**Questions and Answers**

**Ebola Virus Disease (EVD)**

**General concepts**

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The following list of questions and answers on the general concepts of Ebola virus disease (EVD) is aimed at health professionals and decision-makers. These questions and answers complement information already published in different documents and guidance available at [www.paho.org/ebola](http://www.paho.org/ebola).

1. **What are the initial manifestations of EVD?**

The initial manifestations of Ebola are nonspecific and usually begin with fever, headache, weakness, sore throat, generalized pain, nausea/vomiting or diarrhea. This makes it essential to obtain the patient’s detailed travel history to evaluate the risk.

The initial symptoms and subsequent ones often overlap.

Patients do not always develop all signs and symptoms.

To detect suspected imported cases it is essential to investigate the travel history of patients and connect this information with their symptoms (even if the initial manifestations are nonspecific).

1. **Can flies or mosquitoes transmit the virus?**

Transmission by arthropod vectors has not been documented.

1. **How long does the virus remain alive on surfaces?**

Both the infectious capacity and the viability of a virus outside its host depend on many factors involving both the pathogen itself (chemical structure, type of genetic material, etc.) and environmental conditions (temperature, moisture, desiccation, UV rays, etc.).

To date, the only efficient vehicle for transmission of the Ebola virus that has been demonstrated is direct contact with the patient’s fluids (mainly during the symptomatic phase of the disease) through injured skin or mucous membranes.. In general, fomites (mainly dry blood) can keep the virus stable for up to 4-6 days at room temperature. The virus can survive for several hours on dry surfaces (tables, door handles, etc.).

Transmission by water has not been documented and it has not been established that the virus can survive in that medium.

1. **Transmission through food**

There are documented cases of the Ebola virus being transmitted through the improper handling and consumption of fruits and other food contaminated with infected bat feces, and through raw or poorly cooked meat. Infection occurs through the oral mucosa. The acidity of gastric secretions completely inactivates the virus.

1. **Are any characteristics of the disease different in children?**

There are differences both in clinical manifestations and clinical outcome. The most frequent signs and symptoms are fever (100%), weakness (75%), loss of appetite (70%), nausea/vomiting (70%), cough (65%), diarrhea (60%), and headache (50%). Hemorrhagic manifestations are less frequent than in adults (16% of cases). Gastrointestinal and respiratory symptoms are frequent, while signs of effects on the central nervous system (disorientation, convulsions, etc.) are infrequent.

The case-fatality rate in pediatric patients (40%) is lower than in adults. However, case fatality is higher in children under 5 years old, probably due to the higher viral load transmitted through direct contact with parents.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2141551/pdf/AFHS0102-0060.pdf>

1. **What is the average period of sickness in this outbreak?**

Data is not yet available on the average period of sickness in the current outbreak. Other outbreaks have shown an average period of 9 days (DRC, 1995) or 8 days (Uganda, 2000) between the onset of symptoms and death. In both outbreaks, survivors averaged 10 days between the onset of symptoms and the end of infectiousness. This information will be updated as more information on the current outbreak becomes available.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2870608/pdf/S0950268806007217a.pdf>

1. **Do survivors have life-long immunity to Ebola?**

Studies of survivors have demonstrated the presence of antibodies for up to 10 years. However, it is unknown whether these people remain immune for life or if they can be re-infected with a different strain of the Ebola virus.

1. **Are there special considerations for pregnant women with EVD? What about infants of mothers with EVD?**

According to published case series, pregnant women infected with the Ebola virus are at greater risk of miscarriage and serious bleeding, which means that their EVD-related mortality is slightly higher than in the general population.

If a nursing mother develops EVD, the most important recommendation is to immediately stop breastfeeding and to try to keep the infant safe from infection by separating it from the mother, under the care of other people. The people who take care of the infant must be trained and prepared for the management of suspected cases, since the infant is regarded as a contact. If the infant develops symptoms, caregivers should proceed immediately as in any other suspected case.

**References**

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* Legrand J, Grais R, Boelle P, Valleron A, and Flahault A. “Understanding the dynamics of Ebola epidemics.” Epidmeiol. Infect. (2007) 135, 610-621. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2870608/pdf/S0950268806007217a.pdf>