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The 2026 Bundibugyo Ebola Outbreak: A Warning for Global Preparedness for Future Epidemics

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Dear Editor,

The 2026 *Bundibugyo Ebolavirus* (BDBV) outbreak has once again demonstrated that the threat of emerging diseases remains a major global health challenge. The outbreak, first detected in the Democratic Republic of Congo (DRC) and spread to Uganda, is not only a regional crisis but also a test of the world's preparedness for pathogens with epidemic potential. Unlike *Zaire Ebolavirus* (EBOV), which has benefited from effective vaccines and treatments in recent years, BDBV still lacks a licensed vaccine or specific treatment[1]. As of June 6, a total of 515 laboratory-confirmed cases and 91 deaths have been reported in DRC, while Uganda has reported 19 laboratory-confirmed cases and two deaths. The occurrence of unexplained deaths among both the community and healthcare workers, along with prior reports of an unidentified hemorrhagic fever, suggest that the outbreak has been likely originated in March 2026 or even earlier. Accordingly, the virus is believed to have spread unnoticed for several weeks before being identified through genomic sequencing in mid-May 2026[2].

The resurgence of Ebola in Africa results from a complex interaction of environmental, social, and political factors. Deforestation, the development of mining activities, the expansion of agriculture, and increased human contact with wildlife have elevated the likelihood of spillovers from wildlife reservoirs, particularly fruit bats, which are considered the most likely natural hosts of ebolaviruses. Moreover, weak disease surveillance systems and limited access to health services have delayed the identification of early cases. The similarity of the initial symptoms of Ebola to other endemic diseases in the region, such as malaria, makes early diagnosis difficult and provides ample opportunity for transmission to spread. Insecurity, misinformation, attacks on healthcare facilities, and armed conflict in the region have also posed serious challenges to the implementation of contact tracing programs and rapid response to the epidemic[3,4].

One of the most critical challenges highlighted by this outbreak is the weakness of diagnostic capacities in the affected areas. The initial 2007 outbreak of BDBV proved that delayed lab confirmation paralyzes public health responses[5]. Now, dealing with a much larger outbreak in 2026, the persistence of this challenge highlights a dangerous failure to invest in diagnostic infrastructure over the last 19 years. Many health facilities do not have access to molecular laboratories, rapid sample transport systems, and biosafety infrastructure[6]. These limitations delay the diagnosis and isolation of patients, thus perpetuating disease transmission. Investment in the development of mobile laboratories, rapid point-of-care diagnostic tests, and digital reporting systems can dramatically reduce the time to diagnosis and response to an outbreak. The BDBV outbreak shows that laboratory preparedness must be considered an essential part of global health security. Furthermore, the early detection of emerging pathogens depends not only on diagnostic technologies but also on the expertise of local scientists who are able to recognize unusual epidemiological and laboratory

patterns. During the current outbreak, suspected Ebola cases initially tested negative using common diagnostic tests (designed for *Zaire Ebola Virus)*, which delayed the identification of the BDBV. Specifically, field-based diagnostics in Bunia were calibrated exclusively to detect the EBOV responsible for recent Congolese outbreaks. Consequently, patient samples collected throughout late April and early May yielded negative results, requiring cross-country transport to Kinshasa for genomic confirmation[2]. This experience revealed a major vulnerability in outbreak preparedness: diagnostic tools designed for known threats may be ineffective in detecting less common or unexpected pathogens. Therefore, strengthening local scientific capacities, developing genomic surveillance, and expanding access to flexible and adaptable diagnostic platforms should be considered as a top priority for global health security.

The lack of a licensed vaccine for BDBV was one of the most significant challenges of this epidemic. While the rVSV-ZEBOV vaccine has played a significant role in controlling *Zaire ebolavirus*, there is no licensed vaccine for BDBV. In response to this outbreak, efforts to develop mRNA-based vaccines, adenoviral vectors, rVSV-based vaccines, and multipotent vaccines have been accelerated[7]. However, the experience of this epidemic has shown that the development of medical products for rare diseases continues to face financial and investment constraints. This challenge highlights the need for sustained support from governments and international institutions for research and development of pathogens with epidemic potential.

The 2026 Bundibugyo outbreak provides several key lessons for the global community. First, early detection and rapid diagnosis are the most important factors in containing the epidemic. The 19-year interval between the 2007 BDBV outbreak and the 2026 outbreak underscores persistent shortcomings in investment toward decentralized, pan-ebolavirus diagnostic infrastructure, with diagnostic delays hindering timely outbreak identification in both instances. Second, the trust and active participation of local communities are as important as medical interventions. Additionally, the rapid cross-border transmission dynamics between the DRC and Uganda demonstrate that blanket travel restrictions and border closures are impractical. As communities in the Great Lakes region routinely cross national borders for trade and healthcare, coordinated regional surveillance and timely information sharing are likely to be more effective than broad border closures in mitigating disease transmission[8]. Third, the protection of health workers must be a priority in preparedness plans. Fourth, a "One Health" approach is essential for simultaneous monitoring of humans, animals, and the environment. Although BDBV is not a new pathogen, the lack of licensed medical interventions and limited investment in research reflect many of the vulnerabilities associated with the concept of "Disease X."[9]. Unlike *Zaire Ebola Virus*, for which licensed vaccines and monoclonal antibody therapies are available, BDBV forces public health responses to rely almost entirely on non-pharmaceutical interventions such as isolation and infection control[10]. This gap reflects the structural inequity in global health research and development funding, with pathogens affecting resource-limited regions receiving insufficient attention until they spark an international emergency[2]. The BDBV outbreak proves that global epidemic preparedness cannot be pathogen-selective; it requires proactive investment in broad-spectrum countermeasures and resilient frontline health systems[8].

In conclusion, the 2026 BDBV outbreak is a serious wake-up call for the global health system. The epidemic revealed that gaps in surveillance systems, diagnostic capacities, vaccine development, and preparedness for emerging diseases persist. Investing in health infrastructure, developing Pan-Ebolavirus vaccines, strengthening laboratories, expanding the One-Health approach, and supporting research on emerging zoonotic pathogens must be at the top of global health security priorities. Otherwise, the BDBV outbreak may be just a prelude to larger crises to come.

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Authors' contributions
MSV conceived the original idea and drafted the initial version of the manuscript; MHPV and TJ critically revised the manuscript for scientific content and clarity of writing.

Data availability

All relevant data can be found within the manuscript.

Competing interests

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REFERENCES

1. Lupascu D, Iacob AT, Apotrosoaei M, Vasincu I-M, Lupascu F-G, Chirliu O-M, et al. Achievements and challenges in therapy and vaccines development of viral hemorrhagic fevers: An up-to-date review. Pharmaceutics. 2026;18(4):426.
2. Phelan AL, Nuzzo JB, Gostin LO. The PHEIC for Ebola disease caused by Bundibugyo virus: An inflection point for solidarity and health equity. Lancet. 2026;407(10545):2264-7.
3. Ohimain EI. Ecology of Ebolaviruses. Current Opinion in Pharmacology. 2021;60:66–71.
4. Zomahoun DL, Boyd MA, Honein MA, Montgomery JM, Zielinski-Gutierrez E, Meites E, et al. Notes from the field: Outbreak of Ebola disease caused by Bundibugyo virus—democratic republic of the Congo and Uganda, May 2026. MMWR Morb Mortal Wkly Rep. 2026;75(22):293-4.
5. Wamala JF, Lukwago L, Malimbo M, Nguku P, Yoti Z, Musenero M, et al. Ebola hemorrhagic fever associated with novel virus strain, Uganda, 2007–2008. Emerg Infect Dis. 2010;16(7):1087-92.
6. Karim SA, Mahomed S, Lewis L, Karim SSA. Urgent need for a reliable rapid diagnostic test for the Ebola epidemic caused by Bundibugyo virus in Africa. Lancet. 2026;407(10546):2346-8.
7. Kopp K. Bundibugyo virus disease: Diagnostics and medical countermeasures for a neglected Ebolavirus. 2026;18(7):775.
8. Ngongo N, Fallah MP, Dereje N, Boum Y, Kaseya J. Bundibugyo Ebola without vaccines or therapeutics: Why public health fundamentals matter more than border closures. Nat Med. 2026:1-2.
9. Iserson KV. The next pandemic: Prepare for “Disease X”. West J Emerg Med. 2020;21:756-8.
10. Nachega JB, Muyembe-Tamfum J-J, Zumla A. Therapeutic and prophylactic strategies for Ebola caused by Bundibugyo virus. Nat Rev Drug Discov. 2026;25(7):495-6.