



## Views &amp; Comments

## Health in an Aging World: What Should We Do?

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## 1. Aging: A global problem

The global population aged 60 and older is likely to grow to historically unprecedented levels. According to the latest estimation, 2 billion people will be aged 60 and over by 2050—a number equivalent to 22% of the world's population. China's aging population also continues to grow rapidly; the Chinese population aged 60 and older reached 14.8% by the end of 2013. This percentage is estimated to reach 17.17% by 2020, and may be as high as 30% by 2050. The roots of population aging in China are the same as elsewhere: a low fertility rate, a longer life expectancy, and the effective control of infectious diseases. However, China faces other challenges as well, as it possesses the largest population in the developing world. These challenges are: ① a low GDP per capita (announced at #80 globally, in 2014 by International Monetary Fund), ② an economic imbalance between coastal and inland regions, ③ a rapidly increasing ratio of urban to rural population, and ④ an increasing amount of medical expenses for the aging population. According to statistics from the National Health and Family Planning Commission of the People's Republic of China (NHFPC), almost 50% of people over 60 suffer from chronic diseases; of these, hypertension, diabetes, Alzheimer's disease, stroke, and coronary disease are the top five. Cancer is also a heavy burden for people and for society. From an economic point of view, the health expenditure for China's aging population was 2.0456 trillion CNY in 2014, accounting for 3% of the GDP; and medical expenses for seniors accounted for 50% of existing healthcare resources.

## 2. Chinese advantages in facing aging

Although its aging population presents many challenges, China still possesses several advantages in facing aging.

## 2.1. The coexistence of Chinese traditional and modern medical practices

Chinese traditional medicine and drugs have been used to treat diseases for over 1500 years. Simiao Sun (孙思邈, 581–682 AD) is the acknowledged father of Chinese traditional clinical medicine; he designed and separated clinical medicine into the sub-departments of internal medicine, surgery, gynecology, pedi-

atrics, eye-nose-and-throat, and acupuncture. Traditional Chinese medical universities and research institutes still exist in China, teaching and performing both clinical and basic research on traditional medicine and practicing traditional therapies. Youyou Tu's success in using a traditional Chinese drug to treat malaria is an excellent example of making use of traditional medicine and drugs. The coexistence of Chinese traditional and modern medical practices helps to ease the economic burden and requirement for healthcare in both the urban and rural areas of China.

## 2.2. Previous success with country doctors and an ordered medical system from local clinics to hospitals

A successful system began in the 1960s that started with country doctors (previously named “barefoot doctors” to indicate their close link with peasants), then moved up to different levels of hospitals. This system ensured that patients with mild or chronic diseases were treated by country or family doctors. Unfortunately, this successful system was discontinued, for various reasons. Nevertheless, it has started to revive, and family doctors are becoming more and more welcomed to communities in certain cities. At the same time, different levels of government have issued policies to help family doctors improve their professional technology and experience; to develop “green path” systems for doctors to transfer severe cases to specialized hospitals; and to educate people in the advantage of signing contracts with family doctors for better and timely service. A national training center and courses for family doctors have been developed in Shanghai, and video training courses will start soon. Furthermore, strategies are in place to encourage and recruit more medical students from less-developed regions to universities in the coastal regions, in order to regenerate ideal and realistic measures for an orderly system that can serve the people better.

## 2.3. A Confucius-based family culture

China has a long history of a Confucius-based family culture. As a result, children usually have close relationships with their parents. These close family ties link older family members to the younger generation, helping to keep the older members active and optimistic. Authorities have noticed an issue of seniors living alone or only with their grandchildren in rural regions. Further

development of the Confucius-based culture would be a good policy to help newcomers to cities set up their homes and bring their families to join them. The Grand Transition celebrated every Chinese New Year represents the strong family ties in Chinese people, and these close family ties have developed into a social spirit. Ideas for building this social spirit include increasing visits to senior residences; developing daycare homes for the aging to help them enjoy their lives when younger family members are away from home; and generating a credit system by encouraging 60-year-olds to help and visit 70- and 80-year-olds, thereby building up “credit” that they can use to receive help in the future. Many cities have offered free bus and subway cards for seniors, encouraging them to go out and merge with society in order to keep fit. All of these are good practices for keeping seniors healthy.

2.4. Strong administrative support from the government

In China, the central and local governments are strong and effective. Once problems or issues are realized and supported by the government, various policies and strategies are practiced and productive results are achieved. The Chinese government is aware of the problems and challenges caused by the aging of the population, and we are confident that by practicing the strategies and policies outlined above, some of the problems facing us will be solved.

3. Perspective in geriatrics (medical sciences for the aging)

Fig. 1 presents strategic plans for developing a healthy aging population by the establishment of medical complexes for the aging.

To expedite solutions to the problems of disease prevention and treatment for an aging population, we present the following suggestions for consideration.

(1) Develop several medical complexes for the aging population at national or provincial levels. These complexes should differ from current hospitals in their reorganization and building of

integrated clinical departments on the common chronic diseases that affect an aging population. Integrated departments may be graded by level, for example from levels I to III, and may include clinicians from cardiology, nephrology, neurology, and endocrinology. Higher-level departments will contain more experienced experts and will take charge of the more severe cases. This organization will result in a more efficient and logical use of limited medical personnel. More importantly, these complexes should set up a chain linking prevention, early diagnosis, and early intervention of diseases for seniors. The hospitals in these complexes will be research centers, initiating demanding projects ranging from clinical medicine to basic research. This matching up of clinical sciences with basic research will effectively fill in the gap between basic research and clinical application. In addition, these hospitals should establish constant professional interactions with community-based clinics, so that the hospital experts make rounds, act as consultants, provide a “green path” for the transfer of cases that need to be hospitalized, and jointly carry out public education with community-based workers. A special hospital for the aged was recently set up in the Minhang District of Shanghai; it is administered by Zhongshan Hospital, which is a teaching hospital of Fudan University, Shanghai Medical College. This hospital may start out as an attempt to organize a medical complex for aging patients. In 2016, based on accomplishments on geriatrics, the Chinese Ministry of Science and Technology assigned six clinical and research centers to Beijing, Shanghai, Sichuan, and Hunan. These centers may also serve as a preliminary basis for the development of future medical complexes [1].

(2) A higher percentage of older people in the population increases the prevalence of chronic diseases, disabilities, and dementia. With the acceleration of urbanization and population aging, protecting and promoting the mental health of the aged has attracted more and more attention. In addition to cardiovascular diseases, cancer, respiratory diseases, and diabetes, the number of disabled older people is huge. For example, in China, there were 97 million seniors with chronic diseases and 36 million disabled

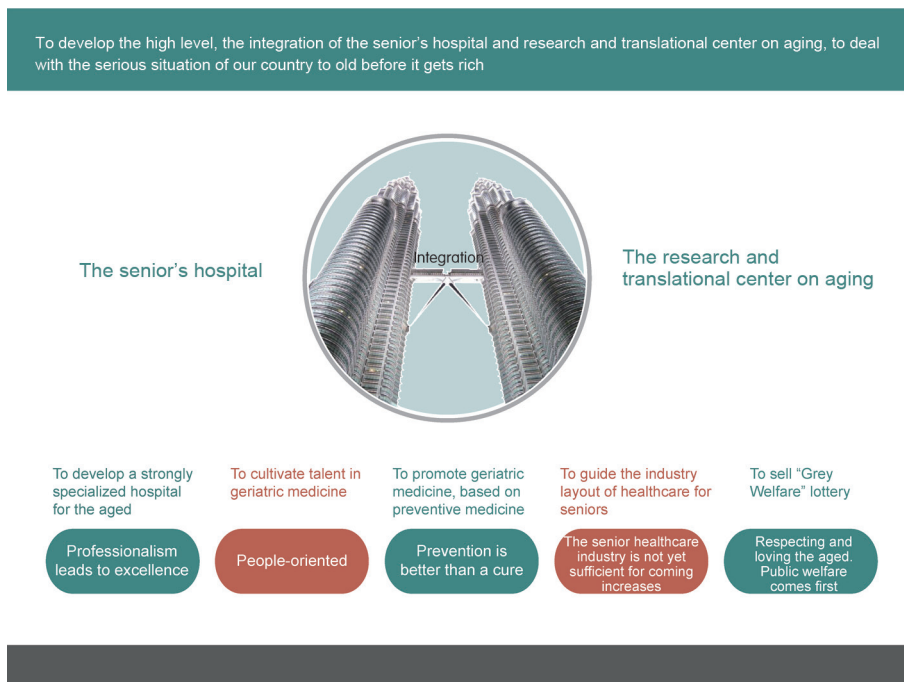


Fig. 1. Diagram of strategic plans for a healthy aging population.

seniors in 2012. By 2013, these numbers were estimated to increase to over 100 million seniors with chronic diseases and 37.5 million disabled seniors. Based on the disease spectrum of the aging population, it is advisable for medical complexes to focus on the prevention and treatment of dementia, Alzheimer's disease, neurodegenerative diseases, cerebral cardiac diseases, infections and immune responses, osteoarthritis (degenerative arthritis) movement disabilities, and metabolic disorders.

There is growing evidence of the underutilization of health promotion and disease prevention, including secondary and tertiary prevention, which can be efficient and cost-effective for older age groups. In this respect, primary healthcare (also referred to as community health services in China) is important for providing a high-quality general assessment of the health status of older persons, with the goals of early detection of physical and cognitive decline, adequate preventive measures, and timely treatment. This proposal also focuses on interventions that are targeted at the “pre-old age” population, that is, those aged 50 and up [2]. Based on a survey of the prevalence of chronic diseases in different age groups in a small number of populations, the increased percentages of high blood pressure and diabetes are striking, indicating that healthy lifestyle education is an important task for the “pre-old age” group (Fig. 2).

(3) Community-based integrated care centers addressing the health and social needs of seniors based on diseases, function assessment, and a health information system should be established. Although a large number of care centers for seniors have been developed and launched in many cities in China, the numbers of beds and services at these centers are insufficient to meet social demands. At the end of 2012, China contained 40 000 care centers with as many as 3.9 million beds. However, an estimated 8 million beds are needed in care centers—far beyond the available number of beds. An orderly, graded assessment that characterizes those who are accepted into these caring centers and a system for entering and exiting these caring centers are badly needed. Insurance companies should be involved in this assessment system as a third party, to provide good justification for maintaining it. Private sectors are becoming more and more interested in developing care centers for the aging population at different levels. However, although private sectors can ease the need for public centers, regulations for good practices are still needed [3].

(4) The education and training of all levels of geriatricians—from family doctors to specialists, and including head nurses for

geriatric clinics and senior rehabilitation technicians—must be strengthened as an essential way to provide better services to an aging population. In China, becoming a family doctor is not currently a popular choice for a medical doctor; in addition, the staff salaries and bonuses in all hospitals are lowest for the geriatric department. An adjustment of the pensions and welfare benefits for geriatricians should be conducted at a national level. The current competitive promotion system in hospitals, which is based on publications and the employment of high technology, needs to be modified to favor those working in geriatrics. The concept that geriatricians are “all-round” practitioners, without a professional specialty, should be overturned. In fact, due to the complexity of the disease and health problems affecting an aging population, the provision of a professional education through specialized courses and continuing education is mandatory. Although a medical doctor degree (MD) in geriatric education has already been installed in several medical colleges and universities in China, such curriculums should be further encouraged. Similarly, an educational curriculum for head nurses, nutritionists, and senior experts in rehabilitation should be planned for the future.

(5) When facing an aging world, the promotion of new areas for economic growth is of utmost importance. R&D in drugs, healthcare food, and supplementary healthcare nutrients for seniors has developed rapidly in China. In 2012, a consensus-authorized regulation for the safety of healthcare food was issued, aiming to promote the development of these products. A possible output of 1000 million CNY was estimated for these products from 2012–2015. However, an evaluation report in 2015 showed that only 2006 companies were involved in healthcare food, and that these companies made a total output of 280 million CNY—indicating that opportunities in healthcare food are still open. As aging people usually take several medications per day, and as some have difficulty swallowing, there is a need for developing other means of drug delivery, such as by inhalation or skin patches. In addition, novel medical devices that can be worn are much needed and well received. Furthermore, developing public education through the Internet and developing services to promote a healthy and active aging society are fields that should be covered [1].

#### 4. Conclusions

From a global perspective, we expect each country to prepare to face the social and medical problems of population aging.

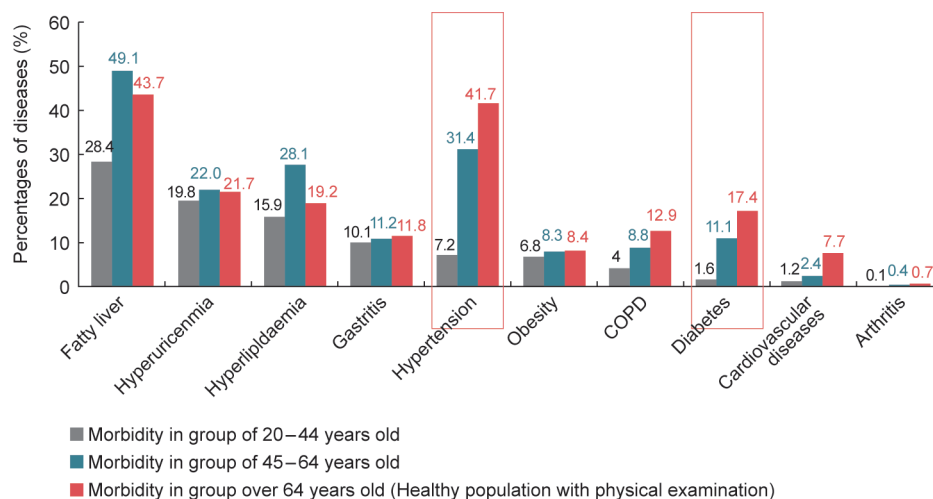


Fig. 2. Percentages of diseases in different age groups in routine physical examinations: Increased percentages are shown for hypertension and diabetes. COPD: chronic obstructive pulmonary disease.

Looking ahead and structuring their policies, measures, and research projects will not only help all countries to develop effective ways to overcome aging problems; it will also help their aging citizens to live better lives.

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