Infection Prevention and Control and Enhanced Surveillance Orientation for Ebola Virus Disease

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Background

- Uganda currently experiencing 3rd Sudan Ebolavirus outbreak
 - 2000-1:Gulu, 2011:Luweero District, 2022:Central and Western Regions, Uganda
- Uganda- Sept 2022: As of 10/10/2022, a cumulative number of confirmed cases stands at 48 and 17 cases have died.
- 31 confirmed cases are currently on admission
- Sudan virus
 - Limited field diagnostics
 - No licensed vaccines
 - No licensed therapeutic medical countermeasures
 - Candidate therapeutics available under compassionate use and expanded access protocols



Transmission

- Highly transmissible
- Human-to-human transmission main mode of transmission during an outbreak
 - Animal-to-human transmission is uncommon
- Ebola can live
 - On surfaces (tables, chairs)
 - On medical equipment (thermometer, stethoscope)
 - In body fluids for a long time (blood, vomit, urine, stool, sweat, sexual fluids)

Defining Risk

Highest risk

- Those in closest contact with people with VHF but unaware of diagnosis
- Partners, children, living with patient
- Family and friends in close contact with people with VHF,
- Health workers who do not use proper infection control while caring for patients who may have VHF

Minimal risk – those using safe precautions and a stepwise approach to personal safety including use of space and PPE.

VHF poses little risk to travellers or the public who have not cared for or been in close contact with someone sick with a VHF.

The Critical role of IPC

- Healthcare workers--- a key resource in the healthcare system are at an increased risk of contracting the virus
- Staff safety is critical for ensuring continuity of other services



Infection Prevention and Control

- IPC-evidence-based practices and procedures, which, when consistently applied in health care situations
- Can prevent transmission or reduce the risk of transmission of micro-organisms to health care providers, patients, residents and visitors



IPC hierarchy of Controls



Standard Precautions

•These precautions are used for ALL patients, ALWAYS

•Should apply to all patient care activities regardless of index of suspicion for an infectious disease or not

• Form the foundation for outbreak specific transmission-based precautions



Standard precautions

- Hand hygiene
- Respiratory hygiene
- Appropriate <u>Personal Protective Equipment (PPE)</u> according to risk assessment
- Safe waste management and Injection safety practices/ sharps safety
- Proper linens, environmental cleaning and sterilization of patientcare equipment

Indications for Hand Hygiene



<u>Glove disinfection</u>: should be performed within the red zone every time it is needed according to the above indications

Gloves should be changed between patients

Respiratory hygiene

VHFs can be spread via droplets secondary to infectious body fluid splashing. Therefore, to reduce risk it is important to:

- Cover mouth and nose when coughing and sneezing
 - Catch it (cover cough with tissue)
 - Bin it (discard the used tissue in red coded bin)
 - Kill it (perform hand hygiene)
- Avoid crowding (observe physical distancing)
- Offer medical mask to all coughing patients while in waiting/ public areas or in isolation rooms, they have infectious conditions including but not limited to a VHF, COVID-19, TB

Transmission precautions

- Contact precautions: Prevent against any unprotected contact with the patient and/or their environment
 - Use of gloves
 - Full body coverage (e.g., Using a coverall)
- Droplet precautions: Protect against droplet exposure from coughing/sneezing or body fluid splashes
 - Use a face mask and/or face shield for all coughing patients and when handling body fluids



Use of personal protective equipment



Risk assessment guided PPE use

Risk stratification	Example	PPE items
Proximity but No contact	Screening*	Face mask, face shield or goggles, closed shoes or gumboots
Proximity with fine contact	Triage, administering medication, drawing blood samples, delivering meals, caring for children,	Face shield/goggles, water resistant mask, coverall (+/- hood) double gloves, gumboots, disposable aprons
Proximity with coarse contact (requiring effort)	Cleaning wards or ambulances, lifting equipment, dead body management,	On top to the items above, consider using heavy duty gloves and heavy-duty aprons
*Mixing disinfectants		Gloves, respirator, apron/disposable gown, goggles/face shield

*Consider gloves and disposable apron/gown where minimal contact is unavoidable at screening points. Change gloves between clients

Cleaning and disinfection



Mixing disinfectants



Linen management



Management of infectious spills



Waste management

Environmental cleaning – Patient areas

Floors, walls, doorknobs, tables etc.

- Use disposable towels or a mop soaked with soapy water and chlorine to wipe surfaces
- Ensure all visible dirt/debris is removed
- Pay particular attention to high-touch surfaces e.g., light switches, beds, mobile equipment.
- Dry surface to ensure non-slip (or place signage)



Cleaning and disinfection

OLD IPC PRACTICE



SPRAYING

Spraying with chlorine solution was widely used throughout previous EVD outbreaks in Africa: for dead bodies, disinfection of personal protective equipment (PPE), on health care workers' scrubs and skin, etc.

This practice is no longer recommended; it has caused many adverse events in HCWs.²

NEW IPC PRACTICE



NO SPRAYING

Instead of spraying with a chlorine solution, remove any organic material with a towel using soap or detergent and water first, then disinfect using a disinfectant (i.e., 70% alcohol and/or chlorine).

Source: RTSL, WHO

Cleaning and disinfection is recommended to decontaminate the environment:

• Minimize equipment and items in the patient areas

Environmental cleaning – Patient areas

- Patient room should be cleaned twice daily and at discharge
- Cleaners should observe contact and droplet precautions
- Currently, WHO recommends the following against COVID-19 and EVD:
 - 70% ABHS to disinfect small areas e.g., reusable dedicated equipment (e.g., thermometers) between uses.
 - Sodium hypochlorite at 0.5% (equivalent 5000ppm) for disinfection of surfaces.

Waste management principles



In an ETU or isolation ward, treat all waste from the red zone and laboratory waste directly associated with a specimen as infectious

Waste should be segregated at the point of generation to enable appropriate and safe handling.

—Sharp objects should be placed inside puncture-resistant waste containers.

 —All solid, non-sharp, infectious waste should be collected in leak-proof waste bags in covered bins

Use checklists and SOPs and display them at point of use



- The unit leadership to develop/adapt existing checklists to ensure standardization of best practice
 - Donning/doffing of PPE
 - Spill management
 - Waste management
 - Hand washing
 - Mixing disinfectants
 - Handling of linen

Screening, Isolation and Notification

IPC at all health facilities



Minimum capabilities

The goal of this capability is to

- Ensure early identification
- Rapid source control and linkage to testing
- Timely response
 - Staff safety
 - Better patient outcomes
 - Reduce secondary transmission

Screening and Triage

Screening—at entry into the facility

- Identify individuals that meet suspects criteria for SDV
- Based on an approved case definition from the MoH

Triage —at and during admission

 Prioritization of all patients, and recognition of the critically ill patient for rapid, safe intervention



Screening Area

01

Screening area should be set up <u>at</u> <u>or outside</u> the facility entrance and open <u>anytime</u> the facility is open

02

There should be <u>at</u> <u>least</u> 2 meters and a physical barrier between staff and patients

03

All necessary equipment should be available:

- Hand washing stations
- Thermometers
- Basic PPE

How Should Screening Take Place?

- 1. Evaluate all patients entering the facility (living or dead)
- 2. Maintain a safe distance of 2 meters from patient being screened
- 3. Wear the appropriate PPE
- 4. Interview the patient
 - Do not sit face-to-face; sit at an angle
 - Ask their reason for presenting and EVD screening questions
- 5. Measure temperature without touching patient
 - An infrared thermometer (preferred), or
 - A digital thermometer*
- 6. Perform hand hygiene and change PPE as needed before screening additional patients

Suspected case definition

Illness with onset of fever and no response to treatment for usual causes of fever AND at least three of the following signs:

 Headache, vomiting, diarrhoea, anorexia/loss of appetite, lethargy, stomach pain, aching muscles or joints, difficulty swallowing, breathing difficulties, or hiccups, convulsions

OR Illness with onset of fever and no response to treatment for usual causes of fever AND at least one of the following signs

- Bloody diarrhea
- Bleeding from gums
- Bleeding into skin (purpura)
- Bleeding into eyes and urine
- Bleeding from the nose

OR: sudden/unexplained death

OR: unexplained bleeding

JOB AIDES: Algorithm for Suspect Ebola Case



Sudden/unexplained death

Unexplained bleeding

Isolation

Once a suspect Ebola patient is identified they must immediately be isolated in a designated area separate from non-Ebola patients while waiting transfer to a treatment unit or ETU to minimize risk of transmission to others



Holding Area/Isolation Area

- Must be separate from the main ward
 - Separate room near the entrance OR separate building OR tent outside
 - Clearly demarcated with a barrier and signage
 - Should have own bathroom or other mechanism for toileting (e.g. commode)
- Isolation area ONLY for suspected Ebola patients
 - Restrict access to others (including visitors)
 - Assign someone to monitor patient and staff entering isolation area
- Equipment should be designated to the isolation area and not shared with other parts of the facility

Isolation Area Supplies

- For each patient
 - A mattress covered in plastic or a plastic chair
 - Commode bucket or bedpan (if not designated bathroom)
 - Drinking water and ORS
 - A set of eating and drinking utensils
- A waste bin with a waste bin bag
- Hand washing station and bucket with a spigot containing strong (0.5%) chlorine solution (gloved hands)
- PPE for healthcare workers

MACCONDANCE WITH REPULATIONS

Area to Put on PPE PPE

- Located near the entrance to the isolation area
- Necessary items
 - enhanced PPE items
 - Bucket with a spigot containing <u>mild</u> (0.05%) chlorine solution for hand washing
 - Basin(s) to receive the hand washing wastewater
 - A register to keep a record of everyone who enters

Area to Take off

- Located near the exit of the isolation area
- Necessary items
 - Bucket with a spigot containing strong (0.5%) chlorine solution for washing gloved hands and PPE
 - Bucket with a spigot containing <u>mild</u> (0.05%) chlorine solution for hand washing
 - Basins with 0.5% chlorine for reusable PPE (e.g., rubber gloves, aprons)
 - Rubbish bin
 - Disposable towels

Summary-IPC at all health facilities

- Observe standard precautions for all patients---with a focus on contact precautions
 - Hand hygiene
 - Use of gloves before body fluid exposure
- Screening all patients, caregivers and health workers as per the national EVD case definition
- Identify a space for holding patients under investigation and activation of referral pathways
- Train HCW in daily environmental disinfection, waste management



Enhanced Surveillance in health facilities

Rationale for Monitoring in health facilities

- Patients may have no symptoms of EVD at screening/triage and initial admission and develop them during the hospital stay
- Daily monitoring for symptoms of EVD in hospitalized patients is critical.
- Every day
 - Apply standard precautions for all patients
 - Take temperature at least twice daily for all hospitalized patients
 - Assess the patient at least once a day or immediately in the presence of high fever (> 38°C), according to the definition of a suspected case



Screening Inpatients for EVD symptoms

Conduct daily rounds for all inpatients using the suspected case definition

Any patients that have developed EVD symptoms newly since yesterday should be isolated and tested for EVD

Screening caregivers

Caregivers are needed for the wellbeing of inpatients, but can also bring EVD into the hospital

Avoid caregiver entry if possible or restrict to ONLY ONE caregiver

All caregivers should be screened for EVD any time they enter the facility, and isolated and tested if they meet the case definition

Enhanced surveillance at Health facilities







- All health facilities
 - Set up screening stations outside the facility
 - Monitor all healthcare workers

- Facilities with admission capability
 - Active screening of all admitted patients
 - Screening of caregivers

Screen. Isolate. Notify.

1. Screening

- Do not touch patient
- Stay at least 2 meters from patient
- Wear basic PPE
- Take temperature
- Screen all patients using case definition algorithm

2. Isolate

 Avoid contact with patient/body fluid (≥2m)

 Explain to patient/family

 Transfer patient to isolation area

3. Notify

- SMS 'ALERT' to 6767 AND
- Notify district surveillance person _____
- Surveillance officers and district rapid response team will provide support

4. Minimal Care

- Provide no/minimal touch care
- Wear extended PPE when entering isolation area
- Encourage patient to drink and eat

Clean and Dispose of Waste

- Wear PPE for cleaning
- Clean screening area after suspect patient using strong (0.5%) chlorine
- Clean isolation area and materials appropriately after patient is transferred to ETU
- Sequester solid and liquid Ebola waste from non-Ebola waste and dispose of appropriately

5. Transfer to ETU

- Ambulance will arrive
 to transport case
- District rapid response team will assist

Thank you

