Management of Linens and Waste for EVD
Objectives

• Appropriately manage linens from known/ suspected cases of EVD
• Appropriately manage waste from known/ suspected cases of EVD

Handouts/Materials:
– Waste collection container with lid x 1 per group
– Waste collection bags x 2 per group
– Bleach Cleaning solution
– Cleaning cloth
– PPE
MANAGEMENT OF LINENS
Management of linen...

• Linen that has been used on patients can be heavily contaminated with body fluids (e.g. blood, vomit) and splashes may result during handling
PPE for Linen Handling: Ebola

• When handling soiled linen from patients wear:
  – Double gloves
  – Boot covers
  – Coverall:
    • Single use fluid resistant or impermeable.
  – Respirators, including either N95 respirators or powered air purifying respirator (PAPR)
  – Single-use, full-face shield
  – Hoods to ensure complete coverage of the head and neck
  – Apron that is waterproof and covers the torso to the level of the mid-calf

Reference: World Health Organization, 2014
General Principals of Linen Handling

- Handle with minimum agitation to avoid contamination of:
  - air
  - surfaces
  - persons
- Handle soiled linen as little as possible
- Transport linen in covered containers or closed bags
- Use leak-resistant containers for all linens
- Always carry linen away from body

Reference: WHO, 2014
…Management of linen...

• Place soiled linen in clearly-labelled, leak-proof bags or buckets at the site of use

• Container surfaces should be disinfected before removal from the isolation room/area
  – If there is any solid excrement such as faeces or vomit, scrape off carefully using a flat firm object and flush it down the toilet or in the sluice before linen is placed in its container
  – If the linen is transported out of the patient room/area, it should be put in a separate container – it should never be carried against the body

• Linen should be transported directly to the laundry area and laundered promptly
Laundering Recommendations: Ebola

• Use machines if available
• For low temperature laundering:
  – Wash linen with detergent and water
  – Rinse
  – Soak in 0.05% chlorine for approximately 30 minutes
  – Wash with detergent and water, rinse and then dry

Steps in red contain linen that is contaminated

Reference: World Health Organization, 2014
Laundering Recommendations: Ebola

If washing machines are not available or power is not ensured:

– Empty into a large container of hot water and soap
– Soak, being sure that it is totally covered with water
– Use a stick to agitate
– Drain the water
– Refill with clean water and add bleach 1000ppm
– Soak for 30 minutes
– Rinse in clean water
– Remove excess water and dry

Steps in red contain linen that is contaminated

Reference: World Health Organization, 2014
Linen Transport: Ebola

- Disinfect the outside surfaces of the linen bag before removal from the isolation room/area
- Place in another waste bag held by person in low risk area and disinfect the outside surfaces
- Transport directly to the laundry room in dedicated cart
  - closed container (tied bag or bucket with lid)
  - leak proof containers
- Do not mix with other laundry
- Do not pre-sort
- Launder promptly
Sorting and Laundering Recommendations: Ebola

- It may be prudent to place laundry immediately in chlorine solution prior to sorting or handing and soak to decrease the risk to laundry handlers.
- Organic matter (blood and body fluids, excretions and secretions) can prevent disinfection fully occurring so after soaking linen is still considered contaminated.
- PPE as described should be worn for the laundering process.
- Laundering should follow...
Recommendations: Ebola

- If safe cleaning and disinfection of heavily soiled linen is not possible or reliable, it may be prudent to burn the linen to avoid any unnecessary risks to individuals handling these items.

Reference: World Health Organization, 2014
MANAGEMENT OF WASTE
General Hospital Waste Procedures: Waste Collection

- Never compress, shake or squeeze waste in an attempt to reduce volume.
- Tie bags securely to provide a barrier between waste and worker.
- Carry sealed bags by their necks to the transportation trolley/cart/bin:
  - Do not lift or hold bags by the bottom or sides.
  - Carry bags away from the body.
  - Ensure bags are not broken, opened, dropped or thrown.
- Protect storage areas from animals and the public.
- Hazardous and non-hazardous waste should never be mixed.
- Do not use equipment used to hold and transport wastes for any other purpose.
- Contaminated waste containers should be clearly marked.
- Clean contaminated waste containers each time they are emptied.
- Always wear PPE and perform hand hygiene.
General Hospital Waste Procedures: Point of Generation

• For contaminated waste:
  – Deposit in leak proof, puncture resistant, plastic bag lined container
  – Use solid containers with tight-fitting covers and sturdy, tear resistant bags
  – Place containers (especially sharps):
    • close to where the waste is generated
    • where convenient for users
  – Carrying waste from place to place increases the risk of infection
General Hospital Waste Procedures: Disposal

- Various disposal methods depending on type of waste (e.g. sharps, pathological, contaminated, non-contaminated)
- **Recommended Waste Disposal Methods:**
  - Steam sterilization
  - Incinerating (burning)
  - Pouring liquids or wet waste directly into a sewer
  - Burying all contaminated wastes to prevent further handling.
  - Shredding (requires additional technology)
Waste Management Recommendations for Ebola: PPE

- Wear heavy duty/rubber gloves,
- Double gloves
- Closed Shoes (Boots)
- Impermeable Coverall:
  - Single use fluid resistant or impermeable.
- Respirators, including either N95 respirators or powered air purifying respirator (PAPR)
- Single-use, full-face shield
- Goggles provide greater protection than visors from splashes that may come from below when pouring liquid waste from a bucket
- Hoods to ensure complete coverage of the head and neck
- Apron that is waterproof and covers the torso to the level of the mid-calf

Reference: World Health Organization, 2014
Waste Management
Recommendations: Ebola

Point of Generation

• Avoid splashing

• Segregate waste:
  – Sharps and tubing that has been in contact with blood or body fluids should be placed directly into puncture resistant containers as close as possible to point of care
  – Solid, non-sharp, infectious waste into leak-proof waste bags in covered bins

Reference: World Health Organization, 2014
Waste Management Recommendations: Ebola

Disposal: Control access to the area to prevent entry of animals, children, untrained people

- Designated pit
  - 2m (7 feet) filled to depth of 1-1.5m (3-5 feet).
  - After each waste load is deposited, cover with a 10-15cm layer of soil

Reference: World Health Organization, 2014
Waste Management Recommendations: Ebola

• An incinerator may be used for short periods during an outbreak to destroy solid waste
  – It is essential to ensure that total incineration has taken place
  – Caution is required when handling flammable material and when wearing gloves due to the risk of burn injuries if gloves are ignited
Waste Management Recommendations: Ebola

Disposal (continued)

• Placenta and anatomical samples buried in separate pit

• Feces, urine, vomit and liquid waste from washing can be disposed of in sanitary sewer or pit latrine. No further treatment is needed

Reference: World Health Organization, 2014
Resources

WHO 2014 Interim Infection Prevention and Control Guidance for Care of Patients with Suspected or Confirmed Filovirus Haemorrhagic Fever in Health-Care Settings, with Focus on Ebola

http://apps.who.int/iris/bitstream/10665/130596/1/WHO_HIS_SDS_2014.4_eng.pdf?ua=1&ua=1