

Marburg Virus Disease Outbreak, Rwanda

October 2024

Overview:

On 27 September 2024, the Rwanda Ministry of Health declared an outbreak of Marburg virus disease (MVD) following reports of laboratory-confirmed MVD cases in the country. This is the first-ever MVD outbreak to be reported in Rwanda. Twenty-six laboratory-confirmed cases and six deaths were initially reported from seven of the 30 districts in Rwanda (1). Since then, additional cases continue to be reported. As of 19 October 2024, 62 cases, including 15 deaths (CFR 24.2%, 15/62) and 44 recoveries, have been reported, while three are in isolation and receiving treatment (2). Cases have been reported across eight districts, with the majority in three districts within Kigali. Most cases (>80%) are healthcare workers emanating from a cluster in two healthcare facilities in Kigali (3). To date, no evidence of community transmission has been identified.

MVD is a contagious zoonotic disease with a high case fatality rate of 24 - 88% (4). The transmission of Marburg virus begins with zoonotic spillover; humans can contract the Marburg virus when they come in close contact with *Rousettus* bats that carry the virus and serve as natural reservoir. Other species of bats and other animals such as primates may also play a role in the natural ecological cycle of the virus and may pose risk for exposure, although this is not fully understood yet. Subsequent human-to-human transmission occurs through direct contact with infected blood, bodily fluids or contaminated surfaces and materials (such as patient bedding or clothes). The incubation period ranges from two to 21 days. Early symptoms include fever, malaise, myalgia, fatigue, severe headache, nausea, vomiting, and severe diarrhoea. Haemorrhaging may appear in severe cases on days 5 to 8 from symptoms onset, and fatal cases often bleed from multiple body areas and mucosal surfaces. Hemorrhaging is not always present. Currently, there is no approved treatment or registered vaccine for MVD, and patient care is limited to symptomatic and supportive management.

MVD was first identified in 1967 during two major outbreaks in Marburg and Frankfurt, Germany, from handling imported monkeys from Africa and Belgrade, Yugoslavia. Since then, several MVD outbreaks have been reported, primarily in sub-Saharan Africa, with previous occurrences in South Africa (ex-Zimbabwe), Kenya, the Democratic Republic of the Congo (DRC), Angola, Uganda, Guinea, and Ghana. More recently, from February to June 2023, MVD outbreaks were reported in Equatorial Guinea and Tanzania (5). The MVD outbreak in South Africa occurred in 1975, involving two travellers (who toured Zimbabwe) and a healthcare worker (5, 6).

Public health response activities:

With support from partners and the World Health Organization (WHO), the Rwandan government has instituted various public health response measures to contain and prevent further spread. A public hotline to encourage early reporting of symptoms has been

established. Investigations are ongoing to determine the origin of the infection and magnitude of the outbreak. Contact tracing is implemented, and by 14 October 2024, more than 800 contacts were identified and monitored (3). Risk communication and community engagement strategies have been strengthened to inform the public, mobilise communities, and counter misinformation. Health facilities have reinforced water, sanitation, and hygiene (WASH) measures alongside infection prevention and control (IPC) protocols. Vaccination of healthcare workers and contacts with the experimental Marburg vaccine has commenced, with more than 1 000 vaccine doses administered by 19 October 2024 (2). In addition, the WHO is working with neighbouring countries, including the DRC, Burundi, Kenya, Tanzania, and Uganda, to assess their operational readiness to respond to the MVD outbreak.

Current risk assessment and travel advice

The WHO designated the outbreak as a Grade 3 emergency, the highest classification level within its Emergency Response Framework (7). The WHO considers the public health risk of MVD to be very high at the national level, high at the regional level, and low at the global level. However, risk assessment is ongoing and may be revised as more information becomes available. Based on the current risk assessment, WHO advises against any travel and trade restrictions with Rwanda (7).

Travellers are encouraged to take precautions by avoiding contact with symptomatic individuals, blood, body fluids, and potential animal sources of the virus, as well as nonessential visits to health facilities in outbreak areas. Furthermore, travellers must monitor their health for symptoms of MVD for the duration of their stay in Rwanda and 21 days after departing.

Situation in South Africa

As of 19 October 2024, there have been no suspected or confirmed MVD cases in South Africa associated with the current outbreak in Rwanda. However, given ongoing transmission in Rwanda, healthcare workers should have a high index of suspicion for suspected MVD cases as per the [case definition](#). Additionally, it is important to exclude malaria in cases of febrile illness in returning travellers as part of the differential diagnosis.

Should a suspected MVD case be identified (as per the [case definition](#)), a request for testing with a detailed clinical, travel, and exposure history should be directed to the NICD Hotline at 0800 212 552 (a 24-hour service for healthcare professionals only). Testing for viral haemorrhagic fever viruses (including Marburg virus) in South Africa is only available at the NICD. Viral haemorrhagic fevers, including MVD, are Category I notifiable medical conditions in South Africa and require notification within 24 hours of clinical suspicion. Visit the NICD website (www.nicd.ac.za) for more information on notifiable medical conditions and how to notify cases.

References:

1. WHO press release on announcement by Rwanda, 28 September 2024. Rwanda reports first-ever Marburg virus disease outbreak, with 26 cases confirmed. Available at: <https://www.afro.who.int/countries/rwanda/news/rwanda-reports-first-ever-marburg-virus-disease-outbreak-26-cases-confirmed>
2. Rwanda Biomedical Centre (19 October 2024). Marburg Virus Information. Available at: <https://rbc.gov.rw/marburg/>

3. World Health Organization (18 October 2024). Disease Outbreak News; Marburg virus disease in Rwanda. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/2024-DON540>
4. World Health Organization. Marburg Virus Disease [Internet]. [cited 2024 Oct 3]. Available from: https://www.who.int/health-topics/marburg-virus-disease#tab=tab_1
5. National Institute of Communicable Diseases. Marburg Virus Disease Frequently Asked Questions [Internet]. 2024 [cited 2024 Oct 2]. p. 1–5. Available from: https://www.nicd.ac.za/wp-content/uploads/2024/10/MVDFAQS_2024.pdf
6. Gear JS, Cassel GA, Gear AJ, Trappler B, Clausen L, Meyers AM, Kew MC, Bothwell TH, Sher R, Miller GB, Schneider J, Koornhof HJ, Gomperts ED, Isaäcson M, Gear JH. Outbreak of Marburg virus disease in Johannesburg. Br Med J. 1975 Nov 29;4(5995):489-93. doi: 10.1136/bmj.4.5995.489. PMID: 811315; PMCID: PMC1675587.
7. World Health Organization (10 October 2024). WHO advises against any travel and trade restrictions with Rwanda in the context of the ongoing Marburg virus disease (MVD) outbreak. Available at: https://cdn.who.int/media/docs/default-source/travel-and-health/who-travel-advice-on-mvd-in-rwanda.pdf?sfvrsn=3fd97e69_2