

## Commentary

## Beating Neglected Tropical Diseases: For Good and For All

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The term neglected tropical diseases (NTDs) was coined about 15 years ago because this group of diseases is predominantly endemic in tropical and subtropical areas and neglected in research and control compared to HIV/AIDS, tuberculosis, and malaria (1–2). Thus, compared to the early establishment of World Days for “the big three diseases”, namely HIV/AIDS, tuberculosis, and malaria in 1988, 1995, and 2007, respectively, Jan 30, 2020 has just designated as the first World NTDs Day with the slogan of “Beat NTDs: For good. For all” (3).

A group of 20 diseases, most of which are infectious diseases, are included in World Health Organization’s NTDs list (4), but several other diseases are also classified as NTDs in the Global Burden of Diseases Study (5). On the one hand, NTDs cause a high burden of disease at an estimated 17 million disability-adjusted life years (DALYs) in 2017 (5). On the other hand, most of the burden occurs disproportionately in less developed areas. Over 80% of the DALYs (14 million) in 2017 were distributed in sub-Saharan Africa, South Asia, Southeast Asia, and Latin America and Caribbean (5), and NTDs predominantly affect marginalized communities and populations there.

Many determinants drive the endemicity and persistence of NTDs. Affected populations usually live in poor natural environments, which favor the survival of causative agents. Inadequate infrastructure, especially unavailability of clean water and sanitation, promotes the transmission of NTDs. Less economic development leads to high dependence on traditional and low-level animal husbandry, which results in the transmission of many zoonotic NTDs. Unfavorable natural environments and poor economies hinder adequate access to medical resources for diagnosis, treatment, and control. These determinants are all directly and indirectly related to poverty. In addition, endemicity of NTDs there worsens the poverty due to medical cost and loss of productivity and husbandry. Thus, poverty and NTDs establish a vicious cycle, while poverty reduction and control of NTDs have to promote each other mutually (6).

A distinguished example of mutual promotion

between poverty reduction and control of NTDs has been demonstrated in China. At least 11 NTDs have exerted a huge disease burden in China historically (7). For example in the 1950s, over 50% of the population was affected by trachoma, 31.0 million by lymphatic filariasis, 11.6 million by schistosomiasis, 530,000 by visceral leishmaniasis, and a major population by intestinal helminthiases. Then, lymphatic filariasis was declared eliminated as a public health problem in 2007 followed by trachoma in 2015 (7). Cases of schistosomiasis decreased to 37,600 in 2017 and is targeted to be nationally eliminated by 2030. Meanwhile, only several hundred visceral leishmaniasis cases occur each year. The cases with soil-transmitted helminthiases had decreased from 646 million in the early 1990s to 29 million in 2015 and is continuing to decrease (7–8).

The control of NTDs in China steps synchronously with poverty reduction. Since the economic reform and opening up in 1978, the population living under the poverty line has been drastically reduced by over 700 million in China (9). Developed areas in eastern regions of China also show effective control and elimination of many NTDs, while less developed areas in western regions of China are still prevalent with some NTDs. In 2015, the central government called for poverty eradication by 2020 in China (10). By 2018, the poverty rate had decreased to 1.7%, namely a total number of 16.6 million (9), and significant effort is being made to reach the target of zero poverty by 2020. Right now, western areas with a high burden of NTDs are prioritized in the national poverty eradication program. So as further control and elimination of NTDs is promising in China, and will consolidate the achievements of poverty eradication. China has contributed greatly to both global poverty reduction and NTD control as indicators set by the United Nations Sustainable Development Goals (SDGs) (11).

The establishment of World NTDs Day demonstrates global willingness to combat NTDs by further promoting awareness of NTDs and subsequent input of resources to control NTDs. The strong

mutually causal relationship between poverty and NTDs implies high dependence on poverty reduction to combat NTDs and high contribution by the latter to the former. Global control of NTDs impacts the achievement of universal health coverage due to the huge population affected and high burden exerted. During this progress, universal coverage of poverty reduction will be of crucial importance. Both poverty reduction and NTD control need international cooperation to ultimately achieve the United Nations SDGs (11). The Belt and Road Initiative is such a cooperative platform for the global fight against both poverty and NTDs (12).

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