



## Editorial

# Raising awareness for tropical diseases

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Infectious diseases tend to be found primarily in tropical regions or are more frequently encountered in warm, humid environments, making them either more widespread in the tropics or harder to prevent and manage.<sup>1</sup> The poorest people, who usually live in remote rural areas, urban slums, or conflict zones, are the ones who are most impacted by these diseases. The world's poorest population are disproportionately affected by infectious diseases known as neglected tropical diseases, or NTDs. They have been ignored for a long time, initially because to a general contempt for developing nations and more recently as a result of the heavy focus on HIV/AIDS, TB, and malaria.<sup>2</sup> An expanded list of these diseases is available on the PLOS Neglected Tropical Diseases website. The World Health Organization recently developed a list of over 17 NTDs. Approximately 85% of the illness burden linked to NTD is caused by helminth infections. Hookworm is the leading cause of anemia in 40–50 million school-aged children and over seven million pregnant women worldwide, and it infects about half of the poorest people in Sub-Saharan Africa.<sup>3</sup> Schistosomiasis is the second most prevalent neglected tropical disease in the world, with 192 million cases. It may be associated with an increased risk of HIV/AIDS horizontal transmission and makes up 93% of all cases.<sup>4</sup>

Tropical regions of the world have historically been more affected by infectious diseases than the temperate

world. Infectious diseases spread in these regions due to the primary biological and environmental elements that sustain high levels of pathogen, vector, and host biodiversity, as well as the societal characteristics that reduce the burden of disease management.<sup>5</sup> As everyone is aware, diseases like HIV/AIDS, malaria, and tuberculosis are among the leading causes of death, morbidity, and burden worldwide. It has been emphasized that they negatively damage the social and economic development of the nations that are most affected.<sup>6</sup>

It is evident that these "large three" contribute to millions of deaths and Disability-Adjusted Life Years each year, which exacerbates poverty. Interestingly, however, ten years ago, two brief evaluations of science, medicine, and society published in high-profile publications, as well as a comprehensive 25-year review of drug development activities, still considered HIV/AIDS, TB, and malaria neglected diseases.<sup>7</sup> The phrase "tropical diseases," which has been used in medicine since the 1800s. It began at an unspecified point in time and grew increasingly cohesive when bacteria were identified as the underlying causes of diseases and their modes of transmission were elucidated. The Caribbean and the Pacific regions were subjected to colonization by England, France, and several other minor allies, including the United States. This colonization led to the discovery of a new world rich in valuable resources, while simultaneously introducing both familiar and unfamiliar diseases. The classification of tropical diseases includes all forms of infectious and non-infectious

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ailments, genetic disorders, and conditions arising from nutritional deficiencies or environmental influences such as heat, humidity, and altitude, prevalent in areas situated between and surrounding the tropics of Cancer and Capricorn.<sup>8</sup> Neglected tropical diseases (NTDs) refer to a category of infections caused by bacteria, parasites, viruses, and fungi that predominantly occur in tropical and subtropical regions, where they are closely linked to poverty. These diseases flourish in environments such as rural and remote areas, informal settlements, or regions afflicted by violence, where individuals live in proximity to animals and vectors of infectious diseases, while having limited access to healthcare, clean water, and adequate sanitation.<sup>9</sup> Previous studies indicate that neglected tropical diseases (NTDs) are prevalent among impoverished populations across Sub-Saharan Africa. Notable NTDs, which together impact over 500 million individuals, include infections from soil-transmitted helminths (STH), trachoma, lymphatic filariasis (LF), schistosomiasis, and onchocerciasis. There exists a notable variety in clinical manifestations, diagnostic methods, and strategies for treatment, prevention, and control. However, two significant commonalities emerge when discussing these diseases as "neglected tropical diseases." Firstly, these conditions are predominantly found in tropical regions, with poverty being the primary factor contributing to their prevalence in warmer climates, particularly among displaced populations near the poles, in isolated rural areas, and within urban slums. Secondly, these diseases have historically received insufficient attention from funders, researchers, and policymakers until relatively recently.<sup>10</sup>

In the immediate future, it is clear that global warming alone will not directly cause epidemic situations; however, it contributes to the emergence and dissemination of various diseases across the globe. The category of neglected tropical diseases encompasses over 40 conditions caused by helminths, protozoa, bacteria, viruses, fungi, and ectoparasites, a significant increase from the initial 13 to 15 recognized diseases.<sup>11</sup> Our comprehension of the epidemiology and treatment options for many neglected tropical diseases remains critically insufficient, highlighting the need for increased funding to foster innovative research that can lead to the creation of new, field-tested methodologies and tools. There is a pressing requirement for greater emphasis on the prevention and management of neglected tropical diseases than what is currently being prioritized. A human-rights-based approach to intervention must ensure the availability and accessibility of medical care, safe housing and water, sufficient nutrition, education, equal opportunities for all genders, and an environment free from discrimination. Notably, progress has been made in combating neglected tropical diseases. To bolster efforts aimed at their eradication, a coordinated strategy

is essential. Successful control programs often involve identifying and addressing health system challenges at a national level while securing community engagement as a vital element.<sup>12</sup>


### Conflict of Interest

None.

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