



## Research on the developing policies of army medical library in the new information environment

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### **【Abstract】**

*This article expatiates the resulting changes of the generation, transmission and utilization of information in the new information environment, and analyzes the influence on the library study and library development by the new information environment from the changes in the internal world of the library by Library2.0, the solution of technical problems on the medical knowledge organization by UMLS, and innovation of information services by IC in three aspect. Point out that the developing location of army medical libraries should be changed from the literature support in the medical service, scientific research and teaching to the supporting role by medical information research in the health policies and management, medical science and technology innovation, and disease control and prevention. Put forward the developing policies of army medical libraries in the new information environment: ①to build the fine and characteristic information resources and construct the high-quality army medical literature resources supporting system; ②to strengthen the applied research and practice of high-tech information technology, and improve the high-performance of network information service platform; ③to deepen and innovate the information services, and improve the knowledge services capacity; ④to establish the Information Commons, and give full play to the library as a place of physical role; ⑤to develop and implement the army medical libraries standards, and establish the effective sharing mechanism in the army medical literature resource sharing; ⑥to Strengthen human resources management and improve the core competitiveness of the library.*

**【keywords】:** Medical Library New information environment Developing policies

# **1 Characteristics of the new information environment**

Now, with the rapid development of information technology, wide application of the new web-based information environment is taking shape, so that the interface between library information services industry and other information service industries is increasingly ambiguous, which not only brought to the library a broad space for development, may also be to the enormous impact of the library. In its report to OCLC members in 2005, OCLC statistically analyzed 3300 users' interest and behavioral patterns in the using the library collections in the information age, which show that 84% of users used search engines to begin to information retrieval and only 1% began their information retrieval from the library web page. According to the statistics in a study of the life sciences field in 2007, only 12% researchers went to the library at least once a week. A number of library resources and services, as well as the information specialists who work in the library have gradually blurred impression in today's information users. The role of libraries is not as significant as the original. Therefore, the library is in a period of revolutionary change of information environment, the way of the generation, transmission and use of the literature and information have changed in nature, mainly in the following three aspects:

## **1.1 The compound information resources are coexisted.**

The digital literature and information are becoming the mainstream of the most active information resources, the proportion of digital information collection are increasing and print literature and digital literature are coexisted. The trend of the compound collection development has put forward higher requirements for the automation network management, library building and librarian staff.

## **1.2 The process of academic information exchange is being restructured.**

In the new digital information environment, an information-producer-driven, direct-to-user digital academic information exchange system has shown initial signs of a clue. More and more publishers and information service institutions have established a digital information delivery platform that does not rely on the libraries, and formed a new digital information service model direct to the library and their users. As a traditional institution leading academic information exchange, library is no longer an information monopolist. In addition, some scientific research institution, business and researchers have directly released a large number of academic information through some new types of academic exchange models and network exchange platforms such as Open Access, Public Access, Wikipedia, Weblog and Institute Repositories, and are playing an increasingly active and diverse role in the digital academic information exchange system. In recent years, Google and other search engines have developed quickly and launched Google Scholar, Google Print representing new information services mechanism. It was exclaimed a "Google is disinter mediating the library".

## **1.3 The digital research environment has formed.**

The rapid development of networks have polymerized information resources, information services, information exchange and researchers' working process in the same space, scientific and technological personnel's working space and the basic work flow is gradually digitized, which significantly changed the main point of information needs and basic information retrieval methods. Scientific and technological personnel puts forwards more pressing demands for the knowledge-based information services such as personalized retrieval, information push, information analysis, knowledge discovery, and calls for integrating the multiple formats of information resources and establishing the information service mechanism.

## **2 New information environment's effect on the development of the**

### **library**

With the rapid development of network technology and its extensive application in the library, Web2.0 and knowledge organization has become a hot research in the library science, which also contributes significantly to the development of libraries. Library profession have begun to rethink about the role of the physical library as a place and have profoundly recognized that library information services should find out the reader's demand deeply and walk into the user's space. The libraries have developed the research and practice of the Information Common service, information literacy education and network information conservation, and have been actively involved in the establishment of open access and institutional Repositories. Mainly embodied in the following three aspects:

#### **2.1 Library2.0 brings the internal changes in the library.**

Library2.0 came into being after the application of Web2.0 technologies in the library. Through Web2.0 tools, Library2.0 makes the use of libraries more transparent. Library2.0 enables users to know the search address of first choice and to be easier access to required information in the mass of information, so that "user-centric information service" can put into practice. Library2.0 makes the information demands go beyond the physical walls of libraries and make the entire network to form a site where information could be continually collected and provided, so that non-compatible library service could be improved and library collections share could be realized. Library 2.0 will create a cultural atmosphere to encourage to participate, and the users can contribute, share and manage their own knowledge and perspectives through writing comments, labeling, Blog and Wiki, and participate in the library collections development. Therefore, Library2.0 stride over the reality gap between the network and libraries and is becoming into an important developing direction. As Wiki encyclopedia said, "Library 2.0 model for service will ultimately replace traditional, one-directional service offerings that have characterized libraries for centuries".

#### **2.2 Some technical problems related to organization of information and knowledge have been resolved.**

In the field of biomedical science, NLM's Unified Medical Language System (UMLS) is a knowledge organization system based on ontology and Semantic Web. UMLS collects more than 800,000 biomedical concepts, 1.9 million words from 60 different types of biomedical controlled vocabularies, terminology, classification and expert systems such as MeSH and International Classification of Diseases (ICD), and also provides 135 kinds of semantic types among these vocabularies and thus allows one to translate among the various terminology systems. As a more mature language integrated computerized information retrieval system, UMLS provides facilities for language translation, natural language processing and language standardization, and has already been used in the medical information organization. For example, PubMed has integrated more than 10 databases such as MEDLINE, GenBank, Taxonomy by using UMLS to overcome the difference among a number of information systems, and realizes the medical information and knowledge organization to achieve an integrated search. At present, other developed countries such as France are very active in the application of the UMLS and have developed their own national language version used in the organization of medical information. In China, our research focused on the structure of UMLS, and the Chinese version of UMLS (that is, unified Chinese Medical Language System) has not started because of the cost of R & D, Chinese semantic complexity and other reasons. UMLS is currently the most comprehensive set of tools for knowledge organization in the biomedical field, and even in the natural sciences. With the

UMLS's deepening application in the organization of biomedical literature, more and more biomedical information workers and medical researchers will feel the charm of knowledge organization and knowledge services.

### **2.3 IC brings forth new models for the library information services.**

With the development of the network, library collections and information services have extended to the readers and the user's computer desktop, and then the flow rate of users and paper collection has produced a general decline. In this background, Information Commons (referred to as IC, information-sharing space, multi-function information center) produced in the late 20th century. IC effectively integrates the library space, resources and services in order to provide a one-stop service for users. As a new integrated service model, IC has received the general support of the library profession. According to the statistics of 73 university libraries in 2004 in United States, the vast majority of university libraries have been directly established IC. Currently, there are two IC models: ①**Self-built model of the library:** For example, Morgan Library's electronic information service centers in the Colorado State University integrated reference departments, computer labs and other relevant departments and set up the electronic information laboratory, multimedia presentation room, education video center and other function areas in order to provide one-stop services for users with quick access to digital information resources. **Co-operation model by the library and other departments:** For example, IC in the Indiana University Library is established by the library and the Department of Information Technology Services, and mainly provides one-to-one academic information retrieval, individual research reference and other services by librarians. At present, the libraries in China have started to pay attention to the theory and practice of IC. Some universities libraries and special libraries have established different forms of IC services. As a new library service model adapted to the complex digital environment, IC will become one good developing direction for library information service.

## **3 Developing policies for the medical libraries in the army in China in the new information environment**

When we think of the development of medical libraries in the army in China in the new information environment, we should revisit the "The Five Laws of Library Science" put forwards by Ranganathan in the new library campaign in the 1930's:

- First Law: Book is used;
- Second Law: Every reader has his book;
- Third Law: Every book has its reader;
- Fourth Law: Save the reader's time;
- Fifth Law: Library is a growing organism.

As the eternal ideas in the library science, "Five Laws of Library Science" reflect the people-oriented, reader-based scientific development ideas. After 50 years of development, Medical libraries in the army in China are keeping pace with the overall trend of library development and have developed into an information supporting force for the military health care. With the rapid development of medical science, the information needs of health scientific and technological personnel are increasing, and the role of medical libraries in the

development of military health care and the innovation of medical science and technology is growing. At present, in the new information environment the medical library staff should seize the opportunity to rethink our mission, our services, our work processes, and then establish a reasonable developing strategic planning to strengthen the comprehensive development of the medical libraries in the army in China.

### **3.1 Developing objective**

In the new information environment, medical libraries in the army should know about the accurate positioning according to the status and characteristics of their own. Generally speaking, the developing strategic objective of the army medical libraries is to enhance the core competitiveness of the army medical library, that is, the capacity of medical literature and information organization and the capabilities of medical information service. The developing positioning should turn primarily from the medical literature provision for the medical research, clinical practice and teaching to the medical information support in the three areas: health policy and management, medical science and technology innovation, disease control and prevention. That is to promote the sharing and utilization of medical information resources and provide full range, multi-level, personalized medical information services for the scientific decision-making for health and medical science and technology innovation.

### **3.2 Development Strategies**

**3.2.1 To build the fine and characteristic information resources and construct the high-quality army medical literature resources supporting system.** It is necessary to carry out an investigation on the collection of medical literature in the army medical libraries and to re-plan the development of the medical information resources. It is According to the subject set, research direction, development goals and long-term planning of each service unit, a whole development planning of medical information resources will be established. The planning will define the characteristics collection and core collection structure of each medical library in the army in order to reduce or avoid duplication acquisition and ensure the collection of core medical literature in the whole range of army medical libraries.

**3.2.2 To enhance the application of information technology and improve the high-performance of the network information service platform.** With the rapid development of computer technology and digital library technology, it is necessary to enhance the application of the technologies of information integration and medical knowledge organization and establish the medical information and knowledge organization systems that integrate different types and different formats of information resources. A demand-oriented digital information services platform should be developed to provide the evaluation, links, classification, browsing and retrieval of information resources for the medical scientific and technological personnel.

**3.2.3 To deepen and innovate the information services and increase the knowledge service capability.** It is necessary to improve the information service ideas and to change the service model in order to provide personalized and knowledge-based services embedded in the process of medical research for the scientific research and technological innovation. The Army medical library staff should track the information needs of their users' research projects, and should deeply combine the contents of service with the users' scientific research process, which includes project approval, content analysis, innovative demonstration, papers publication, evaluation of research results, intellectual property. Medical librarians should provide the measures for the user-oriented solutions by using the information resources and information tools to analyze

and reorganize the information and knowledge.

**3.2.4 To establish the information-sharing centers and give full play to the role of the physical library as a place.** In the new information environment, it is necessary to optimize the service facilities and exploit the advantages of medical libraries as the center of distributing medical information to the full, and then complete the role of stack room by carrying out the open service integrated with possession, lending, reading, retrieval and management. At the same time, it is necessary to establish the information center characterized with medical library according to the service concept and service model of Library2.0 and IC in developed libraries, and then make the medical libraries as a place of research centers, information centers and learning centers.

**3.2.5 To develop and implement the army medical libraries standards, and establish the effective sharing mechanism in the army medical literature resource sharing.** In the management of medical libraries in the army, it is necessary to establish the developing standards of medical libraries and the policies of medical information share according to the imbalanced developing status of medical libraries at all levels. Standards should nail down the regulations on the number of books and journals, automation network, information services, financial standards, number of staff in order to ensure the long-term development of army medical libraries. At the same time, in accordance with the idea “A whole library in health systems in the army”, it is necessary to strengthen the sharing and collaboration of medical literature among the medical libraries and gradually establish and improve the medical information service system in the army.

**3.2.6 To strengthen human resources management and improve the core competitiveness of the library.** Firstly, it is necessary to speed up the introduction of the talent and speed up the high ground of qualified personnel in the library. The Second is to enhance staff training. Through formal schooling, short-term training and other forms of education, it is to bring up a number of multi-disciplinary staff team with the knowledge of library and information Science, medicine, computers and foreign language, such as compound. Third, we should intensify research efforts and establish the research center of medical literature and information to carry out the research and academic activities in the library and information science, and create an environment conducive talents are competing against each other and provide powerful intellectual support and personnel for the library's sustained, rapid and scientific development.

**Notes:**

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