

Ebola: Five questions about the killer virus

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The highly contagious Ebola virus, which has killed more than 4,500 people in west Africa since December and has fueled global alarm, is among the most dangerous ever identified.

Where did it come from?

Like AIDS, which began in Kinshasa in the 1920s before spreading worldwide, according to a recent study, Ebola was first identified in central Africa.

The tropical virus was named after a river in the Democratic Republic of Congo, where it came to light in 1976.

Five species have been identified to date (Zaire, Sudan, Bundibugyo, Reston and Tai Forest), the first being the most dangerous with death rates that have reached 90 percent among humans.

The death rate in the current epidemic of [haemorrhagic fever](#) is around 70 percent according to the World Health Organization (WHO).

How is it transmitted?

The virus' natural reservoir animal is probably the bat, which does not contract the disease itself.

Chimpanzees, gorillas, monkeys, forest antelope and porcupines have also been found to transmit Ebola to humans.

Only one certified contact with an animal has been recorded in the current outbreak, however, early on in Guinea, following which it has been passed on among humans.

Although it is highly contagious, Ebola is transmitted less easily than some other diseases. An average of two people have been infected by each person who has contracted the disease since December.

This is because Ebola is transmitted by contact with the blood, body fluids, secretions or organs of an infected person, but not by air.

Those infected do not become contagious until the symptoms appear. They then become more and more contagious until just after their death, which poses great risks during funerals.

Following an incubation period of between two and 21 days, five being the average according to a Swiss study, Ebola develops into a high fever, weakness, intense muscle and joint pain, headaches and sore throats.

That is often followed by vomiting and diarrhoea, skin eruptions, kidney and liver failure, and internal and external bleeding.

How can it be treated?

Because there is no approved drug treatment at present, patients are essentially re-hydrated.

A series of experimental treatments have nonetheless resulted in positive results among several patients.

The best known is ZMapp, a cocktail of three monoclonal (single cell) antibodies developed through a Canadian/US partnership, of which several hundred doses are expected to become available by the end of

this year.

Avignan, an anti-flu treatment developed by the Japanese firm Toyama Chemical, could be available rapidly but it has not yet been proven sufficiently effective against the Ebola virus.

Toyama Chemical says it has enough Avignan in stock for more than 20,000 people.

Two vaccines have been deemed promising by the WHO and their development has been speeded up. They are the Canadian drug VSV-EBOV, of which 1,000 doses were sent to the WHO this week, and cAd3-ZEBOV, made by the British pharmaceutical group GlaxoSmithKline, which is not expected to be ready before 2016.

How can you protect yourself?

Ebola is best treated preventively, notably through hand-washing and using gel- or alcohol-based disinfectants. The required procedure is simple but must be done rigorously, and anyone suspected of exposure must check carefully for symptoms, especially fever.

It is recommended to keep a distance of several metres (yards) from infected people or bodies, and health-care providers must wear disposable protection clothing that includes masks and gloves.

Sites that have been contaminated must be disinfected.

How to defeat Ebola?

Patients must first be identified through laboratory tests because the symptoms resemble those of other diseases such as malaria. Those

infected must be isolated.

Ebola treatment centres require substantial means: WHO estimates that it takes between 200-250 medical personnel to safely staff a centre of 70 beds.

All people in contact with an infected person must be closely watched for 21 days to ensure they have not contracted the disease.

The United Nations has estimated it will take around \$1.0 billion (780 million euros) to fight Ebola over the next six months, but less than 40 percent of that amount has been received so far.

The money is needed to increase the number of available beds to 7,000 from 4,300 at present by December 1 and to provide the required number of personnel.

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