was introduced as a MeSH term in 1987. Previously known as "Information Systems", "Medical Informatics" is defined in MEDLINE as "The field of information science concerned with the analysis and dissemination of medical data through the application of computers to various aspects of health care and medicine." Methods: A bibliometric analysis of medical informatics citations indexed in Medline was performed using publication trends, journal frequency, impact factors, MeSH term frequencies and characteristics of citations. There is a steadily growing presence and increasing visibility of medical informatics literature over the years. Patterns in research output that seem to characterize the historic trends and current components of the field of medical informatics suggest it may be a maturing discipline and highlight specific journals in which the medical informatics literature appears most frequently, including general medical journals as well as informatics-specific journals.
2. **Galpern, N.F and Albert, K.M. (2007)** (29) Among the huge maze of resources available on the Internet, UnCoverWeb stands out as a valuable tool for medical libraries. This up-to-date, free-access, multidisciplinary database of periodical references is searched through an easy-to-learn graphical user interface that is a welcome improvement over the telnet version. This article reviews the basic and advanced search techniques for UnCoverWeb, as well as providing information on the document delivery functions and table of contents alerting service called Reveal. UnCover's currency is evaluated and compared with other current awareness resources. System deficiencies are discussed, with the conclusion that although UnCoverWeb lacks the sophisticated features of many commercial database search services, it is nonetheless a useful addition to the repertoire of information sources available in a library.

3. **Sood and Ghosh (2006)** (30) Observe that efficient literature search is essential to the practice of Evidence-Based Medicine. PubMed provides free access to one of the largest searchable biomedical databases. Efficient literature search using PubMed requires a good understanding of the available search strategies and tools. In this article we present a step-by-step approach for performing literature search using PubMed. Several PubMed tools including 'Single Citation Matcher', 'Clinical Queries', 'Clipboard', 'Field Tags', and 'Cubby' are highlighted using case based scenarios.

4. **Wood, E.H. (2006)** (31) Reports that bibliographic database MEDLINE, produced by the National Library of Medicine (NLM), is a computerized index to the world's biomedical literature. The database can be searched back to 1966 and contains 6.8 million records. The various means of access are divided, for the purposes of this article, into three categories: logging onto a remote host computer by telephone and modem or by the Internet; subscribing to part or all of the database on compact disc (CD-ROM); and leasing the data on a transport medium such as magnetic tape or CDs for loading on a local host computer. Decisions about which method is preferable in a given situation depend on cost, availability of hardware and software, local expertise, and the size of the intended user population. Trends include increased access to the Internet by health
professionals, increased network speed, links from MEDLINE records to full-text databases or online journals, and integration of MEDLINE into wider health information systems.

3.8 Evaluation of Online Searching

1. Rosenbaum, S.E. (2008) (32) The value of evidence-based medicine (EBM) – using updated, relevant and trustworthy evidence to inform medical decisions is widely acknowledged [1]. Recently the British Medical Journal nominated EBM as one of the 15 most important milestones in medicine since 1840 [2]. Easy access to high quality research has the potential to improve patient care, but there are obstacles that face health professionals attempting to use evidence in their practice. In an Australian survey, physicians identified insufficient time (74%), limited search skills (41%) and limited access to evidence (43%) as impediments to making better use of research data.

2. Smith, C.A. (2005) (33) The evolution of the electronic age has led to the development of numerous medical databases on the World Wide Web, offering search facilities on a particular subject and the ability to perform citation analysis. We compared the content coverage and practical utility of PubMed, Scopus, Web of Science, and Google Scholar. The official Web pages of the databases were used to extract information on the range of journals covered, search facilities and restrictions, and update frequency. We used the example of a keyword search to evaluate the usefulness of these databases in biomedical information retrieval and a specific published article to evaluate their utility in performing citation analysis. All databases were practical in use and offered numerous search facilities. PubMed and Google Scholar are accessed for free. The keyword search with PubMed offers optimal update frequency and includes online early articles; other databases can rate articles by number of citations, as an index of importance. For citation analysis, Scopus offers about 20% more coverage than Web of Science, whereas Google Scholar offers results of inconsistent accuracy. PubMed remains an optimal tool in biomedical electronic research. Scopus covers a wider journal range, of help both in keyword searching and citation analysis, but it is currently
limited to recent articles (published after 1995) compared with Web of Science. Google Scholar, as for the Web in general, can help in the retrieval of even the most obscure information but its use is marred by inadequate, less often updated, citation information.

3. Webster, R. and Williams, P. (2005) (34) Observe that to judge the quality of health information provided to the users of the NHS Direct online enquiry service. Design/methodology/approach: An examination of available online tools was necessary to enable the development of a quality framework appropriate for the study. The checklist developed from this process provided a method of judging a specific web site's quality level. Readability levels of web sites were measured using the Flesch-Kincaid scale. Two case studies were conducted to examine consistency of responses and in order to measure user satisfaction questionnaires were distributed. Findings: Results from the checklist indicated that the majority of health information sent on to users of the service was of adequate or excellent quality. The readability levels of information promoted by the NHS Direct Online enquiry service are at levels higher than is recommended in the literature. The case studies implied that the criteria used by the NHS in composing responses to enquiries is not always consistent and may need streamlining. Despite.

3.9 Users Satisfaction of Online Information Searching

1. Su Golder, and Yoon K. L. (2009) (35) The review evaluated studies of electronic database search strategies designed to retrieve adverse effects data for systematic reviews. The results indicate the difficulty of achieving highly sensitive searches for information on adverse effects with a reasonable level of precision. Researchers who intend to locate studies on adverse effects should allow for the amount of resources and time required to conduct a highly sensitive search. Searching databases as part of a systematic review can be a difficult and time-consuming process and usually requires the skills of an information specialist or experienced searcher.
2. **Song, J and Yongcheng, W (2001)** (36) Observe that Internet has already become the largest digital library. Internet, which is still growing at an exponential rate provides us with massive and valuable information. However, the valueless information also grows fast. So how to storage web information and achieve a rapid and appropriate information access has become an important issue. This paper proposed an efficient method based on intelligent agent. In accomplishing the above issue, automatic classification, information filtering and text analysis techniques are incorporated into the method. Information storage, intelligent agent, information filtering, text analysis.

3. **Kibbe, D.C. et al.(1997)** (37) Observe that advent of virtually free Internet access has opened large vistas of health care information to those willing to invest a small amount of time and energy learning how to perform searches using browser software. Health care providers, organizations, and professional associations, among many others, publish "best practices” information for both administrative and clinical audiences, making these recommendations among the fastest-growing types of health care information appearing on the World Wide Web. The problem is how to find best practices among the wealth of resources on the Internet and then how to separate the proverbial wheat from the chaff. Best practice describes a process or technique whose employment results in improved patient and/or organizational outcomes. Health care providers, managed care organizations, administrators, payers, and policy analysts are all interested in improving the quality of health care and are likely to be customers of best practices informational resources.

### 3.10 Users Training in Online Search

1. **Hoogendam, A. (2008)** (38) This communication provides an easy-to-follow protocol for using the free Internet-accessible scientific search engine, Scirus, to search for and subsequently retrieve published patents from several patent offices in portable document format (PDF). Hints on how to ‘read’ patents and how to extract relevant information, as well as how to export bibliographic data from Scirus and how to cite patents, are also given. The reason for providing such a
protocol is that a vast amount of information, also of potential interest to life scientists, is largely hidden for those not knowing how to access these data. Several examples are provided that highlight the reasons to include patent searches into the workflow of life scientists.

2. Seeber F. (2007) (39) At Thomas Jefferson University, Academic Information Research and Services (AISR), has designed a required online Medical Informatics course for 230 first year medical students. The course is designed to demonstrate the need for lifelong-learning skills, to train students in how to ask the appropriate questions to find an answer to their information needs and to instill an awareness of the various types of information sources available to them and the skills to use these resources.

3. Jennifer, A Byrnes and others (2004) (40) reports that National Library of Medicine information access grant allowed for a collaborative project to provide computer resources in fourteen clinical practice sites that enabled health care professionals to access medical information via PubMed and the Internet. Health care professionals were taught how to access quality, cost-effective information that was user friendly and would result in improved patient care. Selected sites were located in medically underserved areas and received a computer, a printer, and, during year one, a fax machine. Anticipants were provided dial-up Internet service or were connected to the affiliated hospital's network. Clinicians were trained in how to search PubMed as a tool for practicing evidence-based medicine and to support clinical decision making.

3.11 Summary

A review of literature will reveal which aspects related to topic have been researched and which aspect have not. It will give an idea about the research to know how to gather information on the study. Unless a literature search is carried out, it is not possible to know whether the proposed research work has already been done before leading to duplication of the work others have already done. There is a possibility that the same are similar idea had occurred to someone else who has
already carried out experiments and published the results long time ago. Therefore, the literature review play major role in the research work.

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