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China's unique role in the field of global health

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A B S T R A C T

China's participation in global governance, inspired by the 17 United Nations Sustainable Development Goals, is driven by the guiding principle of "building a community of shared future for mankind". China has been promoting the Belt and Road Initiative and South-South Cooperation and has made significant contributions to the prosperity of human beings. Along with the opportunities that globalization brought about such as the World Health Organization and the boom in the economy, global health challenges also emerged. This resulted in certain obstacles for China when it sought to advocate the Belt and Road Initiative and when it attempted to carry out its strategy to address global health issues. What are the emerging challenges for global health? What can China do for global health? Why does global health need China? We tried to address these questions as China's global engagement continues to expand in the new era. This article makes the case for Chinese approaches, including getting involved in public health, being consistent in addressing local conditions, sharing China's experience with handling health services, and strengthening government-led action while being guided by relative policies. China has a lot to offer in the promotion of global health and in overcoming the challenges and risks that this goal currently faces. Thus, China should be considered an inseparable part of global health governance and bilateral health development cooperation.

1. Introduction

Consistent with its emphasis on promoting global health, China follows the norm of "building a community of shared future for mankind", which operates as a guiding principle for China when it participates in global governance, as proposed by Chinese President Xi Jinping, in keeping with the 17 United Nations (UN) Sustainable Development Goals (SDGs) to be achieved by 2030. When the UN Millennium Development Goals (MDGs) were terminated in 2015, 93 UN member states arrived at a consensus and adopted the 17 SDGs and 169 targets at the UN General Assembly in September 2015. The third SDG aims to promote “good health and well-being”. All 13 targets under it are directly related to health. There are two concrete measures that have been proposed to build a community of shared future for mankind in the new era. The first is to advocate the Belt and Road Initiative that seeks to share China's experience and wisdom with the world, to promote global peace and cooperation, and to engage in joint development endeavors. By the end of 2018, China had signed 170 intergovernmental cooperation documents with 122 countries and 29 international organizations, which widened the circle of friends for the Belt and Road Initiative and included parts of Asia, Africa, Europe, Oceania, and Latin America. The second initiative is to continue deepening South-South Cooperation. China attaches great importance and is committed to its cooperation with other developing countries. In September 2015, President Xi announced the establishment of an assistance fund for South-South Cooperation at the 2015 UN Sustainable Development Summit that he hosted at the UN. He also stated that China would continue to increase its investments in least developed countries in the world and set up the Center for International Knowledge on Development to provide new ideas, models, and impetus for South-South Cooperation. During his visit to Africa in December 2015, President Xi proposed the China-Africa Cooperation—“going forward hand in hand, cooperating with a win-win strategy, and developing with each other”—and pledged to provide USD 60 billion to support 10 major cooperation plans across Africa. Thus, China will continue to play its role as a responsible country and work with other countries to create a better future for mankind.

2. Effects of globalization

Globalization is a double-edged sword. When money is allowed to flow freely, the possibility of a global economic crisis becomes higher. The international health system is centered on each nation and state, and health problems encountered by each country are defined by its borders. The resolution of these health problems typically requires cooperation among multiple countries through measures that include customs quarantine and restrictions on the spread of colonial tropical diseases. The health sector in each country is primarily responsible for resolving these problems, and
operates with “sharp divisions” among countries. The World Health Organization (WHO) is undisputedly the leading coordinator of its member countries. With globalization, health risks began to cross national boundaries. As the power of non-state actors rises and the participation of non-health sectors in the health sector expands its scope, diverse global forces cooperate to respond to national and global health problems. The WHO is one of these forces. The prevailing situation has precipitated existing global health initiatives. Effective global health initiatives should: (1) cross borders by promoting global health research aimed at breaking national territorial boundaries and focusing on the health of the global population; (2) be inter-disciplinary by solving these health problems using knowledge from many other disciplines and through interdisciplinary collaboration; and (3) fully motivate various actors by identifying the global forces that need to be motivated to address health problems. Global health emphasizes solutions that utilize a variety of cross-border cooperative actions.

Global health also poses security issues for countries. The rapid movement of people, goods, capital, technology, ideas, and cultures among different countries has resulted in unprecedented development opportunities and enormous public health challenges. Emerging infectious diseases such as Ebola, Middle East Respiratory Syndrome (MERS), and Avian Flu are on the rise and are changing constantly. Traditional infectious diseases such as tuberculosis, malaria, and AIDS are resurging and spreading. As a result of the increasingly serious abuse of antibiotics, the types of multidrug-resistant pathogens have also increased. As people’s behaviors and lifestyles have changed, the chronic non-communicable diseases have become more common in developing countries. The dual burden of infectious and non-communicable diseases is a pressing issue. In 2017, 131 million Chinese citizens went abroad to travel, work, and/or study. Tourist arrivals in China totaled 139 million. The length of China’s inland border-line is over 20,000 km and the border area accounts for about 20% of the country’s total area. Along this line, there are 136 counties spread over 9 provinces of China, and the outer boundary borders more than 10 countries. Along China’s border, the northern border of China has a large population density, while the southern border has a small one. Compared with the border areas outside China, there is greater population density in the northeast and northwest parts of Chinese frontier regions, which is much less in southwest frontier regions. The population number in China’s border areas is very low, and its density of the border areas outside China is even lower than that of inside China’s frontier. Population decline is a major feature of the border areas in recent decades. For example, in the northwestern border areas between China and Russia and between China and Mongolia, the concentration of population decreased. The population decreased significantly in China’s northeastern frontier regions with North Korea, and in the China’s southwestern regions and its neighboring countries.

The Belt and Road Initiative requires the successful implementation of global health, although there are some challenges: (1) the types of infectious diseases vary greatly in countries along the Belt and Road; (2) health monitoring and management for hundreds of thousands of Chinese engineers involved in the Belt and Road infrastructure will be difficult; and (3) the main infrastructure projects are primarily implemented in major cities, ports, and transport hubs. To ensure the security and convenience of operation for global health and the influence and radiation effects of its relative projects, the layouts of funded hospitals, disease control and prevention centers, and medical laboratories should adopt some strategies. China’s economic growth is closely tied to its role in the world. Its health development is expected to have worldwide influence. The investment and scale of China’s global strategy for health will affect the global stakeholders and their diplomatic policies.

3. Chinese approaches

3.1. China’s participation in global health governance

China has always been a strong supporter of and practitioner in the field of global health. Since 1963, China has been sending medical teams to more than 66 developing countries in Africa and other parts of the world. In recent years, China has created the Association of Southeast Asian Nations (ASEAN) Public Health Fund, actively participated in health cooperation efforts between the Asia-Pacific Economic Cooperation (APEC) and the Shanghai Cooperation Organization (SCO), and hosted the first health ministers’ meeting of the BRICS countries (Brazil, Russia, India, China, and South Africa) in 2001. China also contributed to the global fund to the extent of USD 30 million by 2002, hosted a fundraiser for Avian Influenza prevention and control in 2006, and donated USD 10 million to UN agencies toward addressing global health issues. After becoming the sixth largest contributor to the UN in 2013, China continued to increase the extent of its voluntary contributions to the WHO and UNAIDS. China is also a member of the decision-making body and expert advisory group at the WHO, UNAIDS, and other major international organizations.

3.2. Consistency with local conditions

With abundant experience in fundamental medical and healthcare systems, China can be a role model for other developing countries. China’s new rural cooperative medical insurance has expanded significantly. In the past decade, China increased the coverage of basic medical insurance in rural areas from 5% to 95%. Michel Sidibé, the Executive Director of UNAIDS, said that the UN is learning from the experience of the barefoot doctors of China who are a part of the basic medical insurance initiative in China, and that the UN is planning to train 2 million community health workers in Africa by 2020. With a severe shortage of grassroots doctors and the difficulty in retaining talent, the Tanzanian government has shown high interest in the Barefoot Doctors program. China has extensive experience in training Barefoot Doctors. Many rural doctors are local villagers and serve the local area. This model may be useful for other countries that experience a shortage of talent.

3.3. Sharing China’s health service experience

China’s infant mortality rate (IMR) dropped from 28.38% in 2000 to 8.06% in 2017, and the maternal mortality rate dropped from 108.7 per 100,000 persons in 1996 to 21.8 per 100,000 persons in 2015. By 2005, China achieved the global tuberculosis (TB) control target set by WHO, with at least 80% detection rate and successfully treating more than 90% of those patients. China has eliminated lymphatic filariasis, malaria, and schistosomiasis, and implemented a national immunity program; it currently provides free vaccinations to prevent 15 types of diseases that include 4 vaccines for 6 diseases and 5 vaccines for Hepatitis B. All great achievements in public health in China has been supported by solid technologies such as the development of vaccines and drugs, portable ultrasound detection equipment, fetal monitoring equipment, diagnostic reagents, the Shang Ring, Artemisinine, and subepidermal contraceptive implants. Concurrently, China is also a major producer of medicines and medical facilities. With reliable quality and reasonable pricing, medicaments developed and produced in China have drastically supported its public health services. Using only 5% of the world’s health resources, China successfully meets the health demands of 20% of the world’s population.

3.4. Led by the government and guaranteed by policies

In March 2018, during the First Session of the 13th National People’s Congress of China, the proposal to reform the state council and establish the China International Development Cooperation Agency (CIDCA) was passed, which officially opened on April 18, 2018. The agency’s primary responsibilities include: (1) developing foreign aid strategies, plans, and policies; (2) coordinating major foreign aid issues; (3) offering suggestions, promoting reforms of foreign aid models, formulating foreign aid programs
and plans; and (4) supervising and evaluating the implementation of foreign aid projects.20

4. Building responsible departments

Aiming to create a new type of public health aid team and build its capacity by setting up an expert-steering committee, it is very necessary to build a talent pool and offer specialized training. Meanwhile, developing a guideline on international public health development and cooperation is also helpful. Measures include writing official documents on public health in English, developing and managing international public health development cooperation projects, establishing relevant overseas project departments, and respecting the ethics, etiquette, and culture of international public health development and cooperation. In addition, it seeks to ensure the stability of overseas public health work and the implementation of public health projects, improving communication and negotiation skills used in international public health development cooperation, and understanding international public health strategies.

To improve China-Africa Cooperation in public health, there could be a variety of ways, including regularly communicating and discussing relevant topics, short-term training (10 days) and further study (3 months) programs for the Belt and Road countries in Africa, holding seminars, and sending experts to introduce the international public health development aid and enhance capacity to participate.

China's public health aid capacity building projects are solidly supported by the Chinese Center for Disease Control and Prevention (China CDC). First, with the expansion of globalization, world trade, migration, and international exchange activities, global health has become an increasingly important agenda worldwide and for individual countries, as it is closely related to national security, diplomacy, economy and trade, agriculture, and environment. Given the outbreak of emerging and re-emerging communicable diseases in recent years and the public health measures included in many countries' national security strategies, the risk of transnational spread of diseases should also be considered in the course of strategy- and policy-making efforts, training talents, and developing projects.

Second, the world has increasingly high expectations for China, given its peaceful rise and growing power. President Xi has shown a positive attitude and has promoted strong efforts to help African countries and to participate in global health initiatives. These include commitments announced at the 2015 UN General Assembly and the 2015 Summit of the Forum on China-Africa Cooperation to support public health policies and strategies of African countries, and to help them optimize their public health prevention systems. As the infrastructure and capacity of health systems in African countries are weak, especially in West Africa which is still recovering from the Ebola epidemic, the establishment of public health systems and the cultivation of talents become crucial. This provides an opportunity for China to make progress in public health assistance in terms of public health aid, the construction of talent teams, and the establishment of an external supporting environment. It is particularly urgent and necessary to train a team of competent experts and to design a reasonable top structure for cooperative public health projects such as the construction of the African Center for Disease Control and Prevention (Africa CDC) and the establishment of the West African Center for Tropical Disease Research and Control in Sierra Leone.

Third, among the Chinese government's current practices in the field of foreign aid for health, public health aid is still in its early stages. Medical assistance in response to the Ebola outbreak in West Africa in 2014 was the largest foreign public health assistance thus far and revealed numerous problems in policy, management, and fundraising. The process of designing and conducting this project improved drastically and stimulated the completion of China's foreign health aid policies and practices by improving and enriching the policies, mechanisms, teams, practices, and guidelines for public health aid.

Fourth, the China CDC is a leading public health institution in China, and an important technological force in foreign public health assistance. It is responsible for assisting in the Ebola epidemic in West Africa, the construction of the Africa CDC, the technological cooperation with the P3 Laboratory in Sierra Leone, and the construction and prevention of malaria. It has accumulated vast expertise in medical aid. The design and implementation of this project is consistent with the Chinese government's commitments to foreign health assistance and China's strategic development goals.21 However, to meet the needs of public health assistance in the new era, it is necessary to comprehensively and systematically develop and improve the construction of institutions, mechanisms, modes of cooperation, and the capacity of institutions and experts. These initiatives can help solve serious problems and urgent needs that challenge China's exploration of foreign public health assistance in the new era and can help meet the requirements for the construction of public health systems in African countries.

5. Challenges and risks

Global health governance and bilateral health development cooperation continue to face many challenges such as the lack of talent, knowledge, experience, and language (Chinese personnel, institutions, and health officials in embassies abroad lack capacity and experience in handling foreign aid). Therefore, the treatment of foreign aid workers and overseas workers should be heavily monitored to ensure that their children's education and their family's health are promoted, which would encourage more businesses and talents to work and live in Africa. Both state-owned enterprises and private enterprises seek assistance from governments to build hospitals and schools overseas for Chinese citizens in Africa. Only when key issues concerning education and healthcare are addressed properly will overseas workers be able to work steadily and more talent can be attracted to Africa.

Public health cooperation and exchanges are centered on people-to-people ties. This includes foreign health assistance from the government and the multi-level and multi-form cooperation and exchanges that take place between the authorities and the people. Both should be equally emphasized. Comprehensive long-term cooperation and exchanges are part of a grand project for at least the next 10 years. However, people-to-people cooperation and exchanges have more potential and are more comprehensive and sustainable, and should thus be provided sufficient support and attention. For example, after the establishment of diplomatic ties between China and America, there were cooperation and communication between official authorities of the two countries at all levels. However, cooperation and communication between people, institutions, schools, enterprises, and organizations have become broader and deeper. Although the driving power comes from many sources, the main power has come from enterprises as institutions and organizations are able to benefit monetarily. Finding a sustainable motive for people-to-people health cooperation and exchanges is an issue that must be addressed. These types of health cooperation and exchanges should be led by universities, research institutes, academic organizations, national and provincial hospitals, centers for disease control and prevention, and local medical and healthcare organizations. They must include multi-level, multi-form actions that include hosting academic meetings and visits, developing exchange programs for scholars, undergraduates, and postgraduates, establishing scholarship, conducting joint research, and facilitating other kinds of research on communicable diseases. Thus, policies and mechanisms to provide support and services for non-governmental health cooperation and exchanges are urgently needed, including overseas healthcare, accident aid, insurance, danger prevention, customs clearance of materials, tax exemption, and preferential treatment for investment in the medical and health industry.

6. Conclusion

We must recognize the current global health situation and see it from the perspective of politics, diplomacy, and development to meet the
challenges that lie ahead. China will, as always, follow its existing guidelines, work diligently, and promote development.

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Competing interests

The authors declare that they have no competing interests.

References

1. Rao AM. Work together to build a community of shared future for mankind. http://www.xinhuanet.com/english/2017-01/19/c_135994707.htm. Accessed June 05, 2019.
2. D’Alessandro C, Zulu LC. From the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs): Africa in the post-2015 development agenda. A geographical perspective. Afr Geographical Rev 2017;36(1):1-18.
3. Ren MH. Global health and the Belt and Road Initiative. Glob Health J 2018;2(4):1-4.
4. BIET AND ROAD PORTAL. The list of countries that have signed cooperation documents with China on co-construction of Belt and Road Initiative. https://www.yidaliyilu.gov.cn/gbhp/gbhp/77073.htm. Accessed June 5, 2019. (in Chinese).
5. Xinhua News agency. Ministry of Commerce of the People’s Republic of China: China and Africa help each other under the framework of South-South Cooperation. http://www.gov.cn/xinwen/2015-12/16/content_5024869.htm. Accessed June 10, 2019. (in Chinese).
6. Caminero JA, Garcia-Basteiro AL, Rendon A. Multidrug-resistant tuberculosis. Lancet 2019;394(10195):298-299.
7. Conrad MD, Rosenthal PJ. Antimalarial drug resistance in Africa: the calm before the storm? Lancet Infect Dis 2019;19(10):e338-e351.
8. WHO. WHO HIV drug resistance report 2012. https://www.who.int/hiv/pub/drugresistance/report2012/es/. Accessed June 10, 2019.
9. China Tourism Academy. 2017 Statistical of China’s tourism. http://eng.cta.gov.cn/html/2019-4/2019-4-25-13-8-35355.html. Accessed June 10, 2019.
10. Zhang LJ, Zheng Y. Countermeasure studies on development of border trade in transitional China. Innovation 2015(7)(1):37-45 (in Chinese).
11. Xinhua News Agency. China will donate 0 million to the global Avian Influenza prevention and control. China Animal Husbandry Bull 2006;5:32-33 (in Chinese).
12. Information Office of the State Council of the People’s Republic of China. Medical and Health Services in China. http://english.www.gov.cn/archive/white_paper/2014/08/23/content_281474982986476.htm. Accessed June 10, 2019.
13. UNAIDS. Leaders from China and Africa come together to build stronger and healthier communities. https://www.unaids.org/en/resources/presscentre/featurestories/2018/september/leaders-from-china-and-africa-come-together. Accessed June 10, 2019.
14. Yang L, Wang HM. Medical education: what about the barefoot doctors? Lancet 2017;390(10104):1736.
15. UN Inter-agency Group for Child Mortality Estimation. Under-five mortality rate: total. https://childmortality.org/data. Accessed June 10, 2019.
16. Liang J, Li X, Kang C, et al. Maternal mortality ratios in 2852 Chinese counties, 1990–2015, and achievement of Millennium Development Goal 5 in China: a subnational analysis of the Global Burden of Disease Study 2016. Lancet 2019;393(10168):241-252.
17. Dye C, Hossein M, Watt C. Did we reach the 2005 targets for tuberculosis control? Bull World Health Organ 2007;85(5):364-369.
18. Murray CJ, Ortblad KF, Guinovart C, et al. Global, regional and national incidence and death for HIV, tuberculosis and malaria during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet 2014;384(9947):1005-1070.
19. Wu T, Zhang J, Zhao QJ, Xia NS. Vaccination is essential—past, present and future. Sci Sin Vitae 2016;46(6):782-784 (in Chinese).
20. Liao J, Cheng F, Harris A, Xu D. The new face of China’s foreign aid: where do we go from here? Lancet 2018;392(10148):636.
21. Li Y, Wang H, Jin XP, et al. Experiences and challenges in the health protection of medical teams in the Chinese Ebola treatment center, Liberia: a qualitative study. Infect Dis Poverty 2018;7(1):92.