



Risk assessment of the Ebola virus disease outbreak in West Africa: Updated 24 June 2015

Summary

As the epidemiological situation in West Africa continues to improve, the risk to the UK population is decreasing. While the risk of further EVD cases being imported into the UK is currently considered to be **very low**, the risk of transmission occurring within the community in the UK is, and is expected to remain, **negligible** due to the range of robust measures that have been put in place. There is a diminishing likelihood that further cases will occur in the UK.

Introduction

The outbreak of EVD in West Africa continues although weekly case numbers have declined significantly. Over 27,000 cases had been reported by the end of May 2015.

While the overwhelming majority (>99.9%) of cases have been reported from Guinea, Liberia and Sierra Leone, since the start of the outbreak cases have also been reported from Italy, Mali, Nigeria, Senegal, Spain, the UK and the US. Countries have been affected to variable degrees, reporting (a) current or a history of persistent transmission (Guinea, Liberia and Sierra Leone), (b) limited local transmission following importation of a case(s) (Nigeria, Mali, Spain and US), or (c) importation of a case with no onward transmission (Italy, Senegal, US and UK). To date, seven countries affected since March 2014 are now considered to be EVD free (Liberia, Mali, Nigeria, Senegal, Spain, UK and US).

Recent reports have indicated a significantly improving epidemiological situation in West Africa. **Liberia was declared free of EVD transmission** on 9 May 2015, and is now undergoing a period of heightened vigilance for 90 days.

In Guinea and Sierra Leone, case numbers have declined considerably but fluctuations in weekly incidence continue. Whilst EVD transmission is currently occurring across a narrowed geographical distribution, both countries continue to experience areas becoming newly affected or re-affected. Unrecognised chains of transmission and community resistance to control measures persist and hamper the response. The arrival of the rainy season brings a further challenge, especially to effective contact tracing. Sustained effort will be required for the foreseeable future.

The situation continues to evolve. Further detail and more up to date information on the epidemiology of the outbreak can be found in the PHE [Weekly Ebola Epidemiological Update](#).

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 repatriation (in Switzerland in 1994).

To date, three EVD cases associated with this outbreak have received care in the UK; two who were medically evacuated for clinical care after diagnosis in Sierra Leone and one imported case in a healthcare worker (HCW) who had recently returned from Sierra Leone.

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 epidemic, factors in place to control it, and the numbers of people entering the UK from affected areas of Africa.

Scale of epidemic: There have been significant declines in case incidence in Guinea and Sierra Leone, and Liberia is now considered EVD free. While the potential for spread to other countries remains, the likelihood of this occurring is considerably decreased.

Numbers entering UK: While the numbers of returning travellers (not involved in the EVD response) are currently low, the UK has played a significant role in assisting the response in Africa with considerable numbers of staff (>4000) having been deployed. The number of people returning from affected areas is now likely to decrease as the response efforts shift to recovery and rebuilding.

Control measures remain in place in affected countries to prevent the exportation of cases (WHO stipulated exit screening at airports). While many UK workers deployed to West Africa since October 2014 were involved in the direct or indirect care of infected individuals, currently many fewer infected patients are being cared for. Nevertheless, despite procedures strictly implemented to prevent transmission, there is still a possibility that infection may occur in clinical or other settings. The recent case in Italy occurred in a returning HCW.

In recognition of this risk mitigation strategies were implemented to reduce the threat to the UK population. These included proactive control measures such as entry screening procedures and mechanisms for follow-up of potentially exposed individuals and reactive mechanisms such as contact tracing procedures. As of 15 June, almost 9000 passengers have been screened at entry to the UK, and 595 were assessed as having had potential direct contact with EVD and were monitored for 21 days. In the coming months, if the situation in West Africa continues to improve then fewer workers returning to the UK will require 21 day follow up as fewer of them will have been in contact with EVD cases.

Risk of an imported case in UK

Imported cases could arise in either a returning worker or other person arriving from an affected country. All three cases of EVD so far cared for in the UK occurred in returning healthcare workers. Two were medically evacuated after confirmation of EVD and one was diagnosed after their return to the UK.

1. Humanitarian and other aid workers

The exposure of humanitarian and other workers to Ebola virus in West Africa depends on the activities they have undertaken, including activities outside of their working environments. While the risk of exposure and possible infection with Ebola virus is recognised for such workers, measures are in place to mitigate these risks. To date 23 EVD cases have been reported in international workers during or following work in West Africa, including the three workers who received care in the UK, and the more recent case in Italy.

The declining numbers of cases of Ebola in the affected countries mean that fewer healthcare workers are being deployed and many returning health care workers will not have faced a significant risk of exposure to Ebola. Therefore screening and monitoring teams are now allowed more flexibility to take account of these changes.

Although fewer deployed workers are likely to have been exposed to EVD, the risk of an occasional case still exists but remains very low. However, experience in the UK has demonstrated that the system of identifying returning workers and others at airports and the provision of advice to them, mitigates or reduces the risks of

transmission. 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 affected countries continue to present a further potential source of importation. However, this risk is decreasing as case numbers decline and transmission is restricted to discrete areas of Guinea and Sierra Leone. Mitigation strategies (exit and entry screening) remain in place and contribute to reducing this risk. There are still no direct flights from affected countries to the UK. The Foreign and Commonwealth Office has recently revised its advice for travel to Liberia, but continues to advise against all but essential travel to Guinea and Sierra Leone.

Therefore, based on current knowledge, the risk of an imported case in the UK arising from other travellers is assessed as **very low**.

Risk to the UK population from imported EVD cases

Taking into consideration the likelihood of imported cases in the context of proactive and reactive mitigation strategies in place, it is possible to assess the risk EVD presents to distinct groups within the population.

Risk to the general population in the UK

1. Risk to the general population from a person screened on entry or medically evacuated to the UK

The risk to the UK population from medically evacuated cases, returning workers and others who have been screened on entry to the UK is **negligible** because:

- a person diagnosed with EVD in West Africa would be evacuated under controlled conditions
- exit screening is in place in airports in affected areas to prevent symptomatic individuals travelling
- Border Force staff and PHE undertake screening at key ports for all persons returning from transmission areas (including returning workers). This additionally allows targeting of information to these groups. Information sheets describe the symptoms of EVD and emphasise the need and mechanisms how to present to medical care early

- the system of registration and follow-up that has been put in place for workers returning to the UK means that cases would be detected and isolated early to prevent onward transmission
- clinicians in the UK have been alerted to the detection of possible cases in returning travellers and this increases the likelihood that if a case were to occur, it would be diagnosed early
- systems are in place to safely manage and care for any cases
- the accumulated experience of several countries managing EVD in returning workers who developed symptoms after arrival home without any secondary transmission

Globally to date, three EVD cases have been diagnosed in HCWs following their return from West Africa (in Italy, UK and US). In these incidents, the HCWs were screened on arrival to their respective country and developed symptoms subsequently. No incidents of community transmission were associated with these cases (19, 55 and 117 contacts were followed up in Italy, UK and US respectively).

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

The likelihood of an unrecognised community case of EVD is **negligible**. All travellers arriving into the UK from affected countries will continue to be screened on entry.

The presence of mitigating measures and controls and widespread provision of advice to health and other professionals should ensure early detection and diagnosis in the unlikely situation of a case occurring in the community.

These include:

- provision of information to humanitarian aid and other workers and other travellers
- registration of returning workers, and their follow-up
- raised awareness of health professionals
- provision of detailed advice to the NHS
- rapid diagnostic facilities
- a well-organised coordinated public health response

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, September 2014), and 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

1. Those caring for known EVD patients

To date, three locally acquired (one in Spain and two in the US) EVD cases in staff involved in the care of two patients have occurred during the management of 27 confirmed EVD cases cared for in Europe or the US.

These incidents of local transmission outside Africa all occurred during patient care in the terminal stages of disease, when the patient would have been highly infectious. Lapses in technique are likely to have occurred, though were not recognised.

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.

Before 2014, only four patients with EVD had been treated in non-endemic countries; one in the UK (1976), one in Switzerland (1994), and two in South Africa (1996). In only one of these was a secondary transmission documented. This was in South Africa, and occurred during the management of the index patient who was not known to have EVD at the time. Over 400 contacts were followed up during these four historical incidents.

For HCWs involved in direct care of confirmed EVD patients in controlled environments, the risk is **very low**.

2. Those caring for EVD patients prior to diagnosis

The UK has robust and tested procedures for managing and caring for patients with suspected viral haemorrhagic fevers. If persons are screened on entry to the UK, risk appropriate advice is provided to them on actions to take if they become unwell. These actions allow for suspected EVD cases with a recognised risk of EVD exposure to be managed within clinical settings in a manner which minimises risk of transmission, particularly prior to diagnosis.

Thus, there is a **very low risk** to HCWs caring for EVD patients prior to diagnosis if procedures are followed. These procedures have proven effective as demonstrated by the case imported into the UK in December 2014.

3. Any other healthcare worker

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 continues to evolve and these risk categories can change at any stage. The risk profiles above will be reviewed on a weekly basis or if there is a significant change in the parameters outlined in the beginning of this document.

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>

Epidemiological updates

The total number of cases is subject to frequent change due to on-going transmission, reclassification, retrospective investigation, and availability of laboratory results. PHE publishes a weekly epidemiological update, which is available on the PHE website at: <https://www.gov.uk/government/publications/ebola-virus-disease-epidemiological-update>

On 29 August 2014, the WHO issued an **EVD response roadmap** to guide and coordinate the international response. **Situation reports** are published weekly and **data are made available** almost daily.

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/>

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

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 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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