



# Addressing the shortage of health professionals in rural China: issues and progress

## Comment on “Have health human resources become more equal between rural and urban areas after the new reform?”

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### Abstract

Maldistribution of health professionals between urban and rural areas has been a serious problem in China. Urban hospitals attract most of the health professionals with serious shortages in rural areas. To address this issue, a number of policies have been implemented by the government, such as free medical education in exchange for obligatory rural service.

**Keywords:** Health Professionals, Rural Areas, Medical Education, China

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China has been traditionally characterized as a dualistic society that consists of urban and rural areas. Although gradually decreasing because of urbanization, its rural population totaled 630 million in 2013, which accounted for about 46% of the total population, or 9% of that of the world. Since its economic reform and opening up to the outside world in 1978, China's economy has been developing at a high rate for nearly forty years. Farmers also benefit from this modernization. Rural households' Engle coefficient, or the proportion of income spent on food, fell from 67.7% in 1978 to 37.7% in 2013. However, farmers generally are still poorer and have less access to resources compared with urban residents. For example, the Engle coefficient of urban households was 35.0%. Per capita income of urban households was 3.0 times of that of rural households (1). The neonatal mortality rate and infant mortality rate in rural areas were respectively 8.1 and 12.4 per 1,000 live births in 2012, both of which were more than two times of those of urban areas. Furthermore, a majority of China's illiterate population were in rural areas.

Like in many other countries (2–4), maldistribution of health professionals between urban and rural areas has been a serious problem in China. Urban hospitals attract most of the health professionals with serious shortages in rural areas. The following gaps were observed between rural and urban areas for health professionals (3.4 vs. 8.6), doctors (1.0 vs. 3.0), Registered Nurses (RNs) (1.1 vs. 3.7) per 1,000 population (5). In consequence, rural residents were less likely to have access to healthcare than their urban counterparts (6,7). Therefore, it is of utmost importance that equity in the allocation of health professionals is improved in the country. By studying the changes of health professionals in rural and urban areas, Qian Yang and Hengjin Dong's editorial on December 2014

is interesting and valuable because it addresses an important topic in health policy research and discusses the effects of China's most recent healthcare reforms on rural health workforce (8).

In China, distribution of health professionals is largely determined by the market instead of the government because health professionals have the right to practice wherever they choose based on their own preferences and the availability of positions. In other words, it is mainly up to health professionals themselves to work in urban or rural areas. Reasons for unwillingness to choose a career in rural health entities are similar to those of other countries, mainly relating to financial incentives, career development, and living conditions (9–12). Therefore, it is not surprising that the authors of the editorial found some new healthcare reforms posed negative effects on retention of rural health workforce because they affected the financing of rural health entities and career development opportunities.

According to international experiences on rural health workforce, many educational measures are capable of promoting rural service and/or retention, such as rural curricula and rotations in medical schools and scholarships tied to rural practice (13), incentives for rural practice or compulsory duties (3), establishing a medical school exclusively for producing rural physicians (14) and rural quota on medical schools (15), and admitting medical students with rural background (16).

In China, medical schools prefer to produce physicians for tertiary hospitals in urban areas. Most of them are not interested in producing health professionals for rural areas. Recently, policy-makers and educators come to realize that it is important to strengthen rural health professionals staffing and training. It is worth of mentioning that a number of

new policies were issued by the government in the past few years to address the shortage of health professionals in rural areas. Especially, priorities were given to General Practitioner (GP) education. In a three-year plan beginning in 2010, the government declared to provide financial supports to produce health professionals for rural areas and improve rural retention. The main components of the plan were to provide educational institutions with special quota to enroll medical students with rural background, offer the students financial aids and 3/5-years' free medical education, and request the graduates to be employed in rural health entities for six years. The central government pledged to provide financial supports for the training of one 5-year medical student for every Township Health Center (THC) in western and central China. From 2010 to 2014, about 5,000 rural students per year were admitted for this purpose and the central government granted 6,000 yuan (about 950 US dollars) a year for each student. Majors for these students included clinical medicine, traditional Chinese medicine, and minority medicine (e.g. Mongolian, Tibetan, or Uighur medicine). Provincial governments were asked to develop their own plans within the framework of the national plan. Therefore, the policy is likely to have notable impact on rural health manpower in the near future (17,18). In another policy issued by the Ministry of Education and the Ministry of Health in 2012, several medical universities and colleges were chosen to conduct a pilot reform in the education of GPs for rural areas. A "3+2" model, 3-year diploma education and 2-year postgraduate GP training, was suggested to be employed for this purpose. Curriculums would be modified in order that students were equipped with knowledge and skills to provide six kinds of health services in rural areas, namely prevention, care, diagnosis, treatment, rehabilitation, and health management (19). At the same time, a number of measures have been taken to improve competencies for rural health professionals throughout the country, such as in-service training for THC health professionals and village physicians, partnership between urban hospitals and THCs, and job-transfer training for GPs.

Generally speaking, the free medical education in exchange for obligatory rural service is a step in the right direction in addressing the shortage of health professionals in rural China. Nevertheless, its effectiveness is still waiting to be systematically assessed. Obviously, factors that discourage rural service will also affect the career determination of graduates in this program. In addition to the educational measures, comprehensive strategies may be needed to encourage health professionals to practice in rural areas by addressing their concerns regarding compensation, career development, and other relevant issues.

#### Ethical issues

Not applicable.

#### Competing interests

Authors declare that they have no competing interests.

#### Authors' contributions

Guided by YK, JH drafted the manuscript. YK and JH finalized and approved the manuscript.

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#### References

1. National Bureau of Statistics of China. National Yearly Data. [cited February 12, 2015]. Available from: <http://data.stats.gov.cn/workspace/index?m=hgnd>
2. Matsumoto M, Inoue K, Noguchi S, Toyokawa S, Kajii E. Community characteristics that attract physicians in Japan: a cross-sectional analysis of community demographic and economic factors. *Hum Resour Health* 2009; 7: 12. doi: [10.1186/1478-4491-7-12](https://doi.org/10.1186/1478-4491-7-12)
3. Enari T, Hashimoto H. Does salary affect the choice of residency in non-university teaching hospitals? A panel analysis of Japan Residency Matching Programme Data. *Hum Resour Health* 2013; 11: 12. doi: [10.1186/1478-4491-11-12](https://doi.org/10.1186/1478-4491-11-12)
4. Yamauchi K, Funada T, Shimizu H, Kawahara K. What factors are affecting physician payment by acute care hospitals in rural Japan? *J Med Dent Sci* 2007; 54: 57-63.
5. National Health and Family Planning Commission of China. China Health and Family Planning Statistical Yearbook 2013. China Union Medical College Press; 2013. [in Chinese]
6. Gu D, Zhang Z, Zeng Y. Access to healthcare services makes a difference in healthy longevity among older Chinese adults. *Soc Sci Med* 2009; 68: 210-9. doi: [10.1016/j.socscimed.2008.10.025](https://doi.org/10.1016/j.socscimed.2008.10.025)
7. Zimmer Z, Kwong J. Socioeconomic Status and Health among Older Adults in Rural and Urban China. *J Aging Health* 2004; 16: 44-70. doi: [10.1177/0898264303260440](https://doi.org/10.1177/0898264303260440)
8. Yang Q, Dong H. Have health human resources become more equal between rural and urban areas after the new reform? *Int J Health Policy Manag* 2014; 3: 359-60. doi: [10.15171/ijhpm.2014.129](https://doi.org/10.15171/ijhpm.2014.129)
9. Wei Y, Duan Q, Bao G. Analysis on the current status and issues of rural health workforce in Jiangsu province. *Modern Preventive Medicine* 2015; 42: 269-72. [in Chinese]
10. Ren S, Liu L, Jiang Q. An analysis of current situation and problems on Chinese rural health human resources. *Chinese Health Services Management* 2013; 12: 912-4. [in Chinese]
11. Dong X, Proochista A, Xiao X. An investigation of Chinese rural doctors' job quit intention: empirical analysis of income satisfaction, hospital organization satisfaction and doctor-patient relationship. *Economic Review* 2013: 30-9. [in Chinese]
12. Long S. Rural grass-root health professionals in China: current situation, influential factors, and suggestions. *J Med Theo Prac* 2013; 7: 878-9. [in Chinese]
13. Rice T, Rosenau P, Unruh LY. *United States of America: Health System Review. Health System in Transition*, 2013.
14. Matsumoto M, Okayama M, Kajii E. Rural doctors' satisfaction in Japan: a nationwide survey. *Aust J Rural Health* 2004; 12: 40-8. doi: [10.1111/j.1440-1584.2004.tb00567.x](https://doi.org/10.1111/j.1440-1584.2004.tb00567.x)
15. Matsumoto M, Inoue K, Kajii E, akeuchi K. Retention of physicians in rural Japan: concerted efforts of the government, prefectures, municipalities and medical schools. *Rural Remote Health* 2010; 10: 1432.
16. Matsumoto M, Okayama M, Inoue K, Kajii E. Factors associated with rural doctors' intention to continue a rural career: a survey of 3072 doctors in Japan. *Aust J Rural Health* 2005; 13: 219-25.
17. The State Council of China. Suggestions on Establishing the GP System; 2011.
18. Ministry of Health of China, National Development and Reform Commission of China, Ministry of Education of China. A Plan on Building Grass-root Health Workforce that Focusing on General Practitioners; 2010.
19. Ministry of Education of China, Ministry of Health of China. Suggestions on Implementing the Education and Training of Excellent Physicians; 2012.