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Editorial

Ethiopia's first Marburg virus outbreak — Implications for emerging hemorrhagic fevers in Africa

Marburg virus (MARV), belonging to the *Filoviridae* family, causes Marburg virus disease (MVD), a severe and frequently fatal viral hemorrhagic fever first identified in 1967 during laboratory-associated outbreaks in Germany and former Yugoslavia [1]. The natural reservoir is the Egyptian fruit bat (*Rousettus aegyptiacus*), and initial spillover to humans occurs through exposure to bat-inhabited caves or mines [2]. Subsequent human-to-human transmission occurs through direct contact with infected bodily fluids, contaminated fomites, or via unsafe burial practices (Fig. 1) [3].

Clinical illness begins abruptly with high fever, headache, and malaise. Within several days, patients develop profuse diarrhea, vomiting, abdominal pain, and in many cases hemorrhagic manifestations and shock [4]. Case-fatality rates range from 24 % to 88 % depending on viral strain and quality of supportive care [5].

There are currently no licensed treatments or vaccines for MVD, although multiple investigational countermeasures—including vesicular stomatitis virus (VSV)-based vaccine expressing the MARV glycoprotein (VSV-MARV) the chimpanzee adenovirus type 3-vectored Marburg virus (cAd3-Marburg) vaccine candidates, are undergoing evaluation [6,7].

Historically, outbreaks have been documented in Angola, Uganda, Kenya, Democratic Republic of the Congo, Guinea, Ghana, and Europe among travelers exposed in Africa, thus showing the pathogen's East and Central African ecology [8–10].

On November 14, 2025, Ethiopia confirmed its first-ever MVD outbreak in the Omo region [11]. The Ethiopia Public Health Institute, supported by the World Health Organization (WHO) and Africa Centers for Disease Control (CDC), initiated case isolation, contact tracing, community risk communication, and laboratory diagnostics scale-up. Whole genome sequencing identified the virus as belonging to a lineage similar to strains previously circulating in East Africa. This represents a major public-health event: the first known introduction of MVD into Ethiopia, a country not previously associated with filovirus outbreaks.

The recent Ethiopia Marburg virus outbreak poses significant regional and cross-border public health risks due to its high fatality rate and potential for rapid transmission. Key challenges include controlling the spread in hard-to-reach communities, strengthening healthcare capacity, and ensuring swift detection and case management to prevent wider outbreaks.

Surveillance and diagnostics systems are central to this outbreak: rapid laboratory confirmation demonstrates strengthened capacity to detect high-risk pathogens, yet the emergence of Marburg virus in a previously unaffected country points to either recent introduction or missed historical spillover events. Sustained sentinel surveillance, especially in bat-dense ecological zones, is therefore essential to detect new cases early and prevent wider spread.

Zoonotic spillover risks are heightened by agricultural expansion, deforestation, and increased human–bat contact in Omo, highlights the need for a One Health investigation that maps bat roosts, human exposure patterns, and ecological drivers, as this integrated approach is of paramount importance [12]. Health system preparedness remains constrained: although Ethiopia rapidly mobilized isolation facilities, specialized hemorrhagic fever treatment units are limited, making scale-up of personal protective equipment (PPE) supplies, training, and clinical protocols essential. Regional spread risk is significant because Jinka lies close to the borders with South Sudan and Kenya, so coordinated surveillance and joint outbreak response mechanisms through Africa CDC and WHO are required to mitigate cross-border transmission. Countermeasure research is urgently needed, as the absence of approved vaccines or antivirals highlights the importance of accelerated trials and the use of Ethiopia's outbreak to generate clinical, genomic, and immunologic data. Community engagement must prioritize locally adapted risk communication to prevent stigma, encourage early reporting, and promote safe caregiving and burial practices through culturally grounded strategies.

In conclusion, this first Marburg virus outbreak in Ethiopia marks a pivotal shift in the geography of filovirus threats, demonstrating how high-consequence pathogens are now encroaching into new ecological and health system settings. It exposes critical gaps in early warning surveillance, health-system preparedness, and the availability of medical countermeasures, particularly along porous borders with fragile neighboring systems.

Going forward, coordinated regional action, strengthened One Health research into bat–human interfaces, and sustained investment in clinical readiness—from isolation capacity and PPE to trained teams and diagnostics—are urgently needed. At the same time, accelerating development and equitable access pathways for Marburg vaccines and therapeutics, informed by clinical and genomic data generated during this outbreak, will be essential to prevent future events from escalating into wider regional crises.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. Dr J. A. Al-Tawfiq is an associate editor of NMNI.

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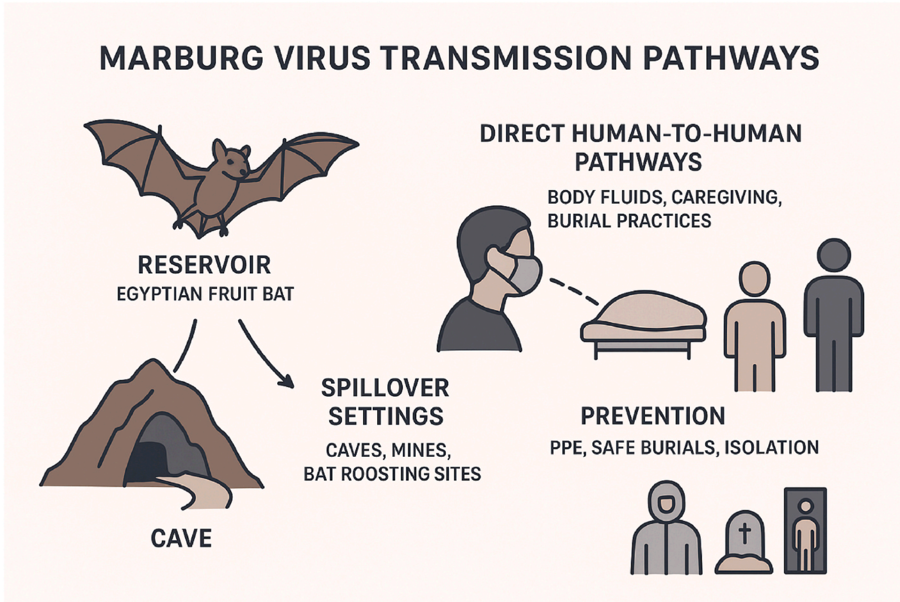

Fig. 1. A simplified filovirus transmission dynamic
*PPE: personal protective equipment.

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