



Medicine for Managers

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Ebola Virus

The World Health Organisation has declared an outbreak of Ebola Virus in the Democratic Republic of Congo and described it as a public health emergency of International concern. At the time of writing nearly 600 cases have been reported with around 150 deaths. There is no vaccine or approved drugs for treatment of the current strain, called Bundibugyo. The virus has spread beyond Congo with two cases reported in neighbouring Uganda.

On August 26th 1976, the Democratic Republic of Congo (*then Zaire*) saw the first serious outbreak of the virus, which was named after the local Ebola River (a tributary of the River Congo).

The first patient, a village schoolmaster,



died and in that outbreak. 88% of the 318 patients infected with the disease also died.

At about the same time, a separate outbreak occurred in the

Sudan with 53% of the 284 infected patients dying.

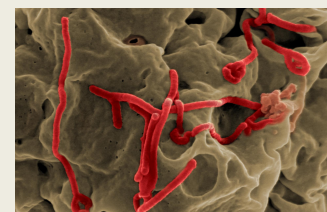
Since then, up to the present one, other outbreaks involving varying numbers of patients, have occurred in Sudan, Uganda, Guinea and most frequently in the DR Congo.

Between 2013-16, the World Health Organisation declared a major outbreak in West

African Guinea and which spread rapidly to Sierra Leone and Liberia. There were about 28500 cases with about 11,500 deaths.

Between 2018-20 there were 2,300 deaths in a further outbreak. More recently cases have appeared in Nigeria and Senegal.

Isolated cases have been treated in the UK and the US, either repatriated or returning from Africa. In the current outbreak and at the time of writing this article, there have been about 600 cases with 150 reported deaths according to the World Health



Organisation. It is estimated that currently each infected patient goes on to infect 1.5 other people, hence the expansion in numbers with the illness.

Symptoms start up to three weeks after being infected and are initially non-specific. They include, headache, sore throat, joint and muscle

pain, diarrhoea and vomiting. Later a pink rash develops with abdominal pain and the patient rapidly becomes much more ill as kidney and liver failure develops and there is bleeding internally or externally through bodily orifices.

The disease is fatal on average in about 50% of cases but has varied from 25-90% in previous outbreaks. There is no drug or other treatment, apart from supportive care, and there is presently no vaccine to protect against the infection.

The origin of the virus was probably in fruit bats which were unaffected by it. It spread to other forest animals such as chimpanzees, gorillas and monkeys and subsequently into humans by consumption of meat infected with the virus.

Spread is then by human to human through direct contact with blood or body fluids from an infected person.



The virus invades body cells and then releases genetic content (ribonucleic acid) into the cells. The cells' mechanism for manufacturing genetic nucleic acid is taken over by the virus which is then able to replicate itself. The cells then produce new copies of the virus which are released back into the body to go on to infect further cells

The virus can survive for a few days outside the body but social activities such as shaking hands does not generally result in transmission.

Normally close physical contact is required through unprotected intercourse, consumption

of infected food products, by contact with infected needles or medical equipment or by contact with infected bodily fluids.

Because of the risks associated with needles and bodily fluids, health workers are at significant risk, particularly in endemic areas.

People caring for patients with the disease should wear masks, gowns, gloves and goggles. Washing with soap and water is effective at destroying the virus. Disposal of all medical equipment must be with great care.

Some of the fears for casual spread have been exaggerated through fear. The director of the Centres for Disease Control and Prevention in the USA has predicted that the virus will not spread widely in Western Countries because the Ebola virus does not spread through the air, like the flu or a cold virus, according to the CDC.

"If you sit next to someone on the bus, you are not exposed" the Director reported.

The diagnosis may be delayed because of the non-specific nature of the initial symptoms. The first clue to the diagnosis is often obtained by the history of travel in infected areas or contact with other patients suffering the disease.

Diagnosis is made by a blood sample on which a test can be performed to identify the presence of the virus.

Fortunately the risk is very low for a resident of the UK unless the individual has visited an area

where the infection is endemic, had intercourse with someone with the disease or has handled bodily fluids or equipment used in the treatment.

It is fortunate that patients with Ebola virus become infectious only very shortly before the symptoms appear and, as the illness progresses quickly, they are rapidly prostrated.

Not surprisingly, there are International Air Transport Association guidelines relating to any individual who develops any signs of infection on a flight returning to the UK from Africa.

The pilot will inform air-traffic control so that the unwell person can be assessed by a medical team on arrival.

As with many viruses, there is no specific treatment for Ebola virus.

Supportive care with rehydration and management of specific symptoms is the mainstay of the approach.

There is vaccine available for the treatment of some strains of Ebola Virus but is thought to be ineffective over the current reported strain.

Care of the infected individual is supported by appropriate surveillance, contact tracing, a high quality laboratory service and safe burials.

Those patients who have recovered from Ebola still carry the virus for some weeks afterwards. It has been shown to be present in the semen of previously infected men seven weeks after they had recovered.

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