











[Home](#) > [ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)



- ➔  **Fact sheet No 179: Lassa Fever - New draft: April 2000 (WHO, 2000, 3 p.)**
-  **(introduction...)**
-  **Clinical illness**
-  **Diagnosis**
-  **Epidemiology**
-  **Outbreaks**

[Home](#) > [ar.cn.de.en.es.fr.id.it.ph.po.ru.sw](#)



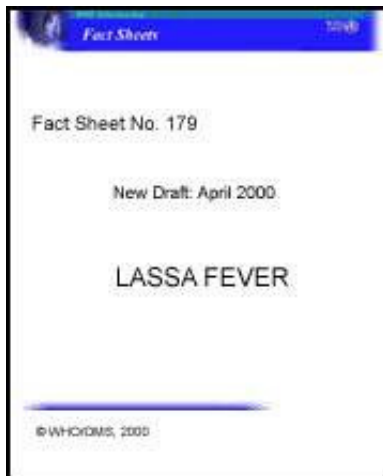
-  **Fact sheet No 179: Lassa Fever - New draft: April 2000 (WHO, 2000, 3 p.)**
- ➔  **(introduction...)**
-  **Clinical illness**
-  **Diagnosis**
-  **Epidemiology**
-  **Outbreaks**

New Draft: April 2000

Lassa fever is an acute viral illness of one to four weeks duration caused by Lassa

virus, a member of the arenavirus family of viruses. The disease was first described in the 1950s, although the virus was not isolated until 1969. Consequences range widely in severity, from asymptomatic infection without illness to extremely severe illness which may have a fatal outcome.

[Home](#) > [ar](#).[cn](#).[de](#).[en](#).[es](#).[fr](#).[id](#).[it](#).[ph](#).[po](#).[ru](#).[sw](#)



 **Fact sheet No 179: Lassa Fever - New draft: April 2000 (WHO, 2000, 3 p.)**

 **(introduction...)**

 **Clinical illness**

 **Diagnosis**

 **Epidemiology**

 **Outbreaks**

Clinical illness

- **In clinical illness the onset is gradual, with fever, malaise, headache, sore throat, cough, nausea, vomiting, diarrhoea, myalgia (painful muscles), and chest and abdominal pain. The fever may be either constant or intermittent with spikes. Inflammation of the throat and eyes is commonly observed.**

- **In severe cases, hypotension or shock, pleural effusion (fluid in the lung cavity), haemorrhage, seizures, encephalopathy (dysfunction of the brain) and swelling of**

the face and neck are frequent. Approximately 15% of hospitalized patients die. The disease is more severe in pregnancy, and fetal loss occurs in greater than 80% of cases.

• Hair loss and loss of coordination may occur in convalescence. In addition, deafness occurs in 25% of patients, with only half recovering some function after one to three months. Immunity to reinfection occurs following infection, but the length of this period of protection is unknown.

[Home](#) > [ar](#).[cn](#).[de](#).[en](#).[es](#).[fr](#).[id](#).[it](#).[ph](#).[po](#).[ru](#).[sw](#)



-  **Fact sheet No 179: Lassa Fever - New draft: April 2000 (WHO, 2000, 3 p.)**
-  **(introduction...)**
-  **Clinical illness**
-  **Diagnosis**
-  **Epidemiology**
-  **Outbreaks**

Diagnosis

• The clinical syndrome of Lassa fever is difficult to distinguish from severe malaria, septicaemia (infections of the bloodstream), yellow fever and other viral haemorrhagic fevers (e.g., Ebola). Inflammation of the throat with white tonsillar

patches is an important distinguishing feature.

- **Definitive diagnosis requires testing that is available only in highly specialized laboratories. Laboratory specimens may be biohazardous and must be handled with extreme care at the highest level biosafety containment.**

Treatment Specific treatment with the anti-viral drug, ribavirin may be effective if given within the first six days of illness. Ribavirin should be given intravenously for ten days.

[Home](#) > [ar](#).[cn](#).[de](#).[en](#).[es](#).[fr](#).[id](#).[it](#).[ph](#).[po](#).[ru](#).[sw](#)



 **Fact sheet No 179: Lassa Fever - New draft: April 2000 (WHO, 2000, 3 p.)**

 **(introduction...)**

 **Clinical illness**

 **Diagnosis**

 **Epidemiology**

 **Outbreaks**

Epidemiology

- **Lassa fever occurs in Guinea, Liberia, Sierra Leone and regions of Nigeria.**

- **It is transmitted to humans from wild rodents (the multimammate rat, *Mastomys natalensis*). Lassa infection in rodents persists and the virus is shed throughout the life of the animal. Disease transmission is primarily through direct or indirect contact with excreta of infected rodents deposited on surfaces such as floors or beds, or in food or water.**
- **Person-to-person and laboratory infections occur, especially in the hospital environment, by direct contact with blood (including inoculation with contaminated needles), pharyngeal (throat) secretions or urine of a patient, or by sexual contact. Person-to-person spread may occur during the acute phase of fever when the virus is present in the throat.**
- **The virus may be excreted in the urine of patients for three to nine weeks from the onset of illness. Lassa virus can be transmitted via semen for up to three months.**
- **All age groups are susceptible to Lassa infection. The incubation period is 6-21 days.**

Control The main methods of control are isolation of cases, disinfection, surveillance of contacts and rodent control.

- **Isolation: Hospital transmission has occurred when inadequate infection control measures were practised. Therefore, strict barrier isolation of cases in a hospital room and strict procedures for handling of body fluids and excreta should be maintained.**
- **Disinfection: Patient's excreta, sputum, blood and all objects with which the**

patient has had contact, including laboratory equipment used to carry out tests on blood, should be disinfected with 0.5% sodium hypochlorite solution or 0.5% phenol with detergent, and, as far as possible, by appropriate heating methods such as autoclaving, incineration or boiling.

Laboratory tests should be carried out in special high-containment facilities; if there is no such facility, specimen handling should be kept to a minimum and performed only by experienced technicians using all available precautions such as gloves and biosafety cabinets. When appropriate, serum may be heat-inactivated at 60°C (140°F) for one hour. Thorough terminal disinfection with 0.5% sodium hypochlorite solution or a phenolic compound is adequate; formaldehyde fumigation can be considered.

- **Surveillance of contacts: Identify all close contacts (people living with, caring for, testing laboratory specimens from or having non-casual contact with the patient) in the three weeks after the onset of illness. Close surveillance of contacts should be established by conducting body temperature checks at least two times daily for three weeks after last exposure. In case of temperature greater than 38.3°C (101°F), hospitalize immediately in isolation facilities. The place of residence of the patient during the three weeks prior to onset should be determined and a search initiated for unreported or undiagnosed cases.**

Prophylaxis with ribavirin is recommended by some workers for close contacts, but there is little information about its efficacy. No vaccine is currently available.

- **Rodent control: The ideal method of prevention in endemic areas is to prevent contact between rodents and humans. However, *Mastomys* rodents are found**

widely in Africa with the Lassa virus having been identified in the above-mentioned West African countries. Closely related viruses are found in Zimbabwe and Mozambique.

This species of rodent lives in close proximity to man and humans can be infected by inhalation of tiny droplets (aerosols) of virus-laden rodent excreta, by ingestion of contaminated foods or water, or through breaks in the skin.

Exposure may occur in the home or during occupational activities such as agricultural work or mining. As mentioned above, hospital infections and person-to-person transmission occur, but the number of these cases is small in comparison to the number of community-acquired infections resulting from contact with rodents.

To the extent possible, people in endemic areas should restrict entry of rats into their dwelling, isolate food supplies from rodents, eliminate habitats for rats and minimize activities that produce aerosols containing rodent excreta.



[Home](#) > [ar](#).[cn](#).[de](#).[en](#).[es](#).[fr](#).[id](#).[it](#).[ph](#).[po](#).[ru](#).[sw](#)



**Fact sheet No 179: Lassa Fever - New draft: April 2000
(WHO, 2000, 3 p.)**



(introduction...)



Clinical illness



Diagnosis



Epidemiology

Outbreaks

Outbreaks

- **Previous outbreaks have been reported in Central African Republic, Liberia, Nigeria and Sierra Leone. Serological evidence of human infection has been found in Democratic Republic of the Congo, Guinea, Mali and Senegal.**
- **The most recent outbreak occurred in Sierra Leone. A total of 823 cases, including 153 deaths (18.6%), were reported from January 1996 to April 1997.**

International implications As Lassa fever may have a long (up to 21 day) incubation period, it is possible that travellers from endemic areas may be incubating the disease. It is important that fevers of unknown origin in people coming from these endemic areas be investigated for the possibility of Lassa fever. However, one case of Lassa fever entering a non-endemic area should not arouse fear of an epidemic as long as it is ensured that the correct infection control procedures are followed.

For further information journalists can contact the Office of the Press Spokesperson, WHO, Geneva. Telephone (+41 22) 791 2599. Fax (+41 22) 791 4858. E-mail: inf@who.int All WHO Press Releases and Fact Sheets can be obtained on the Internet on the WHO home page <http://www.who.int>

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