Constructing Ideas of Health Service Platform for the Elderly

Shi Huaxin Xie Qi Li Xiaodong
TCM Institute of Basic Clinic Medicine
China Academy of Chinese Medicine Sciences
Beijing,China
Shihuaxin218@163.com
13910921009@139.com、
lixiaodong555@126.com

Liu Baoyan*
China Academy of Chinese Medicine Sciences
Beijing,China
liuby@mail.cintcm.ac.cn
Corresponding author

Mao Shusong
Hubei University of Chinese Medicine
Wuhan,China
mss_812@126.com

Zhou Xuezhong
College of Computer Science and
Information Technology
Beijing Jiaotong University
Beijing, China
xzzhou@bjtu.edu.cn

***Index Terms*—Health service platform, health monitoring, data mining, cloud computing.** *(Key Words)*

Abstract: **The construction of health service platform for the elderly must attach great importance to the health service demands of the elderly , basing on innovation and whole process of health service by taking full advantage of IOT technology, data warehousing, data mining analysis technology, cloud computing technology and other modern information technologies, widely applying the modern trans-regional remote health information collection and transmission equipment, and setting up health service technology platform with the close connection between production and research so as to enhance the ability and level of health service of the elderly.**

I. INTRODUCTION

At present, the aging problem in China has become increasingly prominent. In the 40 years from 2010 to 2050, China will inevitably be at the development stage of the aging society. In addition, the fast aging and large population base are unprecedented. The data of the sixth nationwide census showed that the population aged over 60 years in China was about 178 million, sharing 13.26 % of the total population.

The trend of healthcare service model in the 21st century transforms from the post-treatment of disease to the early health prevention, and the investment of health resources moves the focus down, and the gate forward. “The decision of the Chinese Communist Party Central Committee and the State Council on strengthening of the aging problem” (2006) stressed that we must vigorously develop the elderly service business, and governments at all levels should bring the old age programs within the long-term and annual plans of national economic and social development. “Outline for the Long-term Development of National Civil Technology (2009-2020)” pointed out that the old age programs had 7 prior themes, including analysis of health needs and research of decision information system, care system information technology support and demonstration study, study on mobile health management system for the elderly etc. Therefore, attaching great importance to the health service demands of the elderly basing on innovation and whole process

of health service through taking full advantage of IOT technology, is the only way to build the health service platform for the elderly.

II. CONSTRUCTION FRAMEWORK

The construction of health service platform for the elderly stresses three factors: first, achieving the regional health information interoperability including apartments for the elderly and communities, second, building the health service model and technical support system based on the monitoring; third, building the health research model of information consulting, analysis and decision-making based on the analysis technology of data mining[1-3]. Specifically, the construction of health service platform for the elderly should include:

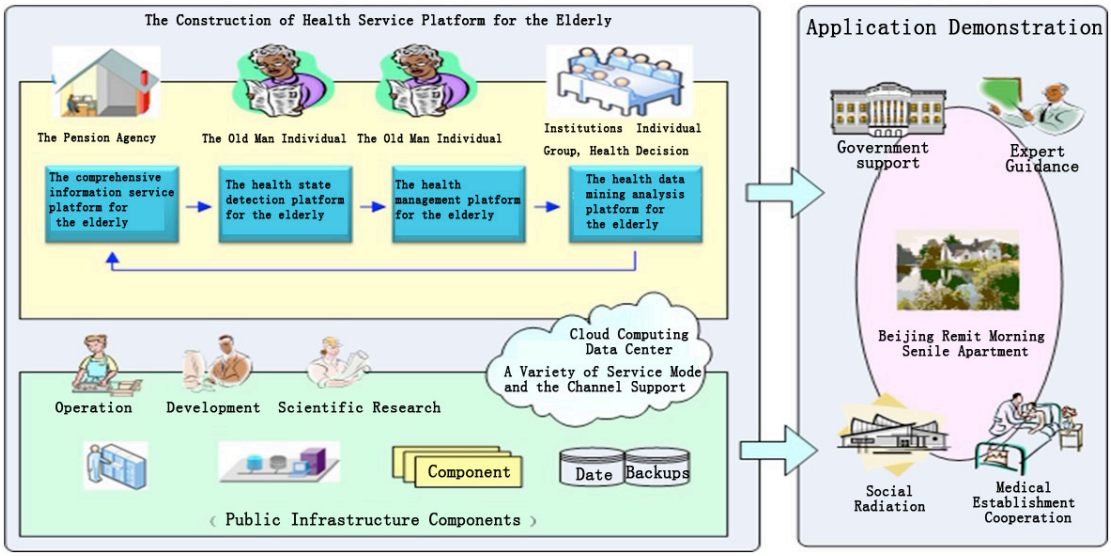

Figure1 -*Diagram of the construction of health service platform for the elderly*

A. Comprehensive Service Information Platform

The comprehensive service information platform integrates the health service resources of the elderly in apartments and communities, provides integrated services and day-to-day management, and establishes several service subsystems including health file management, disease management, so as to meet the service needs of the aged groups who are healthy, insufficient mental development, or physical handicapped even unable to care for themselves.

B.Health Status Monitoring Platform

The health status monitoring platform performs a real-time, dynamic and accurate monitoring and early warning for the health status information of the elderly , implements the remote real-time monitoring services for the high-risk population including common ailment, frequently-occurring disease and high-risk disease, and timely and accurately provides health services and medical support to efficiently prevent disease, to reduce the burden of social health and to improve the life quality of the aged by using IOT technology, human health status monitoring system and trans-regional health information collection and transmission equipment. In addition, the monitoring platform also provides the high-quality analysis and decision of the health data of the elderly.

C.Health Management Platform

The health management platform analyzes the collected health data combining with the medical reports and the health service demands of the elderly, and follows the concept of "preventive treatment of disease". Meanwhile, the health management platform continues to select and optimize the health intervention technology of the elderly, formulates the operation specification of intervention

technology, and then forms the integrated program of the health intervention from society, psychology, environment, nutrition, motion and other aspects to enhance the level of the health management of the elderly.

D.Health Data Mining Analysis and Utilization Platform

The health data mining analysis and utilization platform mainly consists of two parts: first, it establishes several data warehouses including health file information, as well as the application support of mining analysis by use of data summarization technology. Second, the platform establishes the analysis model of dynamic assessment of health risk, and researches the recommended methods of health information and the intelligent analysis system of health management decision support. Meanwhile, it also provides active intelligent health information and decision support according to individual characteristics, such as disease characteristics, health status, life style, needs, and preference.

E.Cloud Computing Data Center

The cloud computing data center integrates the relevant data resources and implements the normalization, standardization and systematization integration for the related data information through cloud computing technology. It mainly consists of software cloud (application), platform cloud (service bus) and power cloud (data bus), and continues to improve the relationship of application cloud and platform cloud through the "preparing-monitoring-treating-forecasting" process and closed-loop service. Power cloud focuses on providing the basic application support system,and provides trans-regional data access as well as the storage and backup of distributed data based on data view; and software cloud mainly provides the personalized and differentiated services for different organizations and groups.

F.Demonstration and Application

The health service platform carries out the demonstration and application from four aspects: first, the health service agency management for the elderly. Second, the health status monitoring system for the elderly, Third, the health management model for the elderly, Fourth, the health data mining analysis for the elderly, of course the platform also implements the data mining analysis of the health data of the elderly by using the concepts and techniques of data mining to provide decision support.

III. CONCLUTION

The health service platform for the elderly focuses on the health service demands of the elderly, covering the whole process of the health service, and carries out the innovative application of modern information technology integration and innovative development of health service model to enhance the core competitiveness of health service industry of the elderly, promote the formation and development of industrial clusters, and make some effective exploration for the solution of health service problems of the elderly.

REFERENCES

L. Qian, "To Research the Necessary for Building a Local Area Medical Date Center," Journal of Mathematical Medicine, vol. 20, pp. 728-730,2007.

[1].M. Zhenyu, D. Rengang and Z. Chuan, "Analysis of Regional Health Information Share Platform System Architecture," Journal of China Digital Medicine press, vol.6, pp. 71-73,2011.

[2].C.Jie, S. Changcheng, and Z. Ping, "Establishment and Application of Interaction and Share Platform of Regional Clinical Care and Health File," Journal of Chinese Journal of Health Informatics and Management press, vol.6, pp. 28-32,2009.

[3]F. Donglei, and G.Jianfeng, "Building Program of Regional Health Information Platform Based on Health File," Chinese Journal

of Health Informatics and Management press, vol.6, pp50-52 ,2009.
[4]W.Xiaohui, "Improving Community Health File and Enhancing Regional Health Information Platform ",Chinese Journal of Geriatric Care press, vol.9, pp106-107,2011.
[5]Z Hongwu, F Sijia, and ZWenlong, "Analysis of Health Information Needs Based on Internet User Search Behavior",Journal of Medical Informatics press, vol.32, pp13-18,2011.
[6]W Limin, ZXin, and C Jiaxu, "Development of Information Collection and Automated Analysis Platform for Sub-Health Groups " Journal of Shanxi College of Traditional Chinese Medicine press, vol.11, pp74-76,2010.
[7]H.Jingqing, L.Baoyan, and W Yongyan, "Application and Analysis of Clinical Individualized Treatment Information Characteristics and Data Mining Technology of Traditional Chinese Medicine", Modernization of Traditional Chinese Medicine and Materia Materia-World Science and Technology press, vol.6, pp,14-16,2004.