

PRIMARY RISK ASSESSMENT

POSSIBLE LASSA OUTBREAK IN BENIN WITH POSSIBLE EXPOSURE OF BELGIAN CITIZENS

Date of the signal	Date of the RA	Signal provider	Experts consultation	Method
30/08/2023	31/08/2023	Departement Zorg	Permanent experts: Dr Caroline Boulouffe (AViQ), (COCOM-GGC), Dr Patrick Smits (Departement Zorg), Dr Jorgen Stassijns (Sciensano), Dr Gauthier Willemse (FOD)	Meeting 31/08/2023, 11 am
Date of update	Closing date			
			Specific experts : Naima Hammami (DZ), Bart Hoorelbeke (FOD), Sylvie Jonckheere (MSF), Tinne Lernout (Sciensano/RAG), Laurens Liesenborghs (ITM), Javiera Rebolledo (Sciensano/RAG), Marjan Van Esbroeck (ITM), Stefaan Van Der Borght (FOD), Erika Vlieghe (UZA/UA)	

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SIGNAL

On the 30th of August, the RAG has been informed on a possible outbreak of Lassa fever in Boko, Benin, with reporting of several cases in the hospital by different sources (*Reference Laboratory for Viral Haemorrhagic Fever in Cotonou and local WHO representative*). A number of Belgian citizens are currently staying in the affected region, with some of them possibly exposed.

Although the signal has not officially been validated by the local authorities, the risk assessment below concerns a scenario of confirmed possible exposure to Lassa virus among Belgian citizens in Benin, while pending 1) confirmation of the outbreak by the authorities or a positive result for a PCR test performed on the Belgian citizens and 2) more clinical and epidemiological information (risk classification).

DESCRIPTION

Event

Between 23 and 25 of August 2023, three staff members of the paediatrics service of the hospital in Boko (about 8 hours from the capital Cotonou) reportedly fell ill with high fever and Lassa fever is reported to be confirmed for all of them. One person was transferred to the hospital of Paracou. The possible index case is suspected to be a baby with Lassa hospitalized in the neonatology ward in Boko between 11 and 13/8, whom has since died.

The Reference Laboratory for Viral Haemorrhagic Fever in Cotonou confirms that some cases of Lassa fever were recently confirmed via PCR on blood, and the local WHO responsible reported to the Belgian embassy in Benin that a total of six cases have been confirmed, including 1 severe (transferred to Cotonou), and 1 suspected death. But there is no official reporting of the outbreak made by the authorities of Benin (supposed to be done within 24 hours after the first confirmed case)

A total of 16 Belgian citizens are currently staying in the affected region (region (Boko + Paracou). Some persons presented with mild symptoms. A PCR test for Lassa virus was performed on 29/8 on 6 persons, from 3 had complaints: the results turned out negative. PCR tests were carried-out by the National Reference Laboratory in Cotonou, using the Altona-kit, a kit also used by ITM. The NRL VHF is supported by the Bernhard-Nocht Institute.

Type of risk *Unusual*

Lassa fever is endemic in West Africa, with regular (small) outbreaks in Nigeria and Liberia. Rodents serve as an intermediate host for transmission. Due to population growth, increased mobility, loss of biodiversity and expanding rodent populations, the number of Lassa cases in the affected region in Africa is increasing.

In Benin, the first outbreak of Lassa fever (n=16 cases including 9 deaths) was reported in 2014 in Tanguiéta and Colby communes, Atakora district, North West Benin and a second outbreak occurred in 2016 in several districts in central and Eastern Benin, along the Nigerian border (n=48 cases). Since then, other cases have been reported (2 in 2017 and 1 according to official sources in 2018, but about 20 cases according to local media).

The occurrence of cases of Lassa in Benin is not unexpected, but it is unusual to have Belgian citizens possibly exposed to the virus. So far, there have been no cases diagnosed in Belgium.

Severity of the risk
Medium

It is estimated that 80% of people who become infected with Lassa virus have no or mild symptoms, but in 20% of symptomatic cases, the clinical course results in a severe disease with multi-organs impairments. Death occurs in around 15%-20% of hospitalized severe cases.

Exposed population
(unknown, specific groups such as (children, travellers, professional groups, ...))

At the moment of the risk analysis (30/08)¹, there was not enough information available to do an individual risk classification for the citizens. Therefore, it was considered that all have possibly been exposed to Lassa virus. If they travel separately, with no specific precautions and while presenting with possible symptoms of Lassa fever, exposure (if Lassa fever is confirmed) of other travellers/staff in the flights and people in transfer airports cannot be excluded, and contact tracing will be very difficult to set up.

Exposure of health staff and family members in Belgium should also be strictly avoided.

Risk of (inter)national dissemination
Very low

Previous experiences with nosocomial transmission of Ebola virus in Spain and in the US confirmed that even well-resourced and -trained healthcare settings are still vulnerable to the risk of secondary transmission of viral haemorrhagic fevers. However, spread to the general population in Belgium is considered to be very low.

PREPAREDNESS & CONTROL MEASURES ALREADY IN PLACE

Preparedness

- Laboratory capacity for diagnostic of Lassa virus exists (at ITM).
- Transport of suspect or proven cases is possible through the CBRN-MUG service of the Belgian Army
- Isolation and case management of suspected cases is possible at UZA Antwerp, although the number of beds is limited to 2.
- However, there is nothing really set for the international evacuation or repatriation of an exposed or an infected/sick national from the affected country to Belgium.
- Guidelines for the management of a possible case of Lassa fever in Flanders exists but are not very detailed. [https://www.zorg-en-gezondheid.be/sites/default/files/2022-04/Richtlijn%20Virale%20hemorragische%20koorts Arenavirussen 2016.pdf](https://www.zorg-en-gezondheid.be/sites/default/files/2022-04/Richtlijn%20Virale%20hemorragische%20koorts%20Arenavirussen%202016.pdf)
- The procedures for a case of Ebola can also be used (<https://www.info-ebola.be/en/>). However they need to be revised and possibly updated/adjusted for Lassa.

Specific Control Measures
(surveillance, control, communication)

- All citizens have been requested to register possible symptoms and take their temperature twice a day.
- All citizens will be contacted Thursday 31/8 AM by Departement Zorg to collect clinical and epidemiological information, in order to be able to do an individual risk assessment, using a standardized questionnaire.

RISK ASSESSMENT FOR PUBLIC HEALTH IMPACT IN BELGIUM

(specify expected public health impact as very low, low, medium or high)

- In absence of more information, the individual risk for the citizens cannot be assessed at this stage².
- In case of a confirmed outbreak of Lassa in Boko, Benin and possible infection in one or several Belgian citizens, further spread within Belgium, leading to a cluster or epidemic, is estimated to be almost nihil when appropriate measures are taken for suspected/confirmed cases of Lassa fever among the returning citizens.

RECOMMENDATIONS

(Surveillance, control, communication)

1. Obtain official confirmation of the outbreak from the local authorities or WHO.
2. Epidemiological follow-up of the situation in Benin and among the citizens.
3. **Management of citizens in Cotonou:** group at one place in Cotonou (hotel, guesthouse, ...) each in a separate room, with medical follow-up.

4. Management of return to Belgium

Criteria to be based on risk assessments of the individual cases:

	Symptomatic – no PCR or unknown	Symptomatic – PCR negative	Asymptomatic - PCR unknown Or symptomatic PCR negative	PCR positive
High/Unknown Risk	Stay in Cotonou – follow-up by local health contact PCR test if >37,5	Travel if medically fit to travel	Fly home asap, if possible in group	Specialized transport home
Low Risk	Health check before travel, fly home as intended	Health check before travel, fly home as intended	Fly home as intended	Specialized transport home

5. Management upon return


- Recommended quarantine of asymptomatic persons at home with medical follow-up (self-check temperature twice a day) until 21 days after the last possible exposure, according to the guidelines of Department Zorg.
- Transport and isolation of symptomatic persons in UZA, while awaiting the pending results of laboratory results.

ACTIONS

(What, who)

- Obtain official confirmation of Lassa cases → Belgian Embassy

² After the meeting, more detailed information could be collected and citizens were classified into a high or unknown risk, low risk and incidental contact.

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- Follow-up of epidemiological situation of Lassa in Benin → RAG
 - (Medical) follow-up of the citizens in Benin → Departement Zorg, UZA, Belgian Embassy in Benin
 - Organise travel back → FOD/SPF
 - Organization of quarantine and monitoring of high risk cases → Departement Zorg
 - Prepare possible hospitalisation of several symptomatic cases at UZA and check if procedures for taking care of a patient with a VHF are known → UZA
 - If the outbreak is confirmed, contact BuZa to have an update on staff working in the affected areas in Benin → FOD/SPF.

REFERENCES

- ECDC. Rapid Risk Assessment. Lassa fever in Nigeria, Benin, Togo, Germany and USA. March 2016. Available from : <https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/RRA-Lassa-fever-Germany-march-2016.pdf>
- Lassa fever in Benin: description of the 2014 and 2016 epidemics and genetic characterization of a new Lassa virus. Emerging Microbes & Infections, 2020 Vol 9. Available from <https://doi.org/10.1080/22221751.2020.1796528>
- ECDC. Rapid risk assessment: Cases of Lassa fever in the Netherlands ex Sierra Leone. November 2019. Available from <https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-cases-lassa-fever-netherlands-ex-sierra-leone>.
- ECDC. Lassa fever, Annual Epidemiological Report for 2019. January 2021. <https://www.ecdc.europa.eu/sites/default/files/documents/AER-Lassa-2019.pdf>.