



PRIMARY RISK ASSESSMENT

MARBURG VIRUS DISEASE RWANDA SEPTEMBER 2024

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SIGNAL

On September 27 2024, the Rwanda Ministry of Health reported an outbreak of Marburg virus disease (MVD).

On September 28, Belgium was informed by the Rwandan IHR National Focal Point that a high-risk contact of a confirmed Marburg case had arrived in Belgium on September 26.

DESCRIPTION

Event

An outbreak of Marburg virus disease (MVD) is ongoing in Rwanda. As of October 1, a total of 27 cases have been confirmed, and nine persons died of the disease (CFR 31%). Cases of MVD have been reported in seven of the country's 30 districts, with most cases reported from the region of Kigali.

According to the WHO, 70% of the cases are health care workers (HCW) from two health facilities in Kigali. One of the cases is a Belgian ophthalmologist working in Kigali. He had a low-risk contact on September 20, developed symptoms on September 23 and tested positive for MVD. He operated with an anesthesiologist who also had symptoms. At least 300 contacts are being followed in Rwanda.

A woman, whose husband died on September 8 from the effects of MVD, flew from Kigali to Brussels on Wednesday September 25 with Brussels Airlines. The woman had last contact with her late husband on September 8 (no direct contact). She had symptoms when she was in Belgium, which were not considered as MVD (but no MVD test was carried-out). As the (maximum) incubation period of 21 days ended on September 29, and a medical consultation on September 29 indicated that she was asymptomatic, it was decided that the lady could come out of isolation. She will be monitored daily until she flies back to Kigali on Thursday October 3rd.

Six Belgian students from UGent and KULeuven were reported to be working in the University Hospital (CHUK) in Kigali the past weeks. In this hospital, 12 cases of MVD were reported so far, of which some deaths among HCW. The students did not have contact with the concerned patients/HCW.

In addition, several Belgian citizens are living in the region.

Type of risk

Expected/unusual

Expected but unusual: although MVD is uncommon, Marburg virus (MARV) has the potential to cause outbreaks in Africa. Outbreaks have historically involved fewer than 10 cases. There have only been 2 reported outbreaks numbering more than 100 cases. The biggest Marburg outbreak on record occurred in 2004-2005 in Uije, Angola, where there were 252 confirmed cases and 227 deaths. In 2023, there were outbreaks in Equatorial Guinea (17 confirmed and 23 probable cases, 12 of the 17 confirmed cases died and all of the probable cases were reported deaths) and in the Kagera region in Tanzania, which borders Rwanda (9 cases and 6 deaths). This is the first time an outbreak occurs in Rwanda.

Severity of the risk
High

MVD presents as an hemorrhagic illness, with a case fatality rate between 24% and 88% (highest in low resource settings). In the early course of the disease, clinical diagnosis of MVD is challenging to distinguish from other infectious diseases such as malaria, typhoid fever, shigellosis, meningitis and other viral hemorrhagic fevers.

Exposed population
Health Care Workers in affected regions

Marburg virus is transmitted to people from fruit bats and spreads among humans through direct contact with the bodily fluids of infected people, surfaces and materials. MVD is not an airborne disease and is considered not to be contagious before symptoms appear. The incubation period lasts from 5 to 10 days (range 3–21 days).

The most likely route of introduction of MVD in Belgium is via infected travelers. There are direct flights between Rwanda and Belgium.

(Belgian) Health care workers (including students) working in the affected regions in Rwanda are also possibly exposed to the virus, but preventive measures can be taken to avoid exposure in care institutions (adequate wearing of PPE). In addition, contact tracing, risk assessment and close follow-up according to the risk of exposure is also carried out.

Risk of dissemination
National: very high
Regional: high
International: low

The number of cases detected so far (n=27), already makes the outbreak one of the biggest involving Marburg on record. Rwanda is taking measures to control the outbreak (enhanced surveillance, contact tracing, community awareness...), with additional support from WHO and CDC.

WHO assesses the risk of this outbreak as very high at the national level, high at the regional level, and low at the global level.

The risk for introduction of a case through international travel is low. However, the fact that a HRC arrived in Belgium by plane during the follow-up period is of concern.

PREPAREDNESS & CONTROL MEASURES ALREADY IN PLACE

Preparedness

- Laboratory capacity for diagnostic of Marburg virus exists at ITM (PCR test). Transport of samples follows the same procedure as for Ebola virus.
- Transport of suspected or proven cases of patients presenting with a haemorrhagic fever is possible through the CBRN-MUG service of the Belgian Army.
- Isolation and management of cases presenting with a haemorrhagic fever is only possible at UZA Antwerp, and the number of beds is limited to 2.
- There are currently no procedures in place for the international evacuation or repatriation of an exposed or an infected/sick Belgian citizen from the affected country to Belgium.
- Guidelines for the management of a possible case of Filovirus fever in Flanders exists but are currently under revision (https://www.zorg-en-gezondheid.be/sites/default/files/2022-04/Richtlijn%20Virale%20hemorragische%20koorts%20-%20filovirussen_2016.pdf). The Ebola guideline and internal procedure

should be sufficient to insure safe transport of a potential case in Belgium to the HLIU and to start with CT.

- However, these procedures for a case of Ebola are currently being revised (<https://www.info-ebola.be/en/>).
- There are several experimental drugs and vaccines for Marburg, but none has been licensed to date. The relative infrequency of Marburg outbreaks and their small size have made it impossible so far to test these products in the field.

Specific Control Measures

(surveillance, control, communication)

- MVD is a notifiable disease.
- Contact tracing procedures are in place at the regions.
- Procedures to deal with suspected MVD cases during flights are being developed by airline companies.

PUBLIC HEALTH IMPACT IN BELGIUM

*General population in Belgium: very low
HCW working in affected areas: high*

- Overall, the likelihood of exposure and risk of infection by MARV for Belgian citizens is currently very low.
- The risk of exposure for Belgian citizens living in Rwanda is estimated to be low if preventive measures are taken (avoid contact with bats or primates, avoid contact with body fluids, etc). Nevertheless, caution is needed as the real extent of the current outbreak might be underestimated.
- For health care workers working in an affected district of the country, the risk is high, especially if appropriate PPE is not used during care for symptomatic patients.
- Given the connection Kigali-Brussels (13 direct flights/week and a certain number of indirect flights), there is a risk of a HRC coming to Belgium. If there would be an imported case in Belgium, further spread within Belgium, leading to a cluster or epidemic is estimated to be very low. Nevertheless, HCW in Belgium must be aware and stay vigilant towards people arriving recently from Rwanda.
- It should be noted that Belgium is a hub in travel between Africa and Europe, Asia and North-America. The potential risk posed by transit passengers should be considered.

RECOMMENDATIONS

(Surveillance, control, communication)

1. Epidemiological follow-up of the situation in Rwanda.
2. Information and pro-active communication on the outbreak and ways of prevention for incoming and outgoing travellers (website of BuZA, ...).
3. Inform HCW active in the affected region to be cautious and apply adequate PPE.
4. Discourage non-essential medical staff and activities in regions of active outbreak (for example students).
5. No specific measures at the points of entry needed at this stage. However, the sanitary service of Brussels Airport and of Brussels Airlines should be contacted to evaluate the current state of knowledge of the flying staff.

6. Clarify advice for points of departure, such as clear guidance on the traveling of asymptomatic HRC.
7. Develop communication for passengers from Kigali to advise if they develop signs on their return to Belgium: contact a specific telephone number in the event of symptoms.
8. Inform hospital about the risk and transmit them an update of the procedures for rapid identification of suspected cases.
9. Contact specifically hospital IPC teams in order to allow them to prepare case identification capacity at hospital points of entry and first protective measures (isolation, PPE, ...)
10. Inform first line HCW (GP, Emergency Departments) and laboratories about existing guidelines (while pending an update, the 2014 Ebola guidelines can be used).

ACTIONS

(What, who)

- Follow-up of the epidemiological situation of Marburg in Rwanda → Sciensano
- Update travel advice → BUZA
- Prepare possible hospitalisation of symptomatic cases at UZA and check if procedures for taking care of a patient with a VHF are known → UZA
- Prepare/revise transport procedures from another hospital to UZA -> NRC (ITM)
- Update procedures for management of suspected cases during flights → Saniport.
- Update procedures and guidelines for Ebola by the end of October → federated entities and/or ITM.
 - *Of note, this has been recommended previously by the RAG, in the context of risk assessments for other viral haemorrhagic diseases.*
- Communication to HCW (GPs and hospitals) and laboratories → Sciensano (via Flash) and federated entities
- Communication to IPC teams → FOD/SPF

REFERENCES

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