The Belt and Road Initiative and disease control amid the COVID-19 pandemic

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We declare no competing interests

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Highlight

The Belt and Road Initiative (BRI) provides a critical platform to fight COVID-19 through the strengthened collaboration, improved supply chain, elevated digital infrastructure, and more sustainable financing. BRI that integrate health with economic development may offer a new paradigm for building a resilient health system to address disease epidemics.

Main text

Climate change, human activities, and globalization have exposed human beings to increasing threats from emerging infectious diseases and new pathogens.^{1, 2} Some pathogens may cause uncontrollable epidemics and result in devastating calamity as shown by the ongoing COVID-19 pandemic.

How can we be better prepared for epidemics of infectious diseases? As the global health communities have been battling against COVID-19 for more than a year, there emerge at least three important lessons from the health system's perspective. First, a more concerted global collaboration is urgently needed. Second, it is essential to establish and maintain a stable and uninterrupted supply chain and to build digital infrastructure, ensuring that medical supplies reach places in heed and digital technology is applied to enhance disease control. Third, sufficient financing for health should be prioritized to strengthen public health infrastructure and increase countries' capacity to detect, manage, and monitor the disease of interest.

China launched a massive global infrastructure plan --- Belt and Road Initiative (BRI) in 2013, aiming to build a new platform for international cooperation and development with strong

emphases on policy, infrastructure, trade, financial and people-to-people connectivity. More than 160 countries and organizations have joined the initiative. The BRI provides development finance and implements projects to build networks of connectivity through railways, highways, bridges, airports, and ports to boost global, regional, and domestic economic development. BRI consists of six economic corridors including the New Eurasian Land Bridge, the China-Central Asia-West Asia Corridor, the China-Pakistan Corridor, the Bangladesh-China-Myanmar Corridor, the China-Mongolia-Russia Corridor, and the China-Indochina Peninsula Corridor. So far, most investments have been concentrated in about 60 countries along the historical Land Silk Road through Central Asia to Europe and Maritime Silk Road through Southeast Asia to South Asia, Middle East, and Africa. Despite the BRI's focus on economic development and infrastructure investment, its impact on global health is looming.⁸ With the three lessons mentioned above, we examined the BRI from the lens of health systems for disease control.

Since its start, the BRI has placed a particular emphasis on fostering global collaboration. To enhance the global health collaboration, the Chinese government proposed the "Health Silk Road" (HSR) initiative in 2017. A series of regional and inter-regional programs have been launched under HSR, such as training health professionals, establishing disease research and control centers, and forging research and knowledge sharing networks.⁴ Amid the COVID-19 pandemic, many BRI partner countries have used HSR to periodically share information and exchange experiences on the COVID-19 control through virtual conferences, webinars, and meetings. This helped partner countries to develop their pandemic control strategies and measures by building upon China's lessons as the first country to cope with COVID-19. For example, from February to October 2020, eight virtual meetings had been organized among clinical and public health experts from China and Egypt to exchange ideas and information on

the COVID-19 control and discuss COVID-19 clinical treatment guidelines and disease control strategies.⁵ Additionally, medical teams from China were deployed to provide in-person technical support to implement COVID-19 control measures in the early stage of the pandemic. As of May 31 2020, China had sent 29 medical expert teams to 27 countries to assist the control of COVID-19 from both clinical and public health perspectives, ⁶ and had provided medical assistance to more than 150 countries and 10 international organizations in 2020. The assistance ranged from material support such as donation of personal protection equipment (PPE), medical team support, to knowledge exchange and training, and constituted the most intensive and largest-scale emergency humanitarian assistance mission in Chinese history since 1949.⁷ Additionally, China has partnered with at least 16 countries (e.g., Brazîl, Indonesia, Turkey, Egypt, and Jordan) to test the efficacy of COVID-19 vaccines produced by China, and started distributing vaccines in some low- and middle-income countries. Most of such medical diplomacy activities have been packaged under the umbrella of the HSR during the pandemic.

Building a network of connectivity (e.g., roads and railways) in partner countries is one of the major investments of the BRI. In the past years, the investment in roads and railways has significantly reshaped and strengthened the inter-regional, regional and domestic supply chain in some countries.⁸ One of the most important railway networks is the Sino-Europe Railway Network (SERN) that connects dozens of cities in China to those in Europe across 19 countries in Central Asia and Europe (e.g., Kazakhstan, Uzbekistan, Turkmenistan, Russian, Poland, Germany, Netherland, Italy, France, etc.). It was reported that Sino-Europe Railway freight trains had completed more than 10,000 trips from January through October 2020 and exceeded the trips run in 2019 and shipped more than 7.51 million items of medical supplies including personal protective equipment (PPE) with a total of 620 thousand tons to countries in need (e.g., Serbia,

Poland, Italy, France, and Germany).⁹ Globally, China had shipped more than 70.6 billion masks, 340 million protective suits, 115 million pairs of safety glasses, 96.7 thousand ventilators, and 225 million test kits as of June 31, 2020, ⁶ contributing to the global endeavor to combat COVID-19.

Another important investment of BRI has been to enhance partner countries' digital infrastructure. It is evident that the COVID-19 pandemic has boosted the application of digital health for tracing contacts, raising community awareness, risk communication, and providing telemedicine services. However, without stable and wide-range covered network connectivity, the application of digital health would have not been possible. China launched the Digital Silk Road (DSR) Initiative under BRI to work with participating countries to enhance their digital connectivity in 2015. Since then at least 16 countries have signed the Memorandum of Understanding with China to collaborate on DSR projects.¹⁰ Figure 1 shows China's spending on DSR projects in selected countries. In Nigeria, China has been working on expanding and upgrading internet networks in the country and made impressive progress to strengthen its digital infrastructure, together with international development partners such as the World Bank. Mobile cellular subscriptions had increased from 74.1 in 2013 to 88.2 per 100 people in 2019, and the number of secure internet servers increased from 2.2 to 74.8 per one million people in the same period.¹¹ The widely available mobile networks have facilitated the contact tracing and information sharing on COVID-19 in the country¹² and improved the efficiency of the disease control.

<Figure 1 about here>

Perhaps, the most direct impact of the BRI on the health system is its potential to increase financing for health in partner countries. First, the BRI provides a platform to directly finance

COVID-19 responses. The influx of COVID-19 patients into health facilities requires countries to mobilize substantial financial resources to implement disease control activities, such as procuring drugs, lab test kits, and equipment. To support COVID-19 responses, the Asia Infrastructure Investment Bank created the Crisis Recovery Facility and pledged \$13 billion to be used for tackling COVID-19 in 2020-2021. A total of \$1.5 billion was approved and disbursed for 8 countries, including Bangladesh, Turkey, Uzbekistan, Maldives, Indonesia, Georgia, India, and China, to strengthen their health systems for emergency responses to the COVID-19 pandemic in 2020.¹³ Second, the BRI's focus on stimulating economic recovery and growth would ultimately help lift the resilience of the budget for health in partner countries. Despite the gloomy world economy in 2020 due to the pandemic, China's investment in and trade with BRI partner countries have increased substantially. The statistics from the Ministry of Commerce of China shows that China's direct investment in 58 countries along the Land Silk Road and Maritime Silk Road amounted to \$17.79 billion in 2020, with an increase of 18.3%, in comparison with that in 2019. The main investment went to Singapore, Indonesia, Vietnam, Laos, Malaysia, Cambodia, Thailand, and Kazakhstan.¹⁴ It is anticipated that the vibrant economic exchange would contribute to the resilience of the economy and thus the budget for health in the involved countries to absorb health and economic shocks resulting from the pandemic.

Although it is still too early to thoroughly assess the BRI's impact on global health, the BRI offers a platform to cope with disease epidemics through the strengthened collaboration, improved supply chain, elevated digital infrastructure, and more sustainable financing. The pandemic has also highlighted that economic development and population health complement each other. Economic development is unattainable without healthy populations, and vice versa. Programs, such as the BRI, that integrate health with economic development may offer a new paradigm for building a strong and resilient health system to address disease epidemics and health.

Conflict of Interest

The authors declare no conflict of interest

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Author Contributions

WZ conceptualized the manuscript; WZ wrote the first draft, JB, RD, HW, GL critically reviewed the manuscript; all authors contributed to the revision and finalization of the manuscript.

Ethical Approval

Not applicable

References:

1 Ellwanger JH, Kaminski VL, Chies JAB. Emerging infectious disease prevention: Where should we invest our resources and efforts? J Infect Public Health 2019; 12(3):313-316.

2 Liu X, Blackburn TM, Song T, et al. Risks of biological invasion on the Belt and Road. Curr Biol 2019; 29(3):499-505 e4.

3 Hu R, Liu R, Hu N. China's Belt and Road Initiative from a global health perspective. Lancet Glob Health 2017; 5(8):e752-e753. 4 Tang K, Li Z, Li W, Chen L. China's Silk Road and global health. Lancet 2017; 390(10112):2595-2601.

5 China-Arab States Cooperation Forum. Opportunities through the Belt and Road Initative between China and Egypt. Bejing: China: China-Arab States Cooperation Forum. Available online: <u>http://www.chinaarabcf.org/chn/zagx/zaggfzyjzx/t1822530.htm</u> (accessed on Feb 2, 2021). 2020.

6 Institute of International Development Cooperation, Institute of West Asian and African Studies. Commemoration, succession & innovation — 70 years of China's foreign aid and transformation to international development cooperation. Beijing, China: China and International Development Available online: <u>https://res.caidev.org.cn/rc-upload-1610434227796-7-</u> <u>1610434530473.pdf</u> (accessed on Feb 3, 2021). 2020.

7 The State Council Information Office of the People's Republic of China. China's international development cooperation in the new era. Beijing, China: The State Council Information Office of the People's Republic of China. Available online:

http://www.xinhuanet.com/english/download/2021-1-10/20210110.docx (accessed on Feb 4, 2021). 2021.

8 Dossani R, Bouey J, Zhu K. Demystifying the Belt and Road Initiative: A clarification of its key features, objectives and impacts. Santa Monica, CA: RAND Corporation. Available online: <u>https://www.rand.org/pubs/working_papers/WR1338.html</u> (accessed on Jan 19, 2021). 2020.

9 China Railway. Sino-Europe Railway Express update. 2021. Available online: http://www.china-railway.com.cn/xwzx/ywsl/202011/t20201106_110212.html (accessed on Jan 14, 2021). 2020. 10 Council on Foreign Relations. Assessing China's digital silk road initiative. Available online: <u>https://www.cfr.org/china-digital-silk-road/</u> (accessed on Jan 13, 2021). 2020.

11 World Bank. World Development Indicators. Washington, DC: World Bank. Available online: <u>https://databank.worldbank.org/source/world-development-indicators</u> (accessed on Feb 2, 2021). 2021.

12 Ekong I, Chukwu E, Chukwu M. COVID-19 Mobile Positioning Data Contact Tracing and Patient Privacy Regulations: Exploratory Search of Global Response Strategies and the Use of Digital Tools in Nigeria. JMIR Mhealth Uhealth 2020; 8(4):e19139.

13Asian Infrastructure Investment Bank. Our projects. Shanghai, China: AIIB. Availableonline: https://www.aiib.org/en/projects/list/index.html (accessed on Jan 19, 2020). 2020.

14 Ministry of Commerce. Investment in BRI countries from January through November

2020. Available online:

http://www.mofcom.gov.cn/article/tongjiziliao/dgzz/202012/20201203027817.shtml (accessed

on Jan 12, 2021). 2020.

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Figure



Figure 1. China's spending on Digital Silk Road projects by country

Source: Bloomberg Businessweek, 2019. Note: it includes projects completed or initiated from 2012 till 2019. The dollar amount does not reflect the country's totals as it is unavailable for some projects.