Ebola Virus Disease
What Health Professionals Need to Know

Last updated 4 December 2014
What is Ebola?

• Viral Haemorrhagic Fever
• A severe and often fatal viral infection
• Five Ebola strains; four known to cause infection in humans
Ebola ecology

Ebola viruses:
- Ebola virus (formerly Zaire virus)
- Sudan virus
- Tai Forest virus
- Bundibugyo virus
- Reston virus (non-human)

Following initial human infection through contact with an infected bat or other wild animal, human-to-human transmission often occurs.

Human-to-human transmission is a predominant feature of epidemics.
Yambuku, Zaire – 1976
Ebola outbreaks

Image source: Centers for Disease Control and Prevention
Medical evacuations

Image source: European Centre for Disease Control (ECDC)
How is Ebola transmitted?

• Ebola is spread through **direct contact**
• This means contact through broken skin or mucous membranes (e.g. eyes, nose, or mouth) with:
  – blood or body fluids (including urine, saliva, sweat, faeces, vomit, breast milk, and semen) of an Ebola patient
  – objects (like needles and syringes) that have been contaminated with the virus
  – infected fruit bats or primates (apes and monkeys)

• Ebola is not spread through the air or by water
Early symptoms

Ebola can only be spread to others after symptoms begin.

Symptoms usually appear after 8-10 days; rarely up to 21 days

- Fever
- Severe headache
- Muscle pain
- Lethargy
- Anorexia

- Diarrhea
- Vomiting
- Abdominal pain
- Unexplained bleeding or bruising *

*Note: Unexplained bleeding or bruising is a late symptom of Ebola.
Treatment
Ebola Preparedness in NSW

Prevention of Ebola

- No vaccine available yet but in rapid development by WHO
- Advice for Travellers
- Detailed advice for healthcare workers developed regarding
  - High-level PPE and infection control
  - Patient isolation
  - Laboratory infection control
  - Safe linen and waste disposal
  - Safe management of the deceased
- Contact identification and management
Border measures

- Exit screening in Ebola affected countries
- Enhanced border screening in place in Australia – contact public health if any concern
- 1 800 number on all incoming passenger cards
Surveillance

**National (CDNA) Public Health Guidelines**

- Active public health monitoring for:
  - Returning HCWs and
  - Humanitarians arrivals from affected countries

- Immediate notification of any suspect cases under investigation to PHUs by Ambulance, GPs and hospitals

- Notification from HealthDirect

**Public Health Laboratory Guidelines**

- Collection, transport & testing of specimens

Image Source: Australian Department of Health
Response planning – Health Services

- **Viral Hemorrhagic Fever Contingency Plan**
  - How to conduct a risk assessment
  - Infection control measures
  - Diagnostic procedures and tests
  - Management of low, high probability and confirmed cases

- Designated hospitals

- Designated laboratories
Response planning – Hospitals/EDs

EBOLA VIRUS DISEASE (EVD) PATIENT RISK ASSESSMENT
Advice for NSW in the event that patient presents to Emergency Departments

1. Does the patient:
   - Report having a fever or history of fever in the past 24 hours? AND
   - OR Report having had contact with a known or highly suspected case of EVD within 21 days of illness onset (see EVD Outbreak Country List)

   NO

   YES
   - NO STAFF MEMBER TO HAVE CONTACT WITH PATIENT UNLESS WEARING FULL PPE (see PPE Box)
   - PROVIDE PATIENT WITH A SURGICAL MASK (Provide a vomit bag if vomiting)
   - ESCORT TO FACILITY’S DESIGNATED ISOLATION ROOM FOR ASSESSMENT (single room with door closed, with own bathroom and negative pressure if available)
   - URGENT DISCUSSION WITH LOCAL ID PHYSICIAN (OR WESTMEAD HOSPITAL ID PHYSICIAN) AND PHU

2. Has the patient:
   - Come into contact with body fluids (blood, urine, faeces, tissues, laboratory specimens) from an individual or animal known or strongly suspected to have EVD?
   - Participated in a funeral which involved direct contact with the deceased body?
   - Presented with vomiting OR diarrhoea OR bruising OR bleeding?
   - Been assessed by ID Physician and/or PHU as having increased possibility of EVD

   NO

   YES
   - URGENT DISCUSSION WITH LOCAL LAB, WH/CHW (ID + ICU) AND CIDMLS-ICPMR Lab
   - REVIEW diagnosis, clinical status and need for transfer to WH or CHW for management and EVD testing
   - Collect specimens for testing based on advice received
   - Liaise with NSW Ambulance and WH or CHW for transfer

   LOW POSSIBILITY OF EVD
   Discuss with local laboratory

   URGENT MALARIA SCREEN
   AND other local investigations as appropriate

   Malaria Positive
   Malaria Negative

   EVD unlikely
   Alternative diagnosis?

   Patient improving
   Patient deteriorating

   REVIEW EVD RISK ASSESSMENT
   - Discuss with ID Physician + PHU + Local Laboratory
   - Consider re-categorising as Increased Possibility of EVD

INCREASED POSSIBILITY OF EVD

www.health.nsw.gov.au
Last updated: 21 October 2014. Health Protection NSW, NSW HEALTH H14/71029
*Where a surgical hood is not available, a balaclava is an acceptable alternative

NSW Public Health Units (PHU) 1300 066 055 (24 hours)
Westmead Hospital (WH) (02) 9845 6609; ask for ID physician
Children's Hospital Westmead (CHW) (02) 9845 0000; ask for ID physician
CIDMLS-ICPMR Laboratory (02) 9845 6255; AH: Call WH - Ask for Clinical Micro on-call
WESTMEAD HOSPITAL (WH) and the
CHILDREN'S HOSPITAL WESTMEAD (CHW)
are the designated hospitals for the
management of EVD Patients

Alertez le personnel immédiatement si...

vous avez de la fièvre et vous avez voyagé en Afrique de l'Ouest le mois dernier
Response planning - GPs

- GPs to remain alert to possibility of Ebola in unwell travelers returning from West Africa
- Engagement with AMA, RACGP and Medicare Locals
- GP fact sheet
- GP algorithm

Ebola Virus Disease
Advice about Febrile Returned Travellers from West Africa

Key points for GPs:
1. The outbreak of Ebola virus disease (EVD) in West Africa is continuing
2. The risk of EVD infection is extremely low unless there has been direct exposure to the body fluids of an infected person
3. Be alert for febrile travellers with a history of travel to GUINEA, LIBERIA or SIERRA LEONE in the 21 days prior to illness onset
4. Seek urgent advice from an infectious diseases physician at your nearest tertiary referral hospital and from your local public health unit on 1300 066 055

Travel to GUINEA, LIBERIA or SIERRA LEONE within 21 days of onset of illness AND
History of FEVER or other symptoms consistent with Ebola (e.g. myalgia, severe headache, pharyngitis, conjunctival injection, flushing, vomiting, diarrhoea)

Isolate patient in single room
Restrict access to the room
Keep at least 1m away from the patient and avoid direct contact

Seek urgent advice from Infectious Diseases Physician and call your local Public Health Unit on 1300 066 055

DO NOT COLLECT BLOOD OR OTHER CLINICAL SAMPLES

www.health.nsw.gov.au
Resources – Infection Control

- Isolation room posters
- PPE videos
- Cleaning videos
- Role of PPE buddy video
Education and training – Infection Control & PPE

Infection Control Practitioner (ICP) Train the Trainer Program

- Donning/doffing PPE
- Role of trained observer
- Environmental cleaning
- Competency assessment and credentialing
- Regular auditing every week during preparedness phase

Image Source: Clinical Excellence Commission private YouTube Channel
Exercises

- Public Health Units
- Designated Hospitals re: Westmead Adults and Children’s Hospitals
- Ambulance Service NSW re: patient transfer
- Border screening – SES LHD, Police and Air Services
Communication

- Hospitals/ EDs
- Primary Care
- Refugee Health Service
- Laboratories
- Ambulance
- HealthDirect
- Emergency responders
- Cross-govt agencies
- Other states & territories, Commonwealth

Image Source: HealthLink, Mid North Coast LHD
Communications

Public information

- Regularly update NSW Health Ebola webpage
- Ebola factsheets
- FAQs

Ebola virus disease

Global situation update

- The largest outbreak of Ebola virus disease (EVD) ever reported is continuing in Guinea, Liberia and Sierra Leone in West Africa.
- Total EVD cases reported (as of 27 October) 13,703 with 4,922 deaths
- The EVD outbreaks are over in Senegal and Nigeria.
- Contacts of Ebola cases are being monitored in Spain, the United States and Mali.
- WHO Ebola situation reports

NSW situation update

- NSW Health is well-prepared to identify and respond to any suspected cases of Ebola and prevent transmission should a case occur. There are currently no cases of Ebola in Australia.
- NSW Health has developed a Contingency Plan to ensure potential cases can be treated and outbreaks prevented.
- Systems are in place to ensure NSW Health is notified immediately if anyone entering Australia from affected countries shows symptoms of Ebola.

Info for the Community and Travellers

- Ebola virus disease is a serious infection that is spread through direct contact with people who are sick with the infection, or with their blood or other body fluids, or with infected animals.
- At present there is no Ebola in Australia, so there is no risk of catching the infection here.
- People who travel in affected countries in West Africa need to minimise their risk of exposure to the Ebola virus.

More information

Ebola Resources

- Ebola Factsheet
- Ebola Patient Risk Assessment Algorithm
- VHF Contingency Plan
- Hospital EVD Preparedness Checklist
- Ebola PHU Control Guidelines
- Ebola PPE and infection control training resources (from the Clinical Excellence Commission)
Summary of preparedness

- Risk is low, but consequences are serious
- Comprehensive planning at National, State and Local levels
- Key measures:
  - Early case finding and isolation
  - Protection of staff: PPE
  - Clear management protocols
  - Exercises
  - Communication

NSW Government Health