
Lassa fever

Frequently Asked Questions

What is Lassa fever?

Lassa fever is a viral haemorrhagic fever that was first discovered in 1969 when two missionary nurses died from the illness in the Nigerian town of Lassa. The Lassa virus is a zoonotic or animal-borne virus and the natural animal host is the "multimammate rat" (*Mastomys natalensis*). Lassa fever occurs naturally in the West African countries of Sierra Leone, Liberia, Guinea and Nigeria. Sporadic cases have also been reported from Central African Republic, Burkina Faso, Côte d'Ivoire, Mali, Togo, Benin, Senegal and Ghana. In the 50 years that the disease has been known, about 40 cases of Lassa fever have been associated with returning travellers from endemic areas.

Who can get Lassa fever?

People at greatest risk of getting Lassa fever are those who reside in the countries that are endemic for the disease. Hospital staff or those with very close contact with persons that are suffering from Lassa fever are also at risk through direct contact with infected blood and bodily fluids. The virus may be aerosolized in the hospital setting when certain medical procedures are conducted.

Travellers to endemic areas that have contact with a contaminated environment (see section on transmission) are also at risk.

Where does Lassa fever occur in South Africa?

Lassa fever is not endemic to South Africa. South African travellers to endemic countries may be at risk if they are exposed to environments where infected rats are found. Prior to May 2022, in 2007, a case of Lassa fever was diagnosed in a Nigerian doctor who was hospitalized in South Africa. No secondary cases were identified.

How is Lassa fever transmitted?

The Lassa virus spreads easily from the rodent vector to humans as these rats are often found in homes and areas where food is stored. Transmission occurs most commonly through inhalation and ingestion. Once the rat is infected, it continues to excrete the virus in urine and droppings for extended periods of time. Direct contact with these materials through touching soiled objects, eating contaminated food or exposure to broken skin, can lead to infection. Airborne infection may occur when contaminated particles (dust) are inhaled. *Mastomys* rodents are sometimes consumed as food and infection may occur when rodents are caught and prepared. Person-to-person infections and laboratory transmission can occur, particularly in the hospital environment (nosocomial transmission) through direct contact with infected secretions (blood, saliva, urine, semen or vomitus) and mucous membranes or non-intact skin.

What are the signs and symptoms of Lassa fever?

Signs and symptoms of Lassa fever usually appear 1-3 weeks after exposure to the virus. In endemic countries, approximately 80% of Lassa fever infections may result in mild symptoms and are often undiagnosed. These symptoms are a low grade fever, headache and malaise. Severe symptoms occur amongst 20% of infected persons and may include haemorrhage, respiratory distress, severe vomiting, facial swelling, pain in the chest, back, and abdomen and shock. Encephalitis may also occur. Death is from multi-organ failure, usually 2 weeks after the onset of illness. The case-fatality rate is <2% overall, but it is increased to 15%–20% for hospitalised

cases, > 30% in highly pregnant women and up to 50% during nosocomial outbreaks. Deafness is a common complication of Lassa fever (30% of survivors) and may be permanent.

How is Lassa fever diagnosed?

Lassa fever is clinically diagnosed by considering the clinical presentation of the case and the possible exposure history (for example history of travel to an endemic area or contact with a known case). Specialized laboratory testing is required to exclude or confirm cases. During early stages of the disease, reverse transcription-polymerase chain reaction (RT-PCR) is used to investigate suspected cases. The detection of IgM and IgG antibodies against Lassa fever virus is also used to determine if recent infection has occurred. All specialized tests for Lassa fever in South Africa are conducted at the viral haemorrhagic fever referral laboratory located at the NICD.

How is Lassa fever treated?

Treatment for mild symptoms includes supportive measures (analgesia, fluids, rest). For severe cases, the maintenance of fluid and electrolyte balance, oxygenation and blood pressure, as well as managing any complications are essential. The anti-viral drug ribavirin has been used with success if given early during the onset of disease.

How can Lassa fever be prevented?

In endemic countries, prevention of Lassa fever relies on reducing or avoiding exposure to rats. Keeping homes and public spaces clean, adequate sanitation and refuse removal, keeping food in containers, trapping and appropriate poisoning are important means of keeping the environment free of rats.

Hospital (or nosocomial) transmission can be prevented by observing appropriate infection control and prevention (or IPC) measures, including isolation of the patient.

Where can I find out more information?

Laboratory results and queries:

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Clinical queries (Healthcare workers only):

NICD Doctor on Call 0800 212 552

Outbreak related queries:

NICD Outbreak Team outbreak@nicd.ac.za

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