

Ebola virus disease: Risk assessment in the Western Pacific Region

1. Background

The Ebola virus disease (EVD) outbreak in West Africa, first reported to the World Health Organization (WHO) in March 2014, is unprecedented in scope, severity and complexity. This is the first time an outbreak of EVD has been reported in this part of Africa. The outbreak is evolving faster than response and containment efforts due to several factors: inadequate health systems and infrastructure; transmission in urban settings; fragile economies due to recent civil war; cultural practices that facilitate transmission; and community misperceptions of EVD. Affected countries are struggling to control this crisis, resulting in the rapidly rising number of cases and deaths.

On 8 August 2014, under the International Health Regulations or IHR (2005), the WHO Director-General declared this outbreak a **Public Health Emergency of International Concern (PHEIC)**. The outbreak is no longer a public health emergency: it is now a humanitarian crisis.

In the Western Pacific Region, no confirmed EVD cases have been reported to date. Member States are keenly aware and sensitive to the ongoing EVD outbreak. Some Member States reported sick travellers returning from Ebola-affected countries, but they were negative for EVD after investigation. Confirmation of the first imported cases in Nigeria and the United States of America, by air travel has provided evidence that the virus can be spread by international travel.

Based on the outbreak in West Africa, a risk assessment was conducted by the WHO Regional Office for the Western Pacific. The objective was to assign the level of risk of EVD to direct and prioritize preparedness planning in the Region **for the following six to nine months**. The results of the assessment may change as information evolves.

2. Risk assessment

The possibility of imported EVD cases to the Region is not high but if it occurs the consequences would be major. Vigilance is needed to ensure early detection and rapid response.

If an imported EVD case presents in a country or area of the Region, secondary transmission is inevitable. Infection of health workers, stress on health systems, potential reputational damage to government authorities and economic loss are some possible consequences.

WHO is working with Member States on preparedness to ensure readiness to respond to EVD, and mitigate any negative impact.

3. Possible scenarios in the Western Pacific Region

The following three scenarios have been considered over the next six to nine months:

- 1) A single case of EVD without ongoing human-to-human transmission;
- 2) A localized cluster due to human-to-human transmission in a health facility and/or household; or
- 3) Widespread and intense transmission.

Scenario 1: A single case of EVD without ongoing human-to-human transmission

The chance of a case in the Region depends on the epidemiological situation in West Africa. As the outbreak increases in magnitude, so does the chance of an imported case in this Region. Since August 2014, there has been an exponential increase in cases in Guinea, Liberia and Sierra Leone. Travel-related cases have occurred in several countries including Nigeria, Senegal and the United States of America, highlighting the possibility of case importation. Based on one recent modelling prediction, unless control measures improve quickly, the number of cases would increase to 20 000 by 2 November 2014.ⁱ

The incubation period of 2-21 days facilitates long-distance travel prior to symptom onset, making imported cases more likely. Although there are no direct flights between the Western Pacific Region and West Africa, there is still a possibility of an imported case occurring.

Based on this information, the chance of an imported EVD case in the Region is still possible, although low. The Western Pacific Region has been a hotspot for emerging infectious diseases. In recent years, through implementation of the Asia Pacific Strategy for Emerging Diseases or APSED the IHR (2005) core capacities have improved, including surveillance and response systems. The Region is diverse, and the level of preparedness varies from country to country. Due to the nature of the EVD outbreak, and public fear associated with it, an increased demand in risk communications is expected.

Scenario 2: A localized cluster due to human-to-human transmission in a health facility and/or among social contacts

If an imported case occurs, the chance of limited secondary transmission would be moderate to high. Frontline health workers, patients, health facility visitors and social contacts would likely be exposed. The following measures will reduce the chance of secondary cases occurring: clinician awareness of EVD as part of health facility preparedness; a well-developed case definition; a clinical triage, testing and reporting protocol; consistent application of the appropriate precautions to manage a case; strict adherence to infection prevention and control measures; and contact management.

A cluster of EVD following an imported case in the Region would be of moderate to high consequence. Direct health consequences include the high morbidity and mortality of EVD, potential infection of health workers, and the need for rapid and comprehensive contact tracing and management as part of a containment strategy. The health system may become overburdened, there may be financial losses through a drop in travel and trade, and subsequent political consequences, including reputational damage to the government.

Scenario 3: Widespread and intense transmission

Even if there is a localized cluster, the chance of progression to widespread and intense transmission of EVD in the Region would be very low, as there would need to be undetected cases of EVD in the community. As EVD is severe, most cases would present to a health facility for treatment.

If widespread and intense transmission were to occur, there would be major consequences for health services. The high morbidity and mortality of EVD during community outbreaks could potentially affect entire families. The psychosocial impact on those directly affected, or on those who have responded to the outbreak, would be major.

ⁱ WHO Ebola Response Team (2014). Ebola Virus Disease in West Africa— The First 9 Months of the Epidemic and Forward Projections. 23 September 2014, *The New England Journal of Medicine*.

The economic and political consequences are also expected to be significant, including a drop in tourism and trade due to fear. Social and psychological consequences from stigmatization and racial profiling are possible, among nationals and people associated with countries affected by EVD.

4. Recommendations

Strengthening capacities to implement EVD prevention, preparedness and control measures will decrease the level of risk associated with imported cases. APSED (2010) guides Member States in strengthening the IHR (2005) core capacities including effective preparedness to respond to emerging infectious disease threats, including EVD. Preparedness for a potential outbreak of Ebola virus disease: A framework for action provides Member States with guidance for operational planning for response based on the APSED (2010) focus areas.

Summary

The possibility of imported EVD cases to the Region is not high but if it occurs the consequences would be major. Vigilance is needed to ensure early detection and rapid response.

If an imported EVD case presents in a country or area of the Region, secondary transmission in the form of small clusters of EVD following the imported case is moderate to high. If surveillance systems and clinical triage fail to detect imported cases, and appropriate infection prevention and control measures are not in place, clusters would be likely in health-care settings or among close contacts.

The consequences of secondary transmission would be moderate to high depending on health system capacities to rapidly contain an outbreak. Secondary transmission could result in infections in health workers, stress on health facilities and services, potential reputational damage to government authorities and economic loss. Effective risk communications would be critical to emergency risk management in all EVD introduction and transmission scenarios.

Preparedness activities based on key components of the APSED (2010) would ensure that the Region is ready to respond to any scenario and mitigate negative consequences.