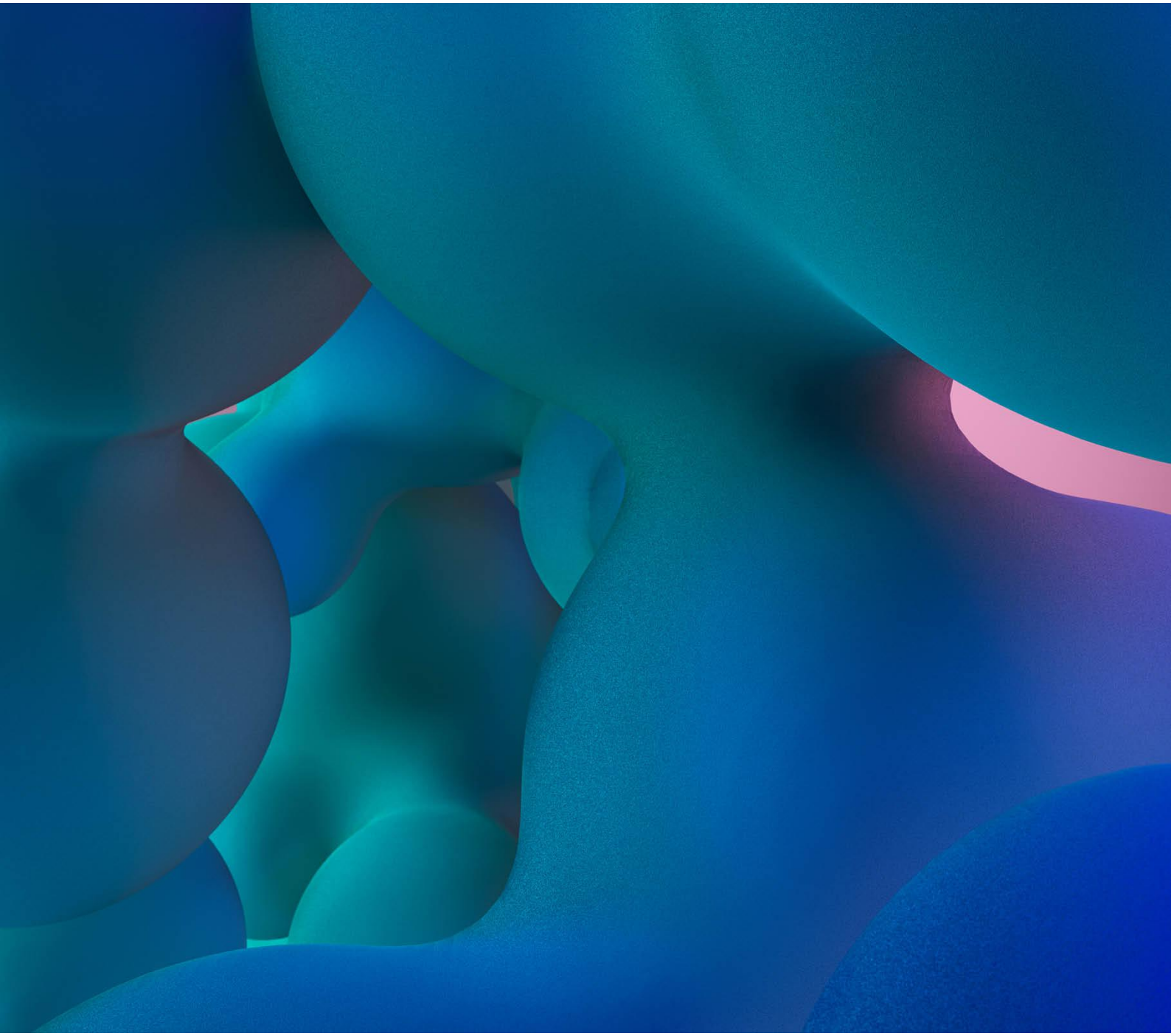
09 October 2024

ESCMID Emerging Infections Subcommittee (EIS) Commentary on the Marburg Virus Outbreak in Rwanda



October 2024
European Society of Clinical Microbiology and Infectious Diseases (ESCMID)

Content

ESCMID Emerging Infections Subcommittee (EIS) Commentary on the Marburg Virus Outbreak in Rwanda

1 Current Situation and Risk Assessment

1.1 Context

The Marburg virus (MARV) is an RNA virus, a member of the Filoviridae family and closely related to the Ebola virus, causes Marburg Virus Disease (MVD), a highly lethal haemorrhagic fever. The ongoing outbreak in Rwanda, confirmed on 27 September 2024, is a cause of concern due to its spread across multiple districts, including the capital, Kigali, and possibility to spread to neighbouring countries. Two contact travellers to Europe have been identified as of 2 October 2024, one to Belgium, one to Germany – MVD ruled out 3 October 2024.

MVD has its epicentre of endemicity in neighbouring countries Uganda, Kenya, DRC); smaller outbreaks occur regularly, out-of-area outbreaks have been previously recorded (e.g. outbreaks in 2005 in Angola; 2023 in Equatorial Guinea and Tanzania). The cases in Rwanda do not herald a major change in epidemiology, rather a spread outwards from up-to-date known areas of endemicity (there are good reasons to assume that due to fruit bat distribution across forested Africa, cases might occur throughout that vast region anytime anywhere). Usually, outbreaks are limited to remote areas; this one is unfolding across Rwanda with cases having reached and having led to nosocomial transmission within health facilities in Kigali. Rwanda is well-connected by air with many sub-Saharan African countries and beyond. It is densely populated with good roads within and beyond country limits; satellite cases with risk of further spread are not entirely unlikely.

1.2 Current Status in Rwanda (as of 08 October 2024)

- Confirmed cases: 58 (2 more compared with 06/10 report)
- Fatalities: 13
- Recovered: 12
- Affected districts: at least 7 out of 30, including Kigali.
- Healthcare impact: significant proportion of the cases (70% first days of outbreak) are healthcare workers, reflecting occupational exposure in clinical settings.
- Cumulative Surveillance: 2387 (280 more compared with 06/10)

1.3 Public Health Response in Rwanda

The Rwandan government, with the support of international partners, has implemented stringent measures to contain the outbreak. These measures include isolating confirmed cases, enhanced contact tracing, restrictions on hospital visits, and special protocols for safe burial practices to prevent further transmission.

Rwanda´s Ministry of Health informed 07/10/24 that vaccination of first line responders had started with Sabin Vaccine Institute Marburg vaccine. Clinical trials for treatment are probably close to start in collaboration with international partners. Without direct data about local trials ongoing, molecules that may be on trial could be remdesivir, galidesivir and favipiravir and monoclonal antibodies (MAB), considering previous data (Albakri K *et al*, 2023. Ann Med Surg (Lond)).

The outbreak's location in a densely populated urban setting like Kigali raises the potential for faster transmission compared to rural outbreaks. Efforts to mitigate the spread focus on infection prevention and control in healthcare facilities, along with public health campaigns aimed at reducing risky contact behaviours.

1.4 European confirmed and/or suspected cases (as of 03 October 2024)

- Germany (Hamburg): 2 suspected cases – tested negative
- Belgium: 1 suspected case – tested negative

2 Virus Characteristics and Transmission

2.1 Virology and Pathogenesis

Marburg virus causes severe haemorrhagic fever, characterized by symptoms like high fever, fatigue, diarrhoea, and in some cases, internal and external bleeding. The incubation period ranges from 5 to 21 days, and the disease progresses rapidly once symptoms appear. Fatality rates in past outbreaks have varied widely, depending on the level of medical care available.

2.2 Transmission

Human-to-human transmission occurs through direct contact with bodily fluids (blood, vomit, faeces, semen) of symptomatic patients or with contaminated surfaces and materials. Healthcare workers and individuals participating in traditional burial rites are at high risk of exposure. The virus does not spread via respiratory droplets under normal conditions, and transmission during air travel has not been documented.

3 Public Health Risk Assessment

3.1 Risk to Europe and Globally

While no cases have been confirmed outside Rwanda in connection to this outbreak, the risk of imported cases remains a concern due to global travel and affected urban areas in Kigali. According to the European Centre for Disease Prevention and Control (ECDC), the risk of MVD spreading to Europe is low, but vigilance is required, especially in monitoring travellers returning from affected areas. Healthcare systems across Europe have established protocols

for early detection, isolation, and treatment of suspected cases to prevent secondary transmission.

3.2 Preventative Measures

There are currently no licensed vaccines or specific antiviral treatments for Marburg virus. With potential compounds and vaccines in the pipeline; provided that this outbreak is not brought under control very quickly, it can be anticipated that ad hoc clinical trials will be set up to propel the development towards preventive and prophylactic tools forward. Preventive efforts focus on early detection, strict isolation of suspected cases, and rigorous infection control practices in healthcare settings. The World Health Organization (WHO) has issued guidelines on personal protective equipment (PPE) use for healthcare workers and safe burial procedures to reduce the risk of transmission.

4 Conclusions and Recommendations

The ongoing Marburg virus outbreak in Rwanda underscores the importance of rapid public health responses and international collaboration. Given the high fatality rate and the potential for spread in urban centres like Kigali, continued surveillance and readiness to manage imported cases in other regions are essential. National and international public health bodies should continue supporting Rwandan authorities while ensuring preparedness in healthcare facilities globally to address potential cases.

Further research and investment in vaccine development and therapeutic options for Marburg virus remain critical to prevent future outbreaks and mitigate their impact on public health.

5 References

Marburg Virus Disease Outbreak in Rwanda – Africa CDC . Access 08/10/24
RKI - Infektionskrankheiten A-Z - Marburgvirus-Infektionen . Access 04/10/24
ECDC advice on Marburg virus disease (europa.eu) Access 08/10/24
Marburg virus disease– The Republic of Rwanda (who.int) Access 08/10/24
https://x.com/RwandaHealth/status/1841589032356024727 . Access 08/10/24