

# INFECTION PREVENTION & CONTROL GUIDELINES FOR MANAGEMENT OF SUSPECTED OR CONFIRMED EBOLA VIRUS DISEASE (EVD)

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### Case Definition for Ebola Virus Disease (EVD):

#### **Suspected Case.**

Illness in a person who has both consistent symptoms and risk factors as follows:

- Clinical criteria, which includes fever of greater than 38.6°C, and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain or unexplained hemorrhage (gingival, nasal, cutaneous [petechiae, bruises, ecchymosis], gastrointestinal, rectal [gross or occult blood], urinary [gross or microscopic hematuria], vaginal, or puncture sites bleeding); AND
- Epidemiologic risk factors within the past (21days) before the onset of symptoms, such as contact with blood or other body fluids of a patient known to have or suspected to have EVD; residence in or travel to an area where EVD transmission is active; or direct handling of dead or alive fruit bats, monkeys, chimpanzees, gorillas, forest antelope and porcupines from disease-endemic areas. Malaria diagnostics should also be a part of initial testing because it is a common cause of febrile illness in persons with a travel history to the affected countries.

#### **Confirmed Case.**

A suspected case with laboratory-confirmed diagnostic evidence of Ebola virus infection.

### Infection control measures.

#### **I. Patient Placement**

- Place the patient in single isolation rooms with toilet and hand washing sink equipped with running water, soap and single-use towels, alcohol-based hand rub dispensers, personal protective equipment (PPE), doors closed and restricted access.
- Type of isolation precautions: contact and droplet precautions in addition to standard precautions for stable patients. Additional precautions should be taken during aerosols generating procedures (see section VII).
- Isolation units should maintain a log of all persons entering the patient's room.
- Keep all routine supplies for patient care outside of the isolation room.
- Utilize isolation carts for extra supplies.

- Keep containers with decontamination solutions in the anteroom.
- Restrict entry to only those considered essential.
- Do not move patients in the isolation room/unit in or out unless it is absolutely necessary.
- Do not interchange staff in this area with other areas in the hospital.

## II. Personal Protective Equipment (PPE):

- The HCWs and only the authorized personnel allowed to enter the patient room and should wear at least:
  - Gloves (double gloving is preferable).
  - Isolation Gown (fluid resistant or impermeable).
  - Eye protection (goggles or face shield).
  - Face mask.
  - Additional PPE might be required in certain situations (e.g., copious amounts of blood, other body fluids, vomit, or feces present in the environment), including but not limited to:
    - Full body (overall) water-proof suit that covers the whole body from head to ankles.
    - Disposable shoe covers.
- Recommended PPE should be worn by HCWs upon entry into patient rooms or care areas.
- Upon exit from the patient room or care area, PPE should be carefully removed and discarded without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials.
- Hand hygiene should be performed before and immediately after using of PPE.
- Personnel providing care to patients with Ebola must be supervised by an onsite manager at all times and a trained observer must supervise each step of every PPE donning/doffing procedure to ensure established PPE protocols are completed correctly.

### III. Patient Care Equipment.

- Dedicated medical equipment (preferably disposable, when possible) should be used for the provision of patient care.
- All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected according to manufacturer's instructions and MOH guidelines.

### IV. Patient Care Considerations

Protection Against Blood Borne Pathogens / Safe Injection Practices:

- Facilities should follow safe injection practices as specified under Standard Precautions.
- Any injection equipment or parenteral medication container that enters the patient treatment area should be dedicated to that patient and disposed of at the point of use.

HCWs or any other personnel who are attending suspected or confirmed (EVD) patients, should notify to the employee health clinic in cases of needle stick injuries.

### V. Transporting Ebola Patient by Ambulance.

- Confirm that receiving facility is ready for patient arrival.
- Depart for patient location and provide estimated time of arrival (ETA) for ambulance at sending facility.
- Communicate with designated point of contact at each facility the arrival of transporting ambulance at sending and receiving facilities.
- Observe donning of PPE and when ready, proceed to make patient contact (only the minimum number of providers necessary to manage the patient should be present).
- Transport patient in impervious suit if ambulatory or in impervious sheets if non-ambulatory and stretcher-bound, as tolerated.

- Consider any patient belongings to be contaminated, which are typically bagged, labeled, and transported with the patient in the patient compartment.
- Any documents provided by sending facility should be free of contamination. When in doubt, consider them contaminated and package as appropriate for transport by ambulance personnel.
- Regarding for Ambulance Decontamination, Ebola is transmitted through contact with infected body fluids, so infection control measures must be implemented that prevent contact with blood or infectious body fluid throughout the decontamination process. This process is designed for a 3-person team. Two people will be donned in PPE and perform the decontamination. A third person, not donned in PPE, will be available to document the decontamination and for other assistance as needed.

#### VI. Ebola Specimen Collection and Transportation.

- Staff who collects specimens should wear appropriate PPE and should refer to Guidance on Personal Protective Equipment to be used by healthcare workers during management of patients with Ebola Virus, Including Procedures for Putting On (Donning) and Removing (Doffing).
- Before removing patient specimens from the site of care, it is advisable to plan the route of the sample from the patient area to the location where it will be packed for shipping to avoid high traffic areas.
- Before removing patient specimens from the site of care, the outside of the specimen containers should be decontaminated with an approved disinfectant as described in Interim Guidance for Environmental Infection Control

## VII. Aerosol Generating Procedures (AGP):

An aerosol-generating procedure (AGP) is defined as any medical procedure that can induce the production of aerosols of various sizes, including small (< 5 micron) particles.

- Aerosol-generating procedures that may be associated with an increased risk of infection transmission includes both elective procedures such as bronchoscopy, sputum induction, elective intubation and extubation, as well as emergency procedures such as cardiopulmonary resuscitation, initiation of Bilevel Positive Airway Pressure–BIPAP, emergency intubation, open suctioning of airways, manual ventilation via umbo bagging through a mask before intubation.
- Avoid AGPs for EVD patients as possible as you can.
- Additional precautions when performing aerosol-generating procedures.
  - o Wear Fitted – N95 mask –Every healthcare worker should wear a fit tested N95 mask (or an alternative respirator if fit testing failed e.g., powered air purifying respiratory PAPR or elastomeric respirator). Additionally, when putting on N95 mask, always check the seal.
  - o Wear eye protection (i.e. goggles or a face shield that fully covers the front and sides of the face).
  - o Wear a clean, non-sterile, long-sleeved water-proof gown, apron and gloves (some of these procedures require sterile gloves).
  - o Wear disposable shoe covers.
  - o Perform procedures in a negative pressure room. When a negative pressure room is not available, Conduct the procedure in a private room with portable HEPA filter. Room doors should be kept closed during the procedure except when entering or leaving the room, and entry and exit should be minimized during and shortly after the procedure.
  - o Limit the number of persons present in the room to those essential for patient-care and support.
  - o Perform hand hygiene before and after contact with the patient and his or her surroundings and after PPE removal.

- o Conduct environmental surface cleaning following procedures (see section below on environmental infection control).
- If re-usable equipment or PPE (e.g. Powered air purifying respirator PAPR, elastomeric respirator, etc.) are used, they should be cleaned and disinfected according to manufacturer instructions and hospital policies.

### VIII. Hand Hygiene.

HCWs should perform hand hygiene frequently, including before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves.

Healthcare facilities should ensure that supplies for performing hand hygiene are available.

### IX. Environmental Infection Control and Waste Management.

- Diligent environmental cleaning and disinfection and safe handling of potentially contaminated materials is paramount, as blood, sweat, emesis, feces and other body secretions represent potentially infectious materials.
- HCWs performing environmental cleaning and disinfection should wear recommended PPE (described above) and consider use of additional barriers (shoe and leg coverings, etc.) if needed.
- Face protection (face shield or facemask with goggles) should be worn when performing tasks such as liquid waste disposal that can generate splashes.
- Environmental surfaces and equipment should be disinfected by using approved intermediate level disinfectants.
- Follow standard procedures, per MOH policy and manufacturers' instructions, for cleaning and/or disinfection of:

1. Environmental surfaces and equipment by using approved intermediate level disinfectants
  2. Textiles and laundry
  3. Food utensils and dishware
- Routine cleaning of the PPE doffing area should be performed at least once per day and after the doffing of grossly contaminated PPE.
  - Ebola-Associated Waste Management should be Placed in double, leak - proof bags, and stored in a rigid, leak - proof containers.
  - Safe containment and packaging of waste should be performed as close as possible to the point of generation.
  - Staff should avoid opening containers or manipulating the waste.
  - Use (PPE) for handling waste until performing the on - site inactivation or transporting the waste away to the offsite inactivation area.
  - The healthcare workers should immediately spray or wipe the outside surfaces of double-bagged waste with an approved MOH disinfectant before removing waste from the room.

#### **X. Duration of Infection Control Precautions.**

Duration of precautions should be determined on a case-by-case basis. Factors that should be considered include but are not limited to: presence of symptoms related to Ebola HF, date symptoms resolved, other conditions that would require specific precautions (e.g., tuberculosis, Clostridium difficile) and available laboratory information.

#### **XI. Management of Potentially Exposed Personnel.**

- Facilities should develop policies for monitoring and management of potentially exposed HCWs.

- Persons with percutaneous or mucocutaneous exposures to blood, body fluids, secretions or excretions from a patient with suspected Ebola HF should stop working and immediately wash the affected skin surfaces with soap and water. Mucous membranes (e.g., conjunctiva) should be irrigated with copious amounts of water or eyewash solution. Immediately contact occupational health/supervisor for assessment and access to post-exposure management services for all appropriate pathogens (e.g. Human Immunodeficiency Virus, Hepatitis C, etc.)
- HCWs who develop sudden onset of fever, intense weakness or muscle pains, vomiting, diarrhea, or any signs of hemorrhage after an unprotected exposure (i.e. not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids (to a patient with Ebola HF) should.
  - stop working immediately,
  - notify their supervisor,
  - seek prompt medical evaluation and testing
  - notify public health/infection control departments, and
  - comply with work exclusion until they are deemed no longer infectious to others
- For asymptomatic HCW who had an unprotected exposure (i.e. not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids) to a patient with Ebola HF, the following are required:
  - Asymptomatic HCWs should receive medical evaluation and follow-up care including fever monitoring twice daily for 21 days after the last known exposure.
  - Hospitals should consider policies ensuring twice daily contact with exposed personnel to discuss potential symptoms and document fever checks.
  - Asymptomatic HCWs may continue to work while receiving twice daily fever checks.
  - Asymptomatic HCWs are not allowed to travel during the 21 days after exposure.

## XII. Monitoring ,Management and Training of Visitors.

- Avoid entry of visitors into the patient's room

Exceptions may be considered on a case by case basis for those who are essential for the patient's wellbeing.

- Establish procedures for monitoring managing and training visitors.
- Visits should be scheduled and controlled to allow for:
  - Screening for Ebola HF (e.g., fever and other symptoms) before entering or upon arrival to the hospital
  - Evaluating risk to the health of the visitor and ability to comply with precautions
  - providing instruction ,before entry into the patient care area on hand hygiene, limiting surfaces touched, and use of PPE according to the current facility policy while in the patient's room
  - Visitor movement within the facility should be restricted to the patient care area and an immediately adjacent waiting area.

## XIII. Management of the Deceased.

- Body washing must be done in the hospital. No washing can be done outside of the hospital setting.
- HCWs dealing with the body should wear gloves, a gown, disposable shoe covers, and either a face shield that fully covers the front and sides of the face or goggles, and N95 mask. Put the body in double fluid-resistant body bag. After placing the body in the first bag, disinfect the outer surface of the bag using a hospital-approved disinfectant before placing the body in a second bag and then disinfect the outer surface of the second bag.
- All equipment, table and counter surfaces, stretchers, body boards and transport trolleys must be cleaned after every patient using hospital-approved disinfectants.



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