



Risk assessment of the Ebola virus disease outbreak in West Africa: Updated 20 November 2015

Summary

Following almost 29,000 cases of Ebola Virus Disease (EVD) in West Africa, the current epidemiological situation in West Africa is significantly improved. Liberia and Sierra Leone have been declared free of Ebola transmission and following weeks of low levels of active transmission in Guinea, no new cases have been reported for two weeks. There remains a low possibility of new cases arising during the 90 day period of enhanced surveillance which follows a country's declaration of freedom from EVD transmission. Although persistence of virus in survivors has been increasingly recognised, the risk of transmission is very small and this risk will decrease with increasing time from the original onset of disease symptoms. There is a diminishing risk to the population of the United Kingdom and the likelihood of further new EVD cases being treated within the UK is very low with the risk of transmission occurring within the community in the UK remaining as **negligible**.

The situation could change and will continue to be monitored very closely.

Introduction

Over 28,500 cases of EVD have been reported associated with the outbreak in West Africa between March 2014 and the end of October 2015. The current situation is that while Liberia and Sierra Leone were declared EVD transmission free in September and November 2015 respectively, there remains a low possibility of new cases arising during the 90 day period of enhanced surveillance. Low levels of active transmission have been confined to geographically restricted areas in Guinea in recent weeks.

Further detail and more up to date information on the epidemiology of the outbreak can be found in the PHE [monthly Ebola Epidemiological Update](#) and the previous more detailed [risk assessment](#) is also available.

Risk assessment for the UK population

Background

No previous EVD outbreak has been as widespread and resistant to management or control as the current one has been. Before 2014, the only known European EVD cases were associated with laboratory exposure (in the UK in 1976) or medical evacuation (in Switzerland in 1994).

To date, three individuals affected by EVD contracted during the West African outbreak have received care for their initial infection in the UK; two who were medically evacuated for clinical care after diagnosis in Sierra Leone – the last in March 2015 - and one imported case in a healthcare worker (HCW) who had recently returned from Sierra Leone in December 2014. After being discharged from hospital in early 2015, the UK imported case was re-hospitalised in October 2015 for EVD-related complications due to reactivation of their infection.

As the number of new cases has reduced significantly, issues of viral persistence in survivors have become increasingly recognised.

Assessment of likelihood of further EVD cases in the UK

The likelihood of further imported EVD cases into the UK is related to the scale of the outbreak, control measures in place to prevent its spread, and the numbers of people entering the UK from affected areas of West Africa.

Scale of outbreak: There has been a significant decline in case incidence in West Africa in recent months, with only Guinea consistently reporting low levels of active transmission in defined geographical areas over the past 4 months and no new cases within the past two weeks. There are currently no EVD contacts under surveillance. Sierra Leone and Liberia are now considered EVD-transmission free and the likelihood of spread to other countries has decreased considerably. This situation could change and will continue to be monitored very closely.

Measures in place to control EVD spread: The significant progress in outbreak control in the affected countries in West Africa has been due to the rapid detection and interruption of chains of transmission. This has been achieved by measures put in place to allow fast diagnosis of cases (ante and post-mortem), prompt isolation and treatment of affected individuals, identification and monitoring of all contacts of cases and greater community engagement with all the above measures. As the situation continues to improve, these measures will remain in place with a greater emphasis being placed on preventing the outbreak re-emerging due to missed

transmission chains or a reintroduction from wildlife or survivors. To this effect, a 90-day period of heightened surveillance is required for all recently affected countries subsequent to being declared EVD-transmission free.

Numbers entering UK: As the situation continues to normalise, the number of persons returning from West Africa may increase. The high risk UK workers deployed to West Africa involved in the direct or indirect care of infected individuals will be replaced by workers involved in recovery and rebuilding in addition to travellers for trade and family reasons, all of whom will be at a much lower risk of infection.

The risk from individuals returning from West Africa has diminished considerably as transmission has been brought under control in Sierra Leone and Liberia and confined to limited transmission chains in Guinea. This situation could change and will continue to be monitored very closely.

Exit screening at airports will remain in place in affected countries during the period of heightened surveillance.

Risk from Ebola survivors

Although evidence gained during this outbreak indicates that sporadic cases of EVD may occur in contacts of survivors via infected body fluids, this is a relatively rare occurrence. Recrudescence of disease has also been shown to be possible in survivors but this is even rarer and, to date, no onward transmission has been reported from such affected individuals. Further research is ongoing to determine the nature, duration and implications of virus persistence in survivors.

However, the risk of transmission is very small and this risk will diminish with increasing time from the original onset of disease symptoms. In order to manage the potential risk of transmission from survivors, appropriate prevention advice is being provided in affected countries.

Risk of an imported case in UK

With Sierra Leone and Liberia being declared Ebola-transmission free and no current transmission in Guinea (which has few travellers entering the UK), the risk of an imported case is **negligible** and similar to the threat of an imported case of a viral haemorrhagic fever that existed before this outbreak.

1. Risk of importation from humanitarian and other aid workers

The exposure of humanitarian and other workers to Ebola virus in West Africa has reduced significantly. Apart from potential exposure to Ebola virus during clinical care of survivors, the risk of acquiring infection is now very low. The last case in an international worker was reported in Italy in May 2015.

The UK introduced the system of identifying returning workers and others at airports and the provision of advice to them which mitigated the risks of transmission, but with so few cases in West Africa, this is being reviewed. Arrangements remain in place to manage any further cases within the NHS.

2. Risk of importation from other persons returning from affected areas

To date, a single imported EVD case in a traveller (not involved in the EVD response) has been recorded outside of Africa. The incident in Dallas, US (September 2014) resulted in secondary transmission to two HCWs providing clinical care to the patient.

Persons other than workers involved in the EVD response who arrive in the UK from the affected area may present a further potential source of importation but this is an ever reducing threat. The low-level transmission has been restricted to discrete areas of Guinea for many months, and so the potential of transmission is likely to be confined to survivors. This very small risk will diminish as the interval since their initial diagnosis increases. Therefore, based on current knowledge, the risk of an imported case in the UK arising from other travellers is assessed as **negligible**.

Risk to the UK population

1. Risk to the UK population from an imported acute case of EVD infection

Since Sierra Leone and Liberia have been declared EVD transmission free, and Guinea has had a low level of transmission restricted to certain geographical areas, the risk to the UK population from an acute case of Ebola returning to the UK is **negligible** as:

- a UK national diagnosed with a viral haemorrhagic fever in West Africa would be medically evacuated under controlled conditions as happened before the EVD outbreak
- the system of registration and follow-up that continues for workers returning to the UK means that cases would be detected and isolated early to prevent onward transmission
- Border Force staff have been working closely with PHE and are alert to the detection of possible cases in returning travellers
- systems are in place to safely manage and care for any cases within the NHS
- EVD survivors are advised regarding appropriate risk prevention measures
- the accumulated experience of several countries managing EVD in returning workers who developed symptoms after arrival home without any secondary transmission
- there has always been a risk of a viral haemorrhagic fever in people returning from West Africa, since Lassa fever is endemic in this area, and there has been no recognised transmission in the UK

2. Risk to the general population from an unrecognised community case

There is evidence of persistence of Ebola virus in semen and other body fluids of survivors, and although molecular positivity has not been clearly associated with virus infectivity, sexual transmission has been documented. However, there are very few survivors either living or visiting in the UK, and there is declining viral persistence with increasing months since the onset of EVD.

While the implications of an unrecognised case in the community could be extremely serious, the risk to the general population from such a case is considered to be **negligible**.

Globally to date, only one community case of EVD outside of Africa has been reported associated with a traveller (Dallas, US), and this was in September 2014 when uncontrolled transmission was occurring in West Africa. No incidents of community transmission were reported. In addition, a number of EVD cases diagnosed outside of West Africa would have had variable degrees of contact in the community prior to diagnosis but no community transmission occurred.

Risk to healthcare workers in UK

There is the potential risk of transmission for invasive procedures on survivors with viral persistence, but this should be mitigated by the normal infection control measures associated with such procedures. In addition, the number of survivors in the UK is small and there is declining viral persistence since onset of acute infection. Recrudescence of infection has also been reported in EVD survivors, but the evidence so far is that this is extremely rare and associated with severe disease. This is likely to be known by the investigating clinician and appropriate precautions should be taken.

The UK has robust and tested procedures for managing and caring for patients with viral haemorrhagic fevers. There has been no transmission to HCWs involved in the care of patients with any viral haemorrhagic fever in the UK, including those recently involved in provision of clinical care to the three UK EVD cases.

For HCWs involved in direct care of confirmed VHF patients in controlled environments or EVD survivors, the risk is **negligible**.

The likelihood of any other HCW coming into contact with an EVD case is **negligible**.

Conclusion

It is accepted that the situation in West Africa may change at any stage and this will be continued to be monitored closely. Any change in epidemiology of EVD will lead to a review of the risk categories and profiles.

Other information

Actions in the event of a possible case

The management of suspected cases is laid out in the risk assessment algorithm and guidance produced by the Advisory Committee on Dangerous Pathogens.

<https://www.gov.uk/government/publications/viral-haemorrhagic-fever-algorithm-and-guidance-on-management-of-patients>

WHO roadmap situational updates:

<http://www.who.int/csr/disease/ebola/situation-reports/en/>

Updated maps of areas affected:

<https://phe.maps.arcgis.com/apps/Viewer/index.html?appid=6b47b738f1cc40c688eff341544c1c5a>

<http://www.who.int/csr/disease/ebola/maps/en/>

There is a wealth of information on the following websites:

PHE: <https://www.gov.uk/government/collections/ebola-virus-disease-clinical-management-and-guidance#public-health-management>

PHE: <https://www.gov.uk/ebola-and-marburg-haemorrhagic-fevers-outbreaks-and-case-locations>

WHO EVD: <http://www.who.int/csr/disease/ebola/en/>

WHO virus persistence in survivors: <http://www.who.int/csr/disease/ebola/virus-persistence/en/>

WHO EVD resources: <http://www.who.int/csr/resources/publications/ebola/en/>

European Centre for Disease Control:

http://ecdc.europa.eu/en/healthtopics/ebola_marburg_fevers/Pages/index.aspx

CDC: <http://www.cdc.gov/vhf/ebola/>

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