Infection prevention and control measures for Ebola virus disease

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Background

The unprecedented magnitude and geographic extent of the Ebola Viral Disease (EVD) outbreak in West Africa has overwhelmed the local response capacity, posing an extreme challenge for outbreak containment. Although the risk of spread within the EU/EEA is low, cases from the affected areas are already medically evacuated to Europe. For the management of an EVD case in a hospital or another healthcare facility, it is important to implement appropriate infection prevention and control (IPC) measures to ensure that there is no transmission of the virus to other patients, healthcare staff, other personnel and visitors [1-3].

IPC measures in healthcare facilities for hospitalised EVD cases are comprehensively addressed in guidance by WHO [4] as well as a number of national guidelines [5-7], available online for further reference.

Infection prevention and control measures

The Ebola virus is transmitted through breaks in the skin, mucous membranes, or parenterally. At present, the following is known about human-to-human transmission of the Ebola virus:

1. Transmission may occur through direct contact with the patient or with blood and other bodily fluids of the patient;
2. There is no evidence of airborne transmission [8,9], but precautions are warranted when aerosol-generating procedures (such as tracheal intubation) are performed.

The following IPC measures are recommended, based on currently available data and guidance documents [4-6], and taking into consideration the aforementioned statements on transmissibility:

a) Each confirmed or probable case of EVD and persons under investigation for EVD should be placed in an isolation room with a dedicated bathroom. There is no requirement for the use of negative pressure isolation rooms (with the exception of aerosol-generating procedures that require specific precautions – see below).
b) For any contact with the patient, healthcare workers should exercise standard precautions, droplet precautions **and** contact precautions.
c) When performing aerosol generating procedures (including intubation, bronchial suctioning, bronchoscopy, and sputum induction), healthcare workers should exercise airborne

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precautions (FFP3 respirator or equivalent) in addition to standard, droplet and contact precautions.

d) Healthcare workers engaged in routine patient care of a confirmed or probable case of EVD or a person under investigation for EVD should wear personal protective equipment (PPE), i.e. gloves, an impermeable gown, a medical mask, eye protection, and fluid-resistant, closed shoes or overshoes.
e) For patients with active bleeding or profuse diarrhoea or profuse vomiting, the use of double gloves and a FFP3 respirator or equivalent is recommended, in addition to other PPE (see above).
f) Healthcare workers should strictly follow the procedures for safe removal of PPE.
g) It is essential to ensure that the staff who are assigned to treat EVD patients are trained in the proper use of PPE [10].
h) The use of dedicated or, if possible, disposable medical equipment (e.g. blood pressure cuffs, stethoscopes and thermometers) is strongly recommended.
i) Visits to the patient should be limited to the minimum that is absolutely necessary. Visitors should be instructed to wear appropriate PPE. A register of visitors should be maintained and monitoring for symptoms of EVD for 21 days after the last visit to the patient is recommended.
j) The patient should remain in isolation (see above) until recovery from clinical symptoms of EVD and two consecutive antigen capture or PCR tests on blood specimens have been negative

Environmental cleaning and waste management

a) Staff engaged in environmental cleaning and waste management should wear appropriate PPE. This includes heavy duty rubber gloves, an impermeable gown, mask, eye protection and closed shoes or overshoes.

b) For surfaces or objects contaminated by blood or other bodily fluids or secretions, prompt cleaning followed by disinfection using standard hospital detergents and disinfectants are recommended.

c) Linen contaminated with bodily fluids should be placed in impermeable, clearly labelled bags to be transferred for washing or discarding.

d) Solid non-sharp waste should be placed in impermeable, clearly labelled bags to be discarded.

e) Sharp waste (e.g. knives, syringes) should be placed in hard plastic containers, labelled clearly and closed until destroyed.

f) Fluid waste (e.g. vomit, urine and diarrheal fluids) may be disposed in the sanitary sewer following adequate precautions (see above a) and b)).

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