

*These Questions and Answers on Ebola virus disease for hospital staff have been developed in the context of the 2014 Ebola epidemic in west Africa.*

# Ebola virus disease for Hospitals

**Updated: 27 November 2014**

## GENERAL

### *What is the risk of someone presenting with Ebola in NSW?*

There is a very low risk of someone presenting with Ebola Virus Disease (EVD) to any healthcare facility in NSW. There are only a small number of people arriving to NSW from EVD affected areas each week and exit screening has been implemented in west African countries to discourage ill people from travelling.

Arrivals from EVD affected countries will be notified to public health authorities and a surveillance system is in place to recognise if they develop concerning symptoms and ensure they receive appropriate care at Westmead Hospital or the Children's Hospital Westmead, the designated EVD hospitals for NSW.

## BORDER SCREENING AND SURVEILLANCE

### *What border screening measures are in place?*

People arriving from west Africa will be screened at the border with a series of risk assessment questions and temperature check. High risk exposures or fever will be referred directly to public health authorities. All arrivals will also be provided with an information sheet with a national HealthDirect phone number to contact in case of illness.

### *Will aid workers returning from West Africa be placed under quarantine?*

Aid workers returning from West Africa will be assessed and monitored by local public health authorities to ensure their health and the safety of others. The recommendations are for aid workers to monitor their temperature twice daily, perform no clinical work and avoid going to crowded areas during the 21 day incubation period. Additional restrictions may be recommended if aid workers have had higher risk exposures. Routine home quarantine of people with no symptoms is not recommended as Ebola is not infectious prior to the onset of symptoms.

### *Will all travellers from West Africa be placed under quarantine?*

NSW health is working closely with partners at border protection to identify people returning from areas with widespread Ebola transmission. Arrivals from west Africa will be assessed and monitored by local public health authorities to ensure their health and the safety of others. Restrictions on social mixing or travel will depend on the level of risk. Routine home quarantine of people with no symptoms is not recommended as Ebola is not infectious prior to the onset of symptoms.

## PATIENT MANAGEMENT

### *What should NSW hospitals do if they have a patient with suspected EVD?*

Early recognition is critical for infection control and patient outcome. EVD should be considered in anyone with a fever AND report of returning from a country where there is a current EVD outbreak within 21 days OR report having had contact with a known or highly suspected case of EVD within 21 days of illness onset.

Personal protective equipment (PPE) is recommended prior to being in contact with any patient under investigation for EVD. (Please see below).

The patient should be assessed according to the EVD risk assessment algorithm and local public health and infectious diseases specialists should be contacted to discuss an appropriate management plan. The details for the assessment process are in the VHF Contingency Plan and the EVD assessment algorithm .

Will hospitals other than the designated EVD hospitals (Westmead Hospital and Children's Hospital Westmead) be managing cases of EVD?

All efforts will be made to transport patients with suspected or confirmed EVD to the designated hospitals. There is a small chance that the clinical severity of the illness may make it inappropriate to immediately transfer a patient. NSW Health is working with Intensive Care Units (ICU) throughout the state to prepare them for this rare scenario. Contingency planning is underway to provide affected hospitals with extra support should this occur.

### ***Is there a specific vaccine or treatment for Ebola virus disease?***

At this time there are no specific vaccines or treatments for EVD that have been approved by national regulatory authorities for use in humans. The US Centers for Disease Control and Prevention (CDC) recommends volume repletion, maintenance of blood pressure and oxygenation, pain control, nutritional support and treating any secondary bacterial infections or existing comorbidities. Evidence shows that with appropriate early medical care, patients can survive EVD.

Information on the clinical features and management of patients with EVD treated in US hospitals is available via a recorded webinar here: [http://emergency.cdc.gov/coca/calls/2014/callinfo\\_102014.asp](http://emergency.cdc.gov/coca/calls/2014/callinfo_102014.asp)

The World Health Organization (WHO) and several other national regulatory authorities with clinical and scientific expertise are currently investigating some unregistered vaccines and therapies for use in preventing and treating EVD.

### ***What are the ethical considerations for use of unregistered clinical interventions?***

On 11 August 2014, the WHO convened an ethics panel to consider and assess the ethical implications of the potential use of unregistered clinical interventions. The panel reached consensus that provided certain criteria are met, it is ethical to offer unproven interventions for which the safety and efficacy have not yet been proven in humans. The outcomes and recommendations from this panel can be downloaded from the WHO report here: <http://www.who.int/csr/resources/publications/ebola/ethical-considerations/en/>

### ***Which potential vaccines or treatments are currently undergoing investigation?***

On 4 September 2014, a WHO consultation group of from government, research, ethics, legal, regulatory agencies and funding organisations identified several vaccines or treatments that should be prioritised for clinical evaluation, these include:

- Whole blood transfusions or blood-derived therapies
- Candidate vaccines
- Antiviral therapies

For more details, see the WHO or CDC webpage Ebola vaccines, therapies, and diagnostics: [http://www.who.int/medicines/emp\\_ebola\\_q\\_as/en/](http://www.who.int/medicines/emp_ebola_q_as/en/)

<http://www.cdc.gov/vhf/ebola/hcp/clinician-information-us-healthcare-settings.html>

### ***When will these vaccines and therapies become available?***

Whole blood transfusions or blood-derived therapies from blood donated by EVD survivors have been used to treat patients with EVD during the current outbreak, but no controlled clinical trials have been conducted to date. Therefore, there are no data on the safety, efficacy or effectiveness of any experimental drugs or convalescent plasma for treatment of patients with EVD

Candidate vaccine clinical trials are underway in unaffected African countries, the European Union and the US. Data will be gathered and analysed rapidly with preliminary results expected at the end of 2014. If the safety profile is favourable, then these candidate vaccines may undergo further evaluation for safety and efficacy in other patient groups.

Antiviral therapies – studies are underway to test the safety, efficacy and administration of several novel therapies.

For more details, see the WHO or CDC webpage on Ebola vaccines, therapies, and diagnostics:  
[http://www.who.int/medicines/emp\\_ebola\\_q\\_as/en/](http://www.who.int/medicines/emp_ebola_q_as/en/)

<http://www.cdc.gov/vhf/ebola/hcp/clinician-information-us-healthcare-settings.html>

## **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

### ***What is personal protective equipment for EVD?***

The principle of personal protective equipment (PPE) is to ensure no skin is exposed, in order to prevent transmission of disease. The elements of PPE include: fluid repellent long sleeve gown, double gloves, surgical hood with flange to cover the head and neck (or balaclava if surgical hood with flange is unavailable), shoe and leg covers, P2 mask and face shield.

Details about recommended PPE are available in the VHF Contingency Plan and the Clinical Excellence Commission (CEC) website <http://www.cec.health.nsw.gov.au/programs/hai>

### ***Why are respirators – P2 face masks or powered air-purifying respirators (PAPR) hoods required if EVD is not airborne?***

Although hypothetical concerns about airborne transmission of EVD have been raised, airborne transmission of EVD has never been demonstrated in studies of human-to-human transmission. However, there is a theoretical risk that virus particles may become airborne in certain situations, such as when clinicians are performing intubation or other aerosol-generating procedures. Our recommendations, in line with that of the CDC and the WHO tend towards the cautious due to the severity of the infection.

### ***What training is required to safely use personal protective equipment?***

The safe use of personal protective equipment requires training and practice. Each hospital is responsible for ensuring the preparedness of staff to respond to a person under investigation or suspected EVD case. The Clinical Excellence Commission has provided resources, including posters and videos, to assist hospitals with this process: <http://www.cec.health.nsw.gov.au/programs/hai>

Staff who may be involved in the care of a patient with EVD should be observed putting on and taking off the recommended PPE correctly five times, and then once weekly to maintain these skills.

### ***Who needs to wear PPE?***

PPE is recommended for people coming into direct contact (within 1 metre) with the patients under investigation for EVD, and patients with suspected or confirmed EVD. Only people who have been adequately trained should be donning PPE.

## **INFECTION CONTROL**

### ***Is it okay to use central air-conditioning in the room of an EVD patient?***

Although hypothetical concerns about airborne transmission of EVD have been raised, airborne transmission of EVD has never been demonstrated in studies of human-to-human transmission. Where possible a patient should be cared for in a negative pressure room however not all hospitals will have that facility. In that situation we recommend turning off the air-conditioning if performing an aerosol-generating procedures essential.

### ***Who will be doing the environmental cleaning?***

LHDs are responsible for ensuring the appropriate staff are trained and are skilled in the use of PPE for cleaning of isolation rooms. All staff entering an EVD isolation room must have the appropriate training and adhere to the infection control principles as outlined in the VHF contingency plan.

Can an emergency department (ED) cubicle be used as an isolation room?

The principle of isolating patients in a room is to minimise contact with other patients to control spread of disease. Where possible a patient should be cared for in their own room however not all emergency departments have that facility. In this situation, an ED cubicle with curtains drawn will suffice.

***What about areas that the EVD patient has walked through?***

EVD is transmitted through the bodily fluids of a person symptomatic with EVD. Routine cleaning of areas that an EVD patient has passed through, with no visible contamination, is safe and recommended. Routine PPE is all that is required.

***How long does EVD persist in the environment?***

Laboratory studies have found that in ideal conditions, Ebola virus can remain active for up to 6 days however it is quite sensitive to inactivation by UV light and drying. In a study during an EVD outbreak in Uganda, Ebola virus was identified in only 2 of 33 environmental samples collected from a patient's room, and these two were "grossly contaminated with blood". Ebola virus is also readily inactivated by low-level disinfectants. Based on this data, with consistent daily cleaning, the persistence of Ebola virus in the patient care environment is likely to be short, with a cautious upper limit of 24 hours.

**PATIENT TRANSPORT**

***How will patients be transferred to Westmead?***

Ambulance officers have been trained in the appropriate procedure and PPE for transferring patients with EVD. The decision about whether transfer is required will be made in discussion with the local hospital, Westmead Hospital and public health authorities. In this setting, Ambulance NSW will be contacted centrally to organise a priority transfer with an appropriate vehicle depending on the clinical condition of the patient.

***Will patients from regional and rural NSW also be transferred to Westmead?***

The decision where to transfer patients will be made on a case-by-case assessment through discussions between local, Westmead and public health staff based on clinical features and risk assessment. There is also the option to transfer patients to interstate hospitals, following normal referral pathways as closely as possible. Again this decision will be made in concert with relevant groups.

**WASTE MANAGEMENT**

***How should clinical waste (including linen, clothing) be handled?***

Ebola virus is readily inactivated by low level disinfectants. The preferred disinfectant is sodium hypochlorite solution. Disposable linen is recommended and it along with patient clothing should be discarded as clinical waste. Details about environmental cleaning, waste disposal and toilet waste disposal are available in the VHF Contingency Plan. Training videos on waste management and cleaning are available on the Clinical Excellence Commission (CEC) website <http://www.cec.health.nsw.gov.au/programs/hai>