Editorial

Ebola update

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Abbreviations: EVD, ebola virus disease; ELISA, antibody-capture enzyme-linked immuno sorbent assay; RT-PCR, reverse transcriptase polymerase chain reaction

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Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a severe, often fatal illness in humans. The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission. The average EVD case fatality rate is around 50%. Case fatality rates have varied from 25% to 90% in past outbreaks. The first EVD outbreaks occurred in remote villages in Central Africa, near tropical rain forests, but the most recent outbreak in West Africa has involved major urban as well as rural areas.

Community engagement is key to successfully controlling outbreaks. Good outbreak control relies on applying a package of interventions, namely case management, surveillance and contact tracing, a good laboratory service, safe burials and social mobilization. Early supportive care with re hydration, symptomatic treatment improves survival. There is as yet no licensed treatment proven to neutralize the virus but a range of blood, immunological and drug therapies are under development. There are currently no licensed Ebola vaccines but 2 potential candidates are undergoing evaluation. It is thought that fruit bats of the Pteropodidae family are natural Ebola virus hosts. Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals such as chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest.

Ebola then spreads through human-to-human transmission via direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and with surfaces and materials (e.g. bedding, clothing) contaminated with these fluids. Health-care workers have frequently been infected while treating patients with suspected or confirmed EVD. This has occurred through close contact with patients when infection control precautions are not strictly practiced. Burial ceremonies in which mourners have direct contact with the body of the deceased person can also play a role in the transmission of Ebola. People remain infectious as long as their blood and body fluids, including semen and breast milk, contain the virus. Men who have recovered from the disease can still transmit the virus through their semen for up to 7 weeks after recovery from illness. It can be difficult to distinguish EVD from other infectious diseases such as malaria, typhoid fever and meningitis.

Confirmation that symptoms are caused by Ebola virus infection are made using the following investigations: Antibody-capture enzyme-linked immuno sorbent assay (ELISA)

i. Antigen-capture detection tests

ii. Serum neutralization test

iii. Reverse transcriptase polymerase chain reaction (RT-PCR) assay

iv. Electron microscopy

v. Virus isolation by cell culture.

Samples from patients are an extreme biohazard risk; laboratory testing on non-inactivated samples should be conducted under maximum biological containment conditions. Good outbreak control relies on applying a package of interventions, namely case management, surveillance and contact tracing, a good laboratory service, safe burials and social mobilization. Community engagement is key to successfully controlling outbreaks. Raising awareness of risk factors for Ebola infection and protective measures that individuals can take is an effective way to reduce human transmission.

Risk reduction messaging should focus on several factors

Reducing the risk of wildlife-to-human transmission from contact with infected fruit bats or monkeys/apes and the consumption of their raw meat. Animals should be handled with gloves and other appropriate protective clothing. Animal products (blood and meat) should be thoroughly cooked before consumption. Reducing the risk of human-to-human transmission from direct or close contact with people with Ebola symptoms, particularly with their bodily fluids. Gloves and appropriate personal protective equipment should be worn when taking care of ill patients at home. Regular hand washing is required after visiting patients in hospital, as well as after taking care of patients at home. Outbreak containment measures including prompt and safe burial of the dead, identifying people who may have been in contact with someone infected with Ebola, monitoring the health of contacts for 21days, the importance of separating the healthy from the sick to prevent further spread, the importance of good hygiene and maintaining a clean environment. The Ebola outbreak in West Africa is the world deadliest to date and the World Health Organization has declared an international health emergency as more than 3,850 people have died of the virus in Guinea, Liberia, Sierra Leone and Nigeria this year.

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None.

Conflict of interest

The author declares no conflict of interest.