Ebola virus disease (EVD)
Updated information for health professionals

15 August 2014

1.0 Introduction

This document provides updated information on Ebola virus disease (EVD) which is complementary to or, where there are differences, supersedes the information provided in the Communicable Disease Control Manual 2012.

2.0 Background information on EVD

Ebola viruses

EVD is caused by a virus of the *Filoviridae* family. Five species of Ebola virus have been identified, namely Zaire, Sudan, Reston, Tai Forest and Bundibugyo, from samples collected during human and non-human primate outbreaks since the first outbreak in the Democratic Republic of the Congo in 1976. Fruit bats of the *Pteropodidae* family are considered to be a likely natural host of the Ebola virus, with outbreaks of EVD occurring occasionally amongst other species such as chimpanzees, gorillas, monkeys and forest antelope.

Transmission

EVD is introduced into the human population through close contact with the blood, secretions, other bodily fluids or organs of infected animals (often through hunting or preparation of "bushmeat"). EVD then spreads through person-to-person transmission via contact with the blood, secretions, organs or other bodily fluids of infected people, and indirect contact with environments contaminated with such fluids, including in healthcare settings. The risk for infection in healthcare settings can be significantly reduced through the appropriate use of infection control precautions. Transmission through sexual contact may occur up to seven weeks after clinical recovery. Airborne transmission, as occurs for measles or influenza, has never been documented. There is no evidence that simple physical contact with a sick person is sufficient for contracting EVD. Contact with heavily contaminated objects (such as bedding) can possibly facilitate transmission. Traditional burial ceremonies in affected countries are a known high risk activity for transmission.

Incubation period, symptoms and signs

The incubation period varies from 2 to 21 days, most commonly 8-10 days. People are not infectious before symptoms develop. The onset of symptoms is sudden and includes fever, intense weakness, myalgia, headache, nausea and sore throat. This is followed by vomiting, diarrhoea, impaired kidney and liver function, rash, and in some cases, both internal and external bleeding. Laboratory findings frequently include low white blood cell and platelet counts, as well as elevated liver enzymes. Some cases present with profuse internal and external bleeding, which can progress to shock and multi-organ failure. The case-fatality ratio for the Zaire strain of Ebola virus is estimated to be between 50% and 90%.

Treatment

Care for EVD is supportive, as there are no specific approved prophylactic (vaccine) or therapeutic (antiviral drugs) options available for treatment. Other diagnoses, such as malaria or typhoid fever are more likely than EVD in ill travellers from affected countries. Based on clinical assessment, it may be appropriate to treat for other diseases empirically whilst awaiting diagnostic EVD results.

EVD is a notifiable disease

EVD is notifiable as a viral haemorrhagic fever under the Health Act 1956. Suspected cases of EVD or any viral haemorrhagic fever, must be notified to the Medical Officer of Health and 0800 GETMOH immediately.

3.0 Current situation

An outbreak of EVD has been occurring in West Africa since December 2013. It is the largest outbreak of EVD ever reported, both in terms of the number of cases and the geographical spread. It is also the first time the EVD has spread to large cities.

Declaration of a Public Health Emergency of International Concern (PHEIC)

On 8 August 2014, the World Health Organisation (WHO) Director General declared the ongoing Ebola Virus Disease (EVD) outbreak in West Africa to be a PHEIC. This decision was based on the advice and assessment of an Emergency Committee convened under the International Health Regulations. It is only the third time a PHEIC has been declared (the first was for the 2009 H1N1 influenza pandemic, the second was in May 2014 in response to the international spread of wild polio virus).

The WHO issued a series of recommendations for states with EVD transmission, those with potential or confirmed EVD cases and those with land borders with affected states. These recommendations are intended to assist with containing the outbreak and preventing further international spread. The WHO also issued a series of recommendations for all states which are applicable to New Zealand.

Situation Updates

The WHO website has latest situation updated and other information:

http://www.who.int/csr/don/en/

The CDC website has an up-to-date map of countries affected by EVD:

http://www.cdc.gov/vhf/ebola/resources/distribution-map-guinea-outbreak.html

4.0 General recommendations for health professionals

For suspected cases of EVD (as per the case definition):

1. Transmission-based precautions should be immediately implemented (contact and droplet), including the use of personal protective equipment (PPE). The suspected case should be placed in a single room if available.
2. The suspected case should be immediately notified to the local Medical Officer of Health and 0800 GET MOH.
3. In consultation with the Medical Officer of Health and an Infectious Disease physician, the suspected case should be hospitalised in a single room with negative pressure air handling. Airborne transmission precautions apply to aerosol generating procedures and in the laboratory.

Recommended infection prevention and control measures

Infection prevention and control guidance has been developed by the Ministry of Health for close contact with a patient suspected or confirmed to have viral haemorrhagic fever:

http://www.health.govt.nz/our-work/diseases-and-conditions/ebola-information-health-professionals

The WHO also provides guidance on infection control:

http://www.who.int/csr/bioriskreduction/filovirus_infection_control/en/

Laboratory testing processes for EVD in New Zealand

- Testing for EVD is conducted in a Physical Containment level 4 laboratory in either Australia at the Victorian Infectious Diseases Reference Laboratory (VIDRL), Peter Doherty Institute, Victoria or at the Centres for Disease Control and Prevention, Atlanta, United States. Instructions for the shipping of samples are included in the "Sample Shipping Process" document.
- Routine haematology and other tests should be minimised since blood is highly infectious. Patient management testing should be carried out using a point of care testing device.