

# 2014

## GMHA EBOLA PREPAREDNESS PLAN



As of:

12/30/2014

**Purpose:**

The purpose of this plan is to provide Guam Memorial Hospital with guidelines and protocols for responding to a suspect Ebola Virus Disease (EVD) case. This plan must be considered fluid and flexible to adapt to situations and updates that may evolve, thus changing the response.

**Definitions:**

1. **Viral hemorrhagic fevers (VHF):** Infectious diseases that interfere with the blood's ability to clot. These diseases can also damage the walls of tiny blood vessels, making them leaky. The internal bleeding that results can range from relatively minor to life-threatening. These diseases most commonly occur in tropical areas of the world. When viral hemorrhagic fevers occur in the United States, they're usually found in people who've recently traveled internationally. VHF is spread by contact with infected animals, people or insects. No current treatment can cure viral hemorrhagic fevers, and immunizations exist for only a few types.
2. **Ebola Virus disease (EVD) or Ebola hemorrhagic fever (EHF):** Infectious human disease caused by the Ebola virus. Symptoms typically start two days to 21 days after contracting the virus, with a fever, throat and muscle pains, and headaches. There is then typically nausea, vomiting, and diarrhea, along with decreased functioning of the liver and kidneys. At this point, some people begin to have problems with bleeding. When infection occurs, symptoms usually begin abruptly. The first Ebola virus species was discovered in 1976 in what is now the Democratic Republic of the Congo near the Ebola River. Since then, outbreaks have appeared sporadically. The natural reservoir host of ebola viruses remains unknown. However, on the basis of available evidence and the nature of similar viruses, researchers believe that the virus is Zoonotic (animal-borne) with fruit bats being the most likely reservoir.
3. **Marburg Virus Disease (MVD) or Marburg hemorrhagic fever (Marburg HF):** Infectious human disease is caused by Marburg virus, a genetically unique Zoonotic (or, animal-borne) RNA virus of the filovirus family. The five species of Ebola virus are the only other known members of the filovirus family.
4. **Filoviruses:** Belong to a virus family called *Filoviridae* and can cause severe hemorrhagic fever in humans and nonhuman primates. So far, only two members of this virus family have been identified: Marburvirus and Ebola virus.
5. **Biosafety Level 4 (BSL-4) Lab:** The highest level of biological safety. There are a small number of BSL-4 labs in the United States and around the world. The microbes in a BSL-4 lab are dangerous and exotic, posing a high risk of aerosol-transmitted infections. Infections caused by these microbes are frequently fatal and without treatment or vaccines. Two examples of microbes worked with in a BSL-4 laboratory include Ebola and Marburg viruses. There is no such lab on the island of Guam.

**Assumption:**

A patient seeking medical attention for Ebola Virus Disease may present directly to the Emergency Room or be brought via Guam Fire Department EMS transport.

**Procedure:**

- 1) **Signage** - Visual alert signs will be posted at two conspicuous areas outside of the Emergency Room Department (**Attachment 1**). The sign alerts patients to report the presence of symptoms by alerting staff or ringing of a buzzer located outside the Emergency Department. Security personnel may be the first point of contact for patients. If such a patient is identified, a triage nurse will be promptly notified and will meet patient outside the Emergency Department, wear appropriate PPE and follow procedures described in Step 3.
  
- 2) **Triage Screening** - All patients presenting to the hospital must be screened using the GMH ER EVD assessment tool, (**Attachment 2**).
  - a. ER Triage Nurse/Staff initially responding will use standard PPE (surgical mask and gloves).
  - b. Assessment will include the presence of fever (subjective or  $\geq 100.4^{\circ}\text{F}$ ), headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain or unexplained hemorrhage.
  - c. Assessment will additionally include exposure to a person with suspected EVD and travel history to affected countries within the 21 days prior to onset of symptoms in symptomatic patients.
  
- 3) **Screening Criteria Met** - If travel and/or exposure history and any of the symptoms are met, the following procedures must be followed immediately:
  - a. A mask is to be placed on the patient as tolerated.
  - b. The patient is to be escorted directly into the pre-designated Ebola Isolation Room in the Emergency Department (Isolation Room 1). Under no circumstances is the patient to allowed to wait in public spaces.
    - i. If it is necessary to escort the patient in by wheelchair or stretcher, one must be designated for use on the patient and left in the room for future disinfection.
    - ii. If the patient vomits, soils him/herself en route to the isolation unit, the area is to be marked off immediately to prevent anyone from being exposed to any bodily fluids. This area will be cleaned by the housekeeping staff using protocols described in 9b.
  - c. The patient will be provided instructions to not touch anything and that he/she will remain in the designated room until future instructions are provided (when the patient has been ruled out via laboratory confirmation)
  - d. Charge nurse is to be notified & Ebola Supply cart to be moved to pre-designated Clean Area.
  - e. The Charge Nurse must advise Communication Center to notify the following individuals immediately:
    - i. Dr. Georgina Calderon
    - ii. Dr. Jon Sidell
    - iii. Ms. Yvonne Damian
    - iv. Mr. William Kando,

- v. Mr. Gordon Misuzawa
- vi. Mr. Joseph Verga,
- vii. Nursing Supervisor on duty.

- 4) **Notification and Activation (Code Purple)** - Dr. Georgina Calderon (or designee) will make the decision to announce "Code Purple" via Communication Center.
- a. If there is a delay in response (>30min) by any of the above individuals, charge nurse has the authority to activate Code Purple.
  - b. **Code Purple** –Via Communication Center that activates the following:
    - i. Security: to control entry points and restrict ER access and visitation. Divert ambulance traffic away from the designated isolation area.
    - ii. Materials Management: to ready additional Ebola PPE supplies and bring to ED Clean area.
    - iii. Housekeeping: to clear out non-essential supplies currently in ED annex anteroom and provide large red biohazardous waste container/bags, hypochlorite-based solution spray bottles, anti-germicidal wipes and buckets for pre-designated ED doffing area - Isolation Room 1 anteroom.
    - iv. Nursing Supervisor: to assign a designated ER medication nurse and trained observer for at least 2 hours until the arrival of the Ebola Core Response Team.
    - v. ER physician's on duty: to determine which physician will be designated for care of the suspect EVD patient for at least 2 hours until the arrival of the Ebola Core Response Team.
    - vi. The following departments shall be on standby for potential orders or diagnostics: Respiratory, Laboratory, and Radiology.
    - vii. Public Relations: Stand-by for media communication.
  - c. Communication Center will be responsible for contacting individuals listed on the Ebola Core Response Team when Code Purple has been declared. At this time, the Ebola Core Response team shall consist of the following:
    - i. Physician (PPE trained Emergency Physician or Internal Medicine on duty)
    - ii. ER Nurse
    - iii. Respiratory
    - iv. Laboratory
    - v. Radiology
    - vi. Housekeeping
    - vii. Media Relations
    - viii. Security
  - d. Infection Control will be responsible for notifying the Department of Public Health and Social Services.
- 5) **Patient Isolation Unit** – The pre-designated isolation area for a suspected EVD patient will be Isolation Room 1, in the Emergency Department. Patient shall remain in such designated area for the duration of his/her hospitalization.

- a. The patient isolation unit consists of a patient room with it's own bathroom, a PPE donning area (Green Zone) and the PPE doffing area (Dirty Zone). The Clean Zone will be the closed off hallway area outside Isolation Room 1 and the Dirty Zone will be Isolation Room 1 anteroom.
  - b. The designated trained observer will be responsible for monitoring the donning and removal of PPE by all persons entering the patient's room. This person is also responsible for keeping a log of all staff that enter the room. **(Attachment 3).**
  - c. The interim plan for movement in and out of the Isolation room can be found in **Attachment 4.**
  - d. Any staff entering and exiting the patient's room must comply with GMH's EVD PPE Protocols for the proper donning and removal of PPE. **(Attachment 5).**
    - i. This includes having a trained observer present to monitor and guide staff in both donning and doffing for every room entry and exit. The trained observer MUST use the checklist when monitoring and guiding staff **(See Attachment 10 and 11).**
- 6) **Care Considerations During Hospitalization** – Supportive, non-invasive care will be provided to a suspected EVD patient while minimizing potential exposures to bodily fluids to staff caring for patient. The following procedures must be ensured for the duration of the patient's stay:
- a. Minimize the number of personnel that enter into the room.
    - i. Only physician and RN team directly caring for the patient shall enter the patient's room.
    - ii. No other ancillary staff (lab, radiology, housekeeping, etc.) will be required to enter.
    - iii. Visitors are restricted from entering.
  - b. Provide disposable single-use devices, equipment, whenever possible.
    - i. Designate reusable medical equipment and devices for use on this patient, including stethoscopes, glucometer, thermometer, blood pressure cuffs.
    - ii. All non-disposable items are to be sequestered in a dedicated area in patient's room and disinfected using hypochlorite-based solutions (requiring a 15 minute contact time) at a later time.
  - c. Dietary:
    - i. All patients will be provided food types as ordered (e.g., Regular, Soft, NPO, etc) however it will be on disposable food trays and disposable utensils while in isolation.
    - ii. These items will be double bagged in Red Bags and autoclaved prior to disposal unless directed otherwise by Public Health such as potential need to send for incineration at waste sites.
  - d. If patient's clinical picture suggests need for fluid resuscitation, the most experienced RN caring for the patient shall attempt a maximum of one peripheral intravenous catheter. No more than 2 attempts shall be made.

- i. If a peripheral IV is established, it shall be placed at the time when diagnostic laboratory specimen is drawn. This will minimize potential exposure to staff caring for patient.
  - ii. If peripheral IV cannot be established, supportive care will be provided orally (e.g., medications, hydration, etc.) only.
- e. Minimize aerosol-generating procedures. This may include, but not limited to, Bi-level Positive Airway Pressure (BiPAP), bronchoscopy, sputum induction, intubation and extubation, and open suctioning of airways.
- f. Surgical procedures are NOT recommended for patients with EVD.
- g. Do NOT transport the patient unless medically emergent and only if authorized by MD caring for patient.
- h. No visitors will be allowed.

**7) Laboratory Testing:**

- a. Diagnostic Testing for Ebola Case: See (**Attachment 6**) for diagnostic EVD RT-PCR testing guidelines. All testing is to be done in direct coordination with the Guam Department of Health and Social Services (DPHSS) and the Center for Disease Control and Prevention (CDC). Only after specimen transfer to testing site (in Hawaii) has been arranged, will there be a nurse-administered blood draw. The attached DPHSS guidelines include the following:
  - i. Specimen requirements
  - ii. Collection guidelines
  - iii. Guam Public Health Lab Submission Guidelines
  - iv. Safety and Infection Control Precautions for Collecting and Handling of Specimens
  - v. Specimen Transport Guidelines
  - vi. Rejection Criteria
  - vii. Result Notification
  - viii. Specimen Processing Checklist (**Attachment 7**)
  - ix. Specimen Submission Form (**Attachment 8**)
  - x. Responding RN will draw specimen.
- b. All suspected EVD specimens are to be processed by BSL-4 standards; given the lack of availability of such on Guam, routine testing (CBC, chem panel, etc.) will not be done due to risk of cross-contamination.

**8) Transport of Medical Biohazardous waste:**

- a. Housekeeping will NOT enter the patient care area.
- b. All sharp objects (e.g., needles, glass) and tubing that has been in contact with blood or bodily fluids should be placed inside puncture resistant waste containers.
- c. All solid, non-sharp, infectious waste and used PPE is to be collected in leak-proof red biohazardous bags lining a waste bin within the patient's room and in the Dirty area.
- d. Prior to removal of any medical biohazardous waste from the patient's room, nursing will contact housekeeping to standby for waste transport.

- e. Nursing will be responsible for bagging biohazardous waste, sealing the bag and handing it to the housekeeper on standby. Prior to waste leaving the anteroom (dirty area) waste will be placed and sealed in an additional red waste bag.
- f. The outside of the second sealed red biohazard bag, will then be decontaminated by spraying/wiping it with hypochlorite-based solution prior to leaving the Dirty Area.
- g. The disinfected biohazard bag will then be picked up by housekeeping staff outside ED Isolation Room 1 anteroom, using a large wheeled container in which the RN will directly place the bag. This container shall not be carried against the body.
- h. Housekeeping staff will don gloves, face shield, and a regular isolation gown prior to taking the biohazard waste. Medical Biohazardous waste to be transported by the housekeeper in a designated closed, wheeled, red bio waste container via a pre-determined route inside of the hospital directly to the autoclave. The waste must NOT be left in a dirty utility room or other temporary cart for transport.
- i. The waste will then be taken directly to the autoclave. Once autoclaved, it shall then be placed in a biohazard bag and disposed of as category B medical waste.
- j. Waste, such as feces, urine, vomit, can be disposed of in the toilet. Standard sewage handling processes in the United States (and Guam) are designed to inactivate infectious agents.

**9) Terminal Room Cleaning:**

- a. Terminal cleaning and disinfecting of the patient's room will be done by the nurse and physician caring for the patient when grossly contaminated while the patient is hospitalized to minimize the number of personnel entering and their duration within the patient's room.
- b. Procedure for disinfection:
  - i. In addition to PPE, heavy duty non-disposable gloves should be used for cleaning grossly contaminated surfaces.
  - ii. The grossly contaminated surfaces (e.g., with blood, vomit, feces, urine) are to be sprayed with a hypochlorite solution and left for at least 15 minutes of contact time prior to being wiped using disposable towels, mops, etc.
- c. After patient is discharged/transferred.
  - i. Terminal Room is to remain closed for 7 days.
  - ii. Terminal cleaning after patient discharge will be done by housekeeping.
  - iii. Medical Biohazardous waste to be transported by the housekeeper in a designated closed, wheeled, red bio waste container via a pre-determined route inside of the hospital directly to the autoclave.
- d. All cloth products will be discarded: linens, mattresses, pillows, etc. These are to be discarded into the biohazardous waste stream, autoclaved and treated as category B medical waste.

**10) Staff Health Monitoring:** All staff involved in the care of a suspected or confirmed EVD patient will be subject to active health monitoring by the Employee Health Services program. Such personnel include, but are not limited to, first responders transferring patient, triage nurse,

nursing staff, doctors. Employee health shall keep a log of all personnel coming in contact with patient, type of exposure and date of exposure. All monitoring of staff will be done for at least 21 days after last exposure. See **Attachment 9** for further details.

- 11) Post-Mortem:** Handling of human remains should be kept to a minimum; preparation of the body should be in coordination with DPHSS and shall begin only after a plan for final deposition of the remains has been established.
- a. Preparation of the body: Done by RN and MD donning full PPE
    - i. Leave any intravenous lines or endotracheal tubes that may be present in place.
    - ii. At the site of death, the body should be wrapped in a plastic.
    - iii. After wrapping, the body should be immediately placed in a leak-proof plastic bag not less than 150 mm thick and zippered.
    - iv. After placement in the first bag, the surface of the first bag shall be wiped with hypochlorite solution.
    - v. The bagged body should then be placed in another leak-proof plastic bag not less than 150 mm thick and zippered.
    - vi. Again, the surface of the second body bag shall be wiped with hypochlorite solution.
  - b. Disposition of Remains: to be done in direct coordination with DPHSS.
    - i. Cremation: If cremation is available, the remains shall be transferred to a gurney and taken directly to a designated cremation center via appropriately equipped ambulance (per GFD's protocol). Those handling the body shall be wearing full PPE.
    - ii. Burial: A hermetically-sealed coffin shall be brought to the hallway directly outside the patient's room and opened. Wearing full PPE, the body bag will then be transported into the coffin. The coffin will then be sealed and the outside of the coffin will then be wiped with hypochlorite solution. Once disinfected, the coffin is safe for transport to a burial site. Staff handling the disinfected coffin should wear gloves until the time of burial.
  - c. No post-mortem ritual washing, viewing or examinations will be performed.

**12) Key References:**

- a. *Interim Infection Prevention and Control Guidance for Care of Patients with Suspected or Confirmed Filovirus Hemorrhagic Fever in Health-Care Settings, with focus on Ebola*. World Health Organization. Geneva, 2014
- b. *Field Situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease*. World Health Organization. Geneva, 2014
- c. Lowe, et al. *Nebraska Biocontainment Unit perspective on disposal of Ebola*. American Journal of Infection Control. October 2014
- d. *Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus*. Centers for Disease Control and Prevention. Atlanta, 2014
- e. *Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing)*. Centers for Disease Control and



Prevention. Atlanta, 2014

- f. *Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Virus Disease in U.S. Hospitals.* Centers for Disease Control and Prevention. Atlanta, 2014
- g. *Ebola-Associated Waste Management.* Centers for Disease Control and Prevention. Atlanta, 2014

### **13) Attachments**

Attachment 1- *Sign Outside Emergency Department*

Attachment 2- *GMH ER EVD Screening Tool*

Attachment 3- *Staff Log*

Attachment 4- *Illustration of Isolation Unit*

Attachment 5- *GMH EVD PPE Donning/Doffing Protocol*

Attachment 6- *Guam Public Health EVD Laboratory Testing Guidelines*

Attachment 7- *Specimen Processing Checklist for Suspected Ebola Case*

Attachment 8- *Specimen Submission Form*

Attachment 9- *Staff Health Monitoring Protocol*

Attachment 10 - *GMH PPE Trained Observer Checklist - Donning*

Attachment 11 - *GMH PPE Trained Observer Checklist - Doffing*