



Ebola Hemorrhagic Fever Backgrounder

Ebola hemorrhagic fever (Ebola fever) is a viral disease. It has been made newsworthy worldwide because of its destructive potential. The exact mode of transmission is not understood. The incubation period appears to be up to 1 week, at which time the patient develops fatigue, discomfort, headache, backache, vomiting and diarrhea. Within a week, a raised rash appears over the entire body; the rash is often hemorrhagic (contains blood). Hemorrhaging generally occurs from the gastrointestinal tract, causing the patient to bleed from both the mouth and rectum. Mortality is high, reaching 90%. Patients usually die from shock rather than blood loss. People can be exposed to Ebola virus from direct contact with the blood and/or secretions of an infected person.

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 and 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. In the Philippines, Ebola-Reston infections occurred in the quarantine area for monkeys intended for exportation. 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 hemorrhagic fever and several cases in chimpanzees were confirmed in Côte d'Ivoire in 1994-95. In Gabon, Ebola hemorrhagic 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, approximately 1,500 cases with slightly over 1,000 deaths have been documented since the virus was discovered.

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 in 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 Côte d'Ivoire to identify the reservoir of Ebola.