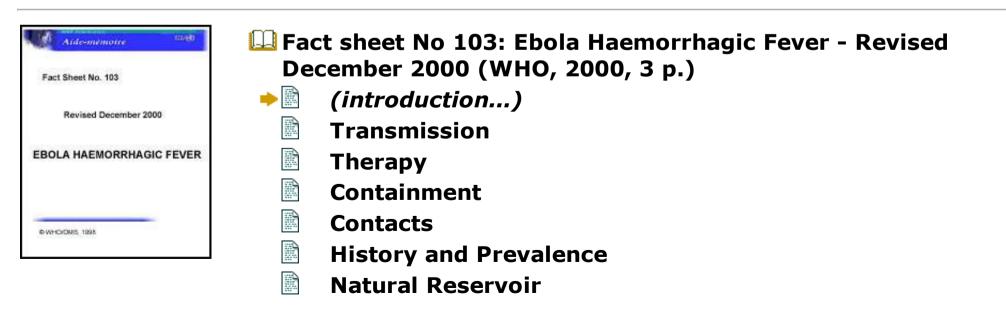
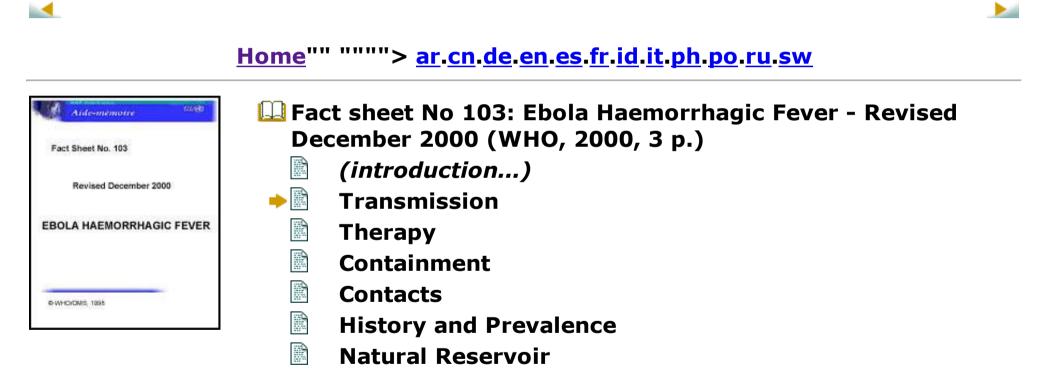


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Ebola haemorrhagic fever (EHF) is one of the most virulent viral diseases known to humankind, causing death in 50-90% of all clinically ill cases. The disease has its origins in the jungles of Africa and Asia. Several different forms of Ebola virus have been identified and may be associated with other clinical expressions, on which further research is required.



## Transmission

• The Ebola virus is transmitted by direct contact with the blood, secretions, organs or semen of infected persons. Transmission through

semen may occur up to seven weeks after clinical recovery, as with Marburg haemorrhagic fever.

• Transmission of the Ebola virus has also occurred by handling ill or dead infected chimpanzees, as was documented in Cte d'Ivoire and Gabon.

• Health care workers have frequently been infected while attending patients. In the 1976 epidemic in Zaire, every Ebola case caused by contaminated syringes and needles died.

Incubation: 2 to 21 days

Symptoms: Ebola is often characterized by the sudden onset of fever, weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhoea, rash, limited kidney and liver functions, and both internal and external bleeding.

Diagnosis: Commercially unavailable specialized laboratory tests on blood specimens detect specific antigens and/or genes of the virus, isolate the virus in cell culture or detect IgM and IgG antibodies. These tests present an <u>extreme</u> biohazard and are only conducted under maximum biological containment conditions.

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**December 2000 (WHO, 2000, 3 p.)** 

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# Therapy

No specific treatment or vaccine exists for Ebola haemorrhagic fever.

 Severe cases require intensive supportive care, as patients are frequently dehydrated and in need of intravenous fluids.

• Experimental studies involving the use of hyper-immune sera on animals demonstrated no long-term protection against the disease after interruption of therapy.

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**I** Fact sheet No 103: Ebola Haemorrhagic Fever - Revised December 2000 (WHO, 2000, 3 p.)



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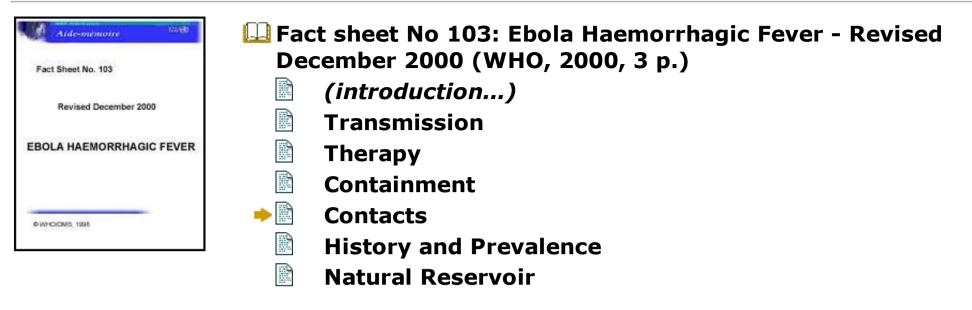
# Containment

 Suspected cases should be isolated from other patients and strict barrier nursing techniques practised.

 All hospital personnel should be briefed on the nature of the disease and its routes of transmission. Particular emphasis should be placed on ensuring that high-risk procedures such as the placing of intravenous lines and the handling of blood, secretions, catheters and suction devices are carried out under barrier nursing conditions. Hospital staff should have individual gowns, gloves and masks. Gloves and masks must not be reused unless disinfected.

Patients who die from the disease should be promptly buried or cremated.





#### Contacts

• As the primary mode of person-to-person transmission is contact with contaminated blood, secretions or body fluids, any person who has had close physical contact with patients should be kept under strict surveillance, i.e. body temperature checks twice a day, with immediate hospitalization and strict isolation recommended in case of temperatures above 38.3°C (101°F). Casual contacts should be placed on alert and asked to report any fever.

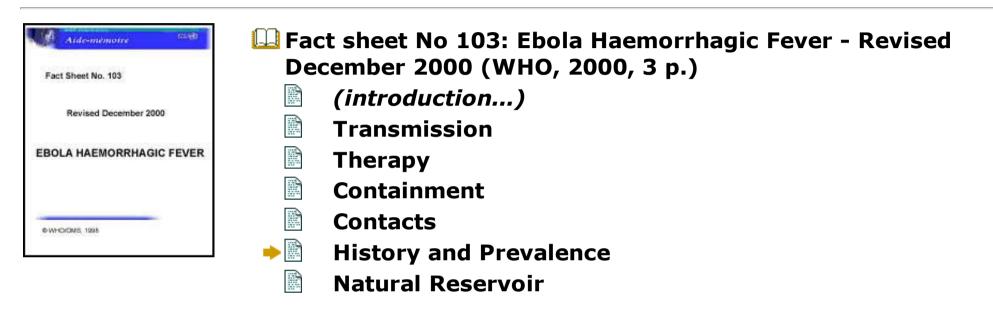
• Surveillance of suspected cases should continue for three weeks after the date of their last contact.

 Hospital personnel who come into close contact with patients or contaminated materials without barrier nursing attire must be considered

#### exposed and put under close supervised surveillance.

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#### **History and Prevalence**

The Ebola virus was first identified in a western equatorial province of Sudan and in a nearby region of Zaire (now Democratic Republic of the Congo) in 1976 after significant epidemics in Yambuku, northern Zaire, and Nzara, southern Sudan.

• Between June and November 1976 the Ebola virus infected 284 people in Sudan, with 117 deaths. In Zaire, there were 318 cases and 280 deaths in September and October. An isolated case occurred in Zaire in 1977, a second outbreak in Sudan in 1979.

• In 1989 and 1990, a filovirus, named Ebola-Reston, was isolated in monkeys being held in quarantine in laboratories in Reston (Virginia), Alice (Texas) and Pennsylvania, United States of America. In the Philippines, Ebola-Reston infections occurred in the quarantine area for monkeys intended for exportation, near Manila. Ebola-related filoviruses were isolated from cynomolgus monkeys (*Macacca fascicularis*) imported into the United States of America from the Philippines in 1989. A number of the monkeys died and at least four persons were infected, although none of them suffered clinical illness.

• A large epidemic occurred in Kikwit, Zaire in 1995 with 315 cases, 244 of which had fatal outcomes.

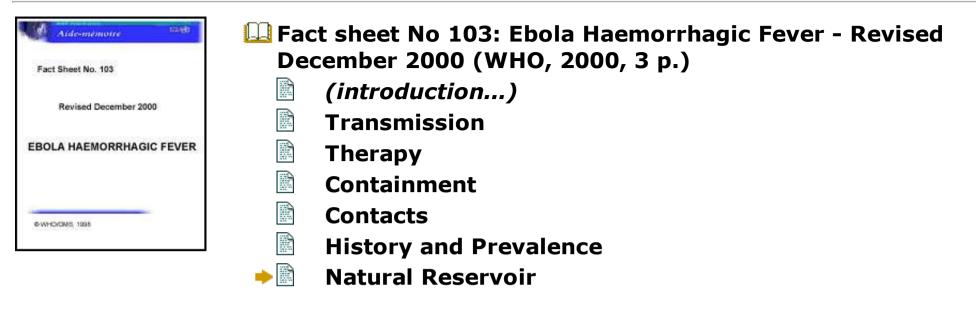
• One human case of Ebola haemorrhagic fever and several cases in chimpanzees were confirmed in Cte d'Ivoire in 1994-95.

• In Gabon, Ebola haemorrhagic fever was first documented in 1994 and outbreaks occurred in February 1996 and July 1996.

• Ebola virus infections were not reported again until the autumn of 2000 when an outbreak occurred in northern Uganda.

Excluding the most recent outbreak, nearly 1100 cases with over 800 deaths have been documented since the virus was discovered.

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#### Natural Reservoir

• The natural reservoir of the Ebola virus seems to reside in the rain forests of Africa and Asia, but has not yet been identified. Different hypotheses have been developed to try to explain the origin of Ebola outbreaks. Initially, rodents were suspected, as is the case with Lassa fever whose reservoir is a wild rodent (*Mastomys*). Another hypothesis is that a plant virus may have caused the infection of vertebrates. Laboratory observation has shown that bats experimentally infected with Ebola do not die and this has raised speculation that these mammals may play a role in maintaining the virus in the tropical forest.

 Although non-human primates have been the source of infection for humans, they are not thought to be the reservoir. They, like humans, are infected directly from the natural reservoir or through a chain of transmission from the natural reservoir.

• Extensive ecological studies are currently under way in Cte d'Ivoire to identify the reservoir of Ebola. Studies to identify the reservoir of Marburg virus, a closely related filovirus are being conducted in the Democratic Republic of the Congo.

Further information: Please contact the Spokesperson's Office, WHO, Geneva, Tel.: (+41 22) 791 2599, Fax: (+41 22) 791 4858, E-mail: inf@who.int All WHO Press Releases, Fact Sheets and Features as well as other information on this subject can be obtained on Internet on the WHO web site: http://www.who.int