*Special Lecture***The Status and Prospects of Rehabilitation in China^{*1}****Jianjun Li^{*2,*3}****The Current Status of Rehabilitation Institutions in China****1. The problem of aging society in China**

There is a population of 83 million disabled in China, and 50 million of them need rehabilitation treatment. China is becoming an aging society with 178 million people age over 60, in which 70 million need rehabilitation. There is a significant trend towards aging society. Judging from the time it takes for the population of people older than 65 years to increase from 7% to 14% among the total population, China ranks first in its speeds towards becoming an aged society. Under this circumstance, the rehabilitation needs of those sick among the older population and persons with disability shall be addressed. Meanwhile, there are also a lot of patients with chronic diseases and sub-health conditions, and new sufferers of disability due to car accidents. Great rehabilitation needs require more rehabilitation facilities and more investments.

2. The problems in the development of rehabilitation in China

There are mainly three problems in the development of rehabilitation. Firstly, the supply of rehabilitation service cannot meet the demands of the growing rehabilitation needs ; secondly, rehabilitation resources may be wasted or not-in-use despite the increasing investment in rehabilitation ; thirdly, the number of rehabilitation professionals are still not enough. The core of all problems can be concluded to the shortage of rehabilitation medical professionals and administrators, and it can be thought of as a missing piece of the water bucket representing development of the cause of rehabilitation.

3. The current status of rehabilitation resources

There are mainly 6 types of rehabilitation facilities administered by 6 government branches, including China Disabled Persons Federation (hereinafter referred to as CDPF), National Health and Family Planning Committee (hereinafter referred to as NHFPC), Ministry of Human Resources and Social Security (hereinafter referred to as MHRSS), Ministry of Civil Affairs (hereinafter referred to as MCA), Ministry of Education and private rehabilitation facilities. Among which CDPF and NHFPC take up the most.

Facilities led by the CDPF are major platform for rehabilitation services in China. In recent years, the Chinese central government has made a lot of efforts to develop the “two systems” for persons with disability, by the end of 2013, 1 national center, 39 provincial centers, 1888 city and prefecture level centers have been built. A network covering the entire country has taken shape.

Resources governed by the NHFPC are mainly located in rehabilitation departments of hospitals. To support the development of rehabilitation medicine, the NHFPC issued “Guidelines for building and managing rehabilitation departments in comprehensive hospitals”. In large and middle sized cities all over China, more and more rehabilitation departments are being built and the concept of modern rehabilitation is being popularized very quickly.

The MHRSS also have specialized institutions targeting at work injury patients that provide chronic and vocational rehabilitation.

The MCA nursing homes have started to offer rehabilitation service, integrating prosthetics, orthotics and rehabilitation. They have become a new force of reha-

Received March 17, 2015

^{*1} This article is based on the special lecture at the 51st Annual Meeting of the Japanese Association of Rehabilitation Medicine in Nagoya on June 6, 2014

^{*2} China Rehabilitation Research Center, No.10 , Jiao Men North Road, Feng Tai District, Beijing, 100-068, China

^{*3} Faculty of Rehabilitation, Capital Medical University, No.10, Xitoutiao, You An Men Wai, Beijing, 100-069, China
E-mail : crcc100@gmail.com

bilitation service.

Rehabilitation resource in education system are focused on special education and specific disease, such as Speech therapy in deaf-mute school, vision rehabilitation in blind school, intellectual rehabilitation in mental handicapped school.

Private rehabilitation facility serves the rest of the population, and its significance is growing rapidly.

4. The current status of professional training of rehabilitation personnel

At present, China mainly provides training for rehabilitation doctors, therapists (include PT, OT, ST, P&O, psychologist and vocational rehabilitation therapists, etc), nurses and others professionals.

Rehabilitation doctors are mainly trained for a specialty or sub-specialty (bachelors, masters and PhDs); therapists are trained in 4-year bachelor degree program or 3-year junior-college degree program; nurses are trained in bachelor and junior-college degree programs; there are also programs for training of rehabilitation engineers, prosthetist and orthotist and administrators (**Table 1**).

At present, there are 72 colleges or schools offering undergraduate education in rehabilitation therapy in China. Most of them are in the eastern regions and there is a huge gap between the eastern and the west-

ern regions.

The emphasis of course planning is the teaching of compulsory courses. There is a unique program in rehabilitation education in China, which is the traditional Chinese rehabilitation therapy. Classes with emphasis on both theory and practice are provided, with a ratio ranging from half to half to 3 to 4. Courses teaching students to conduct researches are also offered. The first three years are mainly spent on studying theories with the last year on internship. After graduation with a bachelor degree, students can also continue studying for national continuous education or distant-learning (**Table 2**).

5. The current status of rehabilitation's system

In regards to the development of the legal system and social security system, China has issued a series of laws to protect persons with disability, such as "China's Law on the Protection of Persons with Disabilities", "The Development Program for the Twelfth Five Year Plan of the Cause of Persons with Disability", "Disability Discrimination Ordinance", "Regulation on Disability Prevention and Rehabilitation of the Disabled and Integration in Society" and "Handicapped Protection Act". Moreover, to ensure the social security of persons with disability, welfares such as urban medical insurance, new rural cooperative medical and disability assistance are provided.

Strategic Analysis of Rehabilitation Institutions in China

1. Strength

By integrating internal factor and external influences, the strength, weakness, opportunity and threat faced by rehabilitation facilities are as follows:

Thanks to 2 decades of efforts, rehabilitation resources have been expanded, and service system has become more complete with larger capacity.

Large general rehabilitation institutions have been set up in 39 provinces, which are over 80,000 facilities all over China. Moreover, there will be another 1491 rehabilitation facilities built during the "twelfth five year plan" period.

The establishment of three-level rehabilitation services network has been initiated (acute rehabilitation, sub-acute rehabilitation, community-based rehabilitation). The service system integrating Rehabilitation Department in General Hospitals, large-scale comprehensive rehabilitation centers, independent comprehensive or specialist rehabilitation centers, community rehabilitation centers and home has basically formed.

Table 1 Rehabilitation professionals and their training approach in China

Professionals	Training approach
Rehabil doctor	Rehabilitation professional doctor, sub-professional doctor (Scholar, Master, Doctor)
Therapist	Undergraduate for 4 years, junior college education for 3 years
Nurse	Undergraduate, junior college education
Others	Rehabil engineer, prosthetist and orthotist, manager

Table 2 Course planning of rehabilitation education in China

Emphasis	Teaching of compulsory courses Special course: traditional Chinese rehabilitation therapy
Ratio	Theory and practice 1:1-1:1.5 Lessons on how to conduct scientific researches are also offered
Internships	First 3 years: theory study Fourth: clinical practice
Re-education	National reeducation Distance education

A regional network of rehabilitation resources has formed. The resources in the north of China is distributed with its technological center in Beijing (CRRC), and that of the east of China, south-west of China and south of China is Shanghai, Chengdu and Guangzhou respectively. The centers are posting positive influences on their surrounding areas.

2. Weakness

There are many adverse factors. Such as in general, rehabilitation resource is scarce and poorly distributed ; ambiguous definition of facility function, poor referral system ; Lack of professionals, low service quality ; underdeveloped service system ; Lack of government regulation and financial support.

3. Opportunity

We are also facing the rare opportunities, that the rehabilitation industry has a promising future with increasing emphasis on the rehabilitation medical service from central government, economic and social development spawned demand for rehabilitation services.

The reform of the medical system provides important support to strengthen medical rehabilitation work. The focus of health reform of public hospital is to form a hierarchy system, divide acute and chronic treatment, establish two-way referral model.

Different types and levels of medical rehabilitation facilities are the important "outlet" for post-acute stage patients in general hospital. To make sure that rehabilitation facilities can take in patients over from acute general hospitals, by now, the local governments all over the country have begun the construction of medical rehabilitation institutions and improvement of system.

4. Threat

Rehabilitation institutions in China are now facing four major challenges : Health problems and challenges brought by economic and social development, the lack of a standardized and unified industry management standard, irrational rehabilitation personnel structure, unbalanced hierarchical layout, Unclear functions of medical institutions at all levels, cooperation mechanism needs to be improved.

In a word, ever since the introduction of rehabilitation medicine into China in 1980s last century, rehabilitation facilities at all levels have been established, including national level, provincial level, city level and prefecture level institutions as well as community rehabilitation facilities.

Rehabilitation departments are set up in general hospitals above level II . A national network is forming. However, compared with the developed countries, reha-

bilitation medicine is a relative new discipline in China, and facilities are administrated by different government branches, there are many problems to be overcome in terms of construction standard, management model, and working mechanism, which restrict the construction and development of rehabilitation facilities in China.

It will be of significance to make through analysis on developing status of rehabilitation cause in China and explore its developing trend in the future.

Future Development Suggestions

Based on the analysis above, from the perspectives of macro-policies and institutions construction, a few recommendations for future development are proposed :

1. Macro-policies

1) Improve rehabilitation medical service system and realize hierarchical medical system and two-ways referral

Nowadays rehabilitation department of general hospitals and comprehensive rehabilitation centers have few places to discharge patients into, while rehabilitation hospitals and communities have little resource of patients.

Therefore, the state will build a hierarchical medical rehabilitation system to clarify the service standard and functional properties of each level of rehabilitation facilities to give full play to their own functions. At the same time, the different levels of rehabilitation facilities should be able to refer patients to each other, either from higher to lower level or vice versa. Large general hospital or level III general hospital rehabilitation department should focus on early intervention in the acute stage ; reduce incidence and degree of disability, and to assume the task of training professionals. Comprehensive rehabilitation centers should mainly focus on the subacute rehabilitation for patients, and provide the whole process of rehabilitation services to patients. Rehabilitation hospital should focus on chronic and stable patients, provide specialized rehabilitation treatment, and should have a general clinics ability to manage other diseases and to deal with emergency to ensure the medical safety. The community health service institutions and township hospitals should focus on recovering patients, and provide rehabilitation professional guidance. On this basis, the linkage between Hospital Rehabilitation and Community Rehabilitation should be strengthened, enabling patients to be able to mobilize within the referral system.

2) Regulate the institution-construction and service behavior, to improve service capabilities

- (1) Introduce policies to regulate the construction standards ;
- (2) Develop standards to improve service levels ;
- (3) Introduce multi-resource investors to attract social capital.

3) Permanent and temporary strategy to accelerate the rehabilitation team building

Permanent solution is the strategy to “solve the problem once and for all”: increase the number of schools in training rehabilitation professionals, improve the academic levels of rehabilitation workers, and balance the relationship between supply and demand of talents.

Temporary solution is the strategy to “alleviate the symptoms of illness”: post-graduation education and on-job training of rehabilitation personnel, and encourage transfer of physicians from other scopes of practice through standardized training and retraining.

4) “To focus on the highest and lowest level of facilities, and the middle-level will grow accordingly”, enhance the development of the network of three-level rehabilitation service

Regional general rehabilitation centers are the driving force, and community rehabilitation facility is the key of development. Build a scientific service system in which patient can be referred from rehabilitation departments in general hospital to regional, community-based rehabilitation facilities and patient’s home, so that each type of rehabilitation facilities can fulfill their own responsibilities.

5) Promote the joint development of the basic medical service system and the basic medical insurance system

Oriented to the needs of the masses, establish and improve the security system of basic medical rehabilitation, and give full play to the role of cost-sharing, to resist risks ; push forward the reform of the basic medical insurance payment, incentive-oriented transformation of medical personnel, to promote medical rehabilitation institutions to improve efficiency, strengthen management, and control of costs. Promote the rehabilitation service system and the joint development of the security system

6) Standardized and unified rehabilitation services institution-building standards

7) Establish quality control and monitoring system for rehabilitation service

Quality control and monitoring system for Rehabilitation service is the important way to ensure the high

quality of rehabilitation. The quality monitoring for Rehabilitation service includes quality control and outcome evaluation. Take an example of outcome evaluation of multi-disciplinary collaboration and optimal rehabilitation team. Evaluation will be conducted from 3 dimensions respectively from staff of rehabilitation team, from rehabilitation outcome and type of team service – a tridimensional evaluation system. It’s not only a tool to assess the rehabilitation outcome but also the team members.

8) Establish a long-term working mechanism for the balanced development of rehabilitation facilities

- (1) Intensify supports for underdeveloped areas,
- (2) Establish advanced models,
- (3) Enact unified policies,
- (4) Strengthen and improve the financial support mechanism of the construction of rehabilitation facilities.

9) Set up rehabilitation resource management coordination system on basis of “Internet of Things”

In term of method, rehabilitation Internet of Things is an effective means to achieve this integration. Through the establishment of a central data processing center, unified system of rehabilitation services for personnel, financial and material resources to achieve diagnosis and treatment system among general hospital, rehabilitation hospitals and community health service centers. Unified testing and evaluation and rehabilitation technology service through establishment of medical centers providing Rehabilitation technical support services, and promote circulation in the clinic and regional networking by combining a variety of payment methods. We believe that such an Internet of Things is system integration for Rehabilitation Development, which works as a reference for the establishment of the entire rehabilitation health care system.

2. Resource-oriented rehabilitation institution-building

1) Cultivate leading talent and management mainstays

Leading talent should be constantly learning, and their way of work shall transform from management to leadership, from passive response to active response, shift from regulation management to cultural management.

2) Build resource center

The construction of resource center model rehabilitation institution should be oriented by leader and the

mainstays, in which rehabilitation service quality shall be considered as the fundament, research level as competitive power, teaching ability as resource for sustainable development, institution hardware as support. To further develop multi-level unique core competitiveness with high-quality personnel training, scientific research, discipline construction, rehabilitation technologies, and so on.

3) Innovate management system and ignite the vitality of institution

- (1) President is responsible for executing the decision of the council
- (2) Government dispatch supervisor to supervise the organization's management
- (3) Council is the core, but regulation-making, administrative, executive powers shall be separated

4) Optimize micro-incentive mechanism of decentralization and income based on contribution

- (1) Government should optimize policies of compensation and supervision
- (2) Decentralization
- (3) Development rehabilitation worker's salary system
- (4) Encourage the enthusiasm of rehabilitation worker

Modern rehabilitation has been introduced to China over 30 years ago. At present, the development of rehabilitation in China has entered a new stage of transformation. At this critical time of transition, it is of great significance to analyze and study the current status and the problems faced by rehabilitation institutions in China during the transformation. It is also very important to borrow the experiences of developed countries in the process, as an international standpoint and perspective

is extremely helpful for China in its endeavor to develop its own strategy for development. Hopefully this paper could reflect the rapid development of rehabilitation in China in recent years, and based on good experiences, development of rehabilitation in China and even the world could be further prompted.

Acknowledgements

The authors would like to appreciate Professor Eiichi Saitoh and The Japanese Association of Rehabilitation Medicine for offering the chance to attending the 51st Annual Meeting of The Japanese Association of Rehabilitation Medicine and introduce the status and prospects of rehabilitation in China.

References

- 1) 第二次全国残疾人抽样调查主要数据公报 2006
- 2) 第六次全国人口普查主要数据公报 2010
- 3) 2013 年中国残疾人事业发展统计公报 2014
- 4) 卓 大宏：关于我国康复治疗技术教育改革与发展若干问题分析. 中国康复医学杂志 2004；19(6)：406-410
- 5) 卓 大宏：中国康复医学学会的三十年. 中国康复医学杂志 2014；29(11)：1020-1022
- 6) 卓 大宏：中国当代康复医学发展的大趋势. 中国康复医学杂志 2011；26(1)：1-3
- 7) 南 登昆：关于康复医学学科建设与发展的的问题. 中国康复理论与实践 1996；2(2)：61-65
- 8) DeLisa JA：Rehabilitation Medicine：Principles and Practice. Lippincott-Williams & Wilkins, Philadelphia, 1998
- 9) Woo J, et al：Ageing in China：health and social consequences and responses. Int J Epidemiol 2002；31：772-775
- 10) Available from URL：http://college.gaokao.com/speciality/368/