

EDITORIAL

Mpox and Neglected Tropical Diseases in Pakistan: A Growing Planetary Health Concern

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Aug 14, 2024, was the day the World Health Organization (WHO) announced, mpox (previously known as monkeypox) as a Public Health Emergency of International Concern (PHEIC-2024).¹ While mpox undoubtedly remains a global public health problem, neglected tropical diseases (NTDs) such as dengue, chikungunya, rabies, snake bite, and leishmaniasis, listed among the 20 NTDs by WHO, predominate in Pakistan. The fragile health system of Pakistan, overwhelmed for the past decades by infectious diseases such as tuberculosis and malaria, further worsened due to the COVID-19 pandemic. The synchronal rise of mpox, dengue, and chikungunya infections is posing increasing concerns for the population and healthcare system further straining the economy's capacity to respond effectively.

Mpox is a zoonotic infection caused by the monkeypox virus (MPVX), an orthopoxvirus in the same genus as the variola virus, which is the causative agent of smallpox and, vaccinia virus (the virus used in the smallpox vaccine).¹ Mpox has two clades, Clade I (Central Africa) and Clade II (West Africa). Clade I, which was recently reported from Sweden, is more contagious and has a higher fatality rate (10%), raising global health concerns.¹ The figures show that the global mpox count in 2024 surpassed last year's with 15,600 cases and 537 deaths.¹ Integrated Disease Surveillance & Response (IDSR), NIH, Islamabad, Pakistan has recorded a total of 14 travel related cases including one death (co-infection of HIV). All confirmed cases in Pakistan have been identified as the Clade IIb strain, and no evidence of local transmission has been documented. A worrying aspect of mpox is that no antiviral treatment is currently available for mpox and the initial clinical trials of the antiviral 'Tecovirimat' are not very promising against Clade IIb.¹ Moreover, controlling mpox infections in the younger age groups is particularly challenging as vaccination is not recommended for individuals that are 15 and under. This poses a grave concern as mpox infection is known to cause higher mortality in children younger than 15 as was reported in the Democratic Republic of Congo. Pakistan currently doesn't have the availability of the mpox vaccine, making it inaccessible for those in need.

Another endemic NTD that accounts for a huge burden of disease in Pakistan is rabies. Human infections are mostly due to dog bites and cases are diagnosed on clinical grounds only. Pakistan ranks in the top five countries globally in rabies-related mortality, with an estimated 2700-5000 deaths attributed to rabies in Pakistan.

Dengue fever is yet another daunting health threat in Pakistan. About half of the world's population is at risk of dengue with an estimated 100–400 million infections annually.² In 2024, dengue cases surged globally, with the WHO reporting over 7.6 million cases by April, including 3.4 million confirmed cases, 16,000 severe cases, and more than 3,000 deaths. Re-infection with a different dengue serotype increases the risk of severe illness, adding to the complexity of the outbreak.² Pakistan faces a critical public health emergency, with 2,800 new dengue cases reported in September 2024, mostly in Baluchistan. Since May 2024, Karachi has experienced a surge in mosquito-borne infections, including dengue and chikungunya. The situation is being exacerbated by inadequate sanitation, optimal monsoon weather for mosquito breeding, prolonged heat waves, inadequate vector control measures, as well as contributing factors such as climate change, increased vector abundance (primarily *Aedes aegypti* and *Aedes albopictus* mosquitoes), and population movements.^{2,3} Both diseases are transmitted by *Aedes* mosquitoes, also vectors for Zika and yellow fever. Thankfully, despite the presence of the vector, Pakistan remains free of yellow fever and Zika cases.

Strengthening surveillance systems and training healthcare workers to ensure timely identification and

management of mpox and other NTDs are crucial. The interconnected efforts for healthy ecosystems and communities are essential for resilience in the face of environmental challenges. By actively addressing climate change, we can enhance planetary health and ensure a sustainable future for all. Collaborative initiatives that involve governments, communities, and individuals will be crucial in achieving these goals. Strong advocacy and resource mobilization at national and global levels are essential to secure funding for outbreak preparedness, support the stockpiling of medical supplies, and reinforce public health measures. A multisectoral approach is required to tackle the rise in mpox and NTDs which remains a persistent challenge not only for Pakistan but also for planetary health. Despite the grim circumstances, there are positive breakthroughs, such as the recent success in eliminating trachoma, a long-standing NTD in Pakistan. This is a promising development for Pakistan, the 19th country to reach this milestone. The trachoma elimination reflects the government's commitment, WHO's support, and the contributions of partners and communities. Eliminating one disease is an achievement that reinforces our optimism in working towards controlling NTDs in the future for the well-being of our planet and all its inhabitants.

Editor-in-Chief

How to cite this: Alamgir W, Shan H. Mpox and Neglected Tropical Diseases in Pakistan: A Growing Planetary Health Concern. *Life and Science*. 2024; 5(4): 431-432. doi: <http://doi.org/10.37185/LnS.1.1.835>

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