Case definition for suspected Ebola virus disease (EVD) cases and evaluation of illness in travellers from EVD-affected countries

Case Definition for Suspected EVD

The case definition for suspected Ebola virus disease is as follows:

Any person* presenting with an acute onset of fever (≥38°C) with any of the following additional symptoms: severe headache, muscle pain, vomiting, diarrhoea, abdominal pain, or unexplained haemorrhage who has:

Visited or been resident in Guinea, Liberia, Sierra Leone, Nigeria or another country reporting imported cases with local transmission, in the 21 days prior to onset of illness

AND

- Had direct contact or cared for suspected/confirmed EVD cases in the 21 days prior to onset of illness, or been hospitalised in Guinea, Liberia, Sierra Leone, Nigeria or another country reporting imported cases with local transmission
  OR
- Has unexplained multisystem illness that is malaria-negative

*Healthcare workers in particular are at high risk

Risk assessment for a suspected EVD case

- No-risk patients
  This category of patient does not meet the case definition for suspected EVD. Such a patient may have a febrile illness with features suggestive of EVD (e.g. thrombocytopenia), but is not necessarily severely ill and lacks a history of contact with known EVD patients or any other risk exposures, and has not travelled to any countries either affected by the EVD outbreak or reporting imported EVD cases for at least 3 weeks prior to onset of illness.

- At-risk patients
  This category of patient has febrile illness with features suggestive of EVD, and is not necessarily severely ill, but has travelled to a country/ies either affected by the EVD outbreak or reporting imported EVD cases during the 3 weeks preceding onset of illness. Such a patient has not had direct contact with known EVD patients or fomites but may have an indirect association with such patients, e.g. the patient may have worked, resided in or
visited the same places as EVD patients. Although there may be no haemorrhages, it is assessed that infection with Ebola virus is possible.

• **High-risk patients**
  This category of patient is severely ill with fever and haemorrhagic manifestations, and has travelled to a country/ies either affected by the EVD outbreak or reporting imported EVD cases during the 3 weeks preceding onset of illness. Alternatively, the patient may not necessarily be severely ill, but has had definite exposure to Ebola virus, such as:
  a) Hospital and laboratory staff who have developed illness within 3 weeks of last known contact with a confirmed EVD patient or fomites associated with such patients
  b) Relatives and close associates of known EVD patients.

**Evaluation of Illness in Travellers**

It is critical to maintain a very high index of suspicion for common causes of febrile illness in persons who have travelled to Guinea, Liberia, Sierra Leone, and neighbouring countries, including: malaria, dengue fever, Lassa fever and other endemic diseases (e.g. typhoid fever). These may be severe and life-threatening, and healthcare workers are urged to do appropriate tests and institute appropriate therapy as a matter of urgency. Malaria is the most likely cause of an acute febrile illness in returning travellers from most African countries and has to be prioritised for testing. However, Lassa fever is endemic in certain West African countries, including Nigeria, Sierra Leone, Guinea and Liberia - and needs to be considered in the differential diagnosis for unexplained febrile illness in any traveller from these countries who has visited rural areas.

Lassa fever virus is transmitted to humans through direct contact with urine and droppings of infected multi-mammate rats, which contaminate the environment and food items. Transmission can also occur through the inhalation of aerosolised infected rodent excreta. Person-to-person transmission is also important, being common in both village and healthcare settings, and occurs through direct contact with blood, tissue, secretions or excretions of an infected person; therefore, VHF isolation precautions are recommended for nursing patients with Lassa fever. The incubation period is 1-3 weeks; symptoms include fever, retrosternal pain, sore throat, back pain, cough, abdominal pain, vomiting, diarrhoea, facial swelling and mucosal bleeding. Mortality rates approach 20%, with pregnant women in their third trimester being at highest risk for severe disease and death. Given that the incubation periods and clinical presentations of Lassa fever and EVD may overlap, both diseases must be excluded in persons who have a suggestive travel history and present with a febrile illness.