

## EDITORIAL

# Mpox: A zoonotic threat that demands a One Health response

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As the world grapples with yet another zoonotic disease in the form of mpox (formerly known as monkeypox), it has become increasingly clear that managing such outbreaks requires a holistic approach that acknowledges the interconnectedness of humans, animals, and the environment. The One Health framework offers a powerful strategy for containing mpox and preventing future zoonotic threats.

Mpox is caused by the monkeypox virus, a member of the Orthopoxvirus genus. The disease has gained global attention due to outbreaks in several regions, particularly the Democratic Republic of the Congo (DRC) and other African countries, where two virus clades (Ia and Ib) are spreading. Mpox is primarily transmitted through close contact with infected individuals or animals, and in some cases through contaminated objects. The symptoms typically include rash, fever, muscle aches, and swollen lymph nodes, with some cases leading to severe complications like pneumonia and encephalitis. Vaccines are available and recommended for high-risk groups, though there is no definitive antiviral treatment yet.

The recent upsurge of mpox cases, including the clade Ib strain that is spreading through sexual networks, has prompted the World Health Organization (WHO) to declare a Public

Health Emergency of International Concern (PHEIC) in August 2024. Over 120 countries have reported cases since 2022, with over 100,000 confirmed cases and 220 deaths by mid-2024. WHO is focusing on increasing access to vaccines, strengthening global surveillance, and addressing stigma and discrimination associated with the disease, particularly among affected communities such as men who have sex with men (1).

**THE ZOOONOTIC ORIGINS OF MPOX**

Mpox is a viral disease that originated in animals and primarily spreads to humans through direct contact with infected animals such as rodents or primates. While the disease was initially confined to specific regions in Africa, increasing global interconnectedness and environmental changes have allowed the virus to travel far beyond its original geographic confines. This scenario underscores the importance of the One Health approach, which recognizes that the health of humans, animals, and ecosystems are deeply interwoven (1, 2).

**ONE HEALTH: A HOLISTIC FRAMEWORK**

One Health encourages collaboration across disciplines—including human medicine, veterinary medicine, environmental science,

and public health—to prevent and manage zoonotic diseases (3). In the context of mpox, this means:

1. **Surveillance in Animal Populations:** Monitoring wildlife for viral outbreaks can provide early warning signs of diseases like mpox before they spread to human populations. Such surveillance would require collaboration between wildlife conservationists, veterinarians, and public health authorities. This approach was successfully demonstrated in managing Nipah virus outbreaks in India, where rigorous wildlife monitoring helped contain the disease.
2. **Understanding Environmental Drivers:** Environmental factors such as deforestation and climate change are key drivers in the spread of zoonotic diseases. In the case of mpox, human encroachment into animal habitats has increased human-animal interactions, providing more opportunities for viral transmission. A One Health response must address these environmental changes to reduce the risk of future outbreaks. Conservation efforts should be integrated with public health strategies, as the degradation of ecosystems is a key catalyst for zoonotic spillover events.
3. **Cross-Sectoral Collaboration:** Mpox provides a stark reminder of the need for interdisciplinary collaboration. Just as the Nipah virus outbreak in India involved coordination between public health authorities, wildlife specialists, and local communities, managing mpox demands a similar integrated response. This collaborative effort can lead to more effective containment measures, better disease surveillance, and faster identification of animal reservoirs (4).

#### THE ROLE OF PUBLIC HEALTH AND EDUCATION

One of the central pillars of the One Health framework is the dissemination of accurate, actionable information to both professionals and the public. Given the fear and misinformation that often accompany outbreaks, public education campaigns are crucial. Communities must be made aware of

zoonotic risks, how to avoid exposure, and the importance of seeking timely medical care when symptoms arise. Information campaigns about reducing contact with wildlife, controlling animal reservoirs, and preventing human-to-human transmission are vital in curbing mpox (5).

#### GLOBAL HEALTH GOVERNANCE AND POLICY

Implementing a One Health approach for mpox also calls for robust policy frameworks at both the national and international levels. The rapid spread of mpox to previously unaffected regions is a reminder that health challenges cannot be tackled in isolation. Countries must collaborate to strengthen international health regulations, surveillance systems, and response strategies. Policy changes should incentivize cross-sectoral collaboration, promote environmental conservation, and enhance preparedness for future zoonotic outbreaks (6).

#### ONE HEALTH AS A SOLUTION TO FUTURE ZOOONOTIC THREATS

Mpox is not an isolated issue. As long as human activity continues to disrupt natural ecosystems and increase contact with wildlife, the world will face similar outbreaks in the future. The One Health approach provides an integrated solution by addressing the root causes of zoonotic diseases, from environmental degradation to insufficient surveillance in animal populations. As mpox continues to spread, adopting this holistic strategy is essential not just for controlling the current outbreak, but for preventing the next zoonotic threat.

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