

Section: UTMB On-line Documentation	04.01 - Policy
Subject: Healthcare Epidemiology Policies and Procedures	11.6.15 Revised
Topic: 04.01 – <i>Infection Control for the Care of Patients with Diagnosed or Suspected Ebola Virus Disease (EVD)</i>	2014 - Author

04.01 – Infection Control for the Care of Patients with Diagnosed or Suspected Ebola Virus Disease (EVD)

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Purpose To provide a safe process for screening patients with possible EVD and provision of safe care for patients diagnosed with EVD.

Audience Healthcare workers (HCWs) in the UTMB Health System

Policy and Procedures

- I. Basic principles: due to the nature of the disease and lack of effective prophylaxis, the safety of the staff is a paramount concern. The number of staff involved in bedside care and processing of laboratory specimens will be limited to the extent feasible. Staff who will be in direct contact with the patient will be trained and provided with the appropriate resources, including personal protective equipment (PPE), will be provided. Testing and disposition of patients will be coordinated with the appropriate public health agency(ies).
- II. Entry of a patient with possible or diagnosed EVD into the UTMB system:
 - A. Patients with epidemiologic risk factor and symptoms may self-present to the ED on the main campus, the ED on the Angleton Danbury campus, or to a clinic in the UTMB system. Persons who have traveled to outbreak areas are monitored by public health agencies, making this an unlikely occurrence. However, all patients are screened for risk of exposure and symptoms.
 - B. A person under investigation for Ebola (PUI) will be treated at UTMB only if the patient self-presents to a UTMB facility. PUIs identified at other facilities will not be transferred to UTMB.
 - C. A patient with confirmed EVD may be referred by an entity designated by the Texas Department of State Health Services and upon coordination with the ED.
 - D. Employees who are exposed either during the course of patient care or during research activities who subsequently develop symptoms consistent with Ebola will be admitted as a PUI.
- III. Screening and diagnosis of cases
 - A. Emergency Department
 1. Patient self-presents to the ED and is screened using Appendix 1. If there is epidemiologic risk, the patient is questioned about symptoms consistent with possible EVD.
 - **Epidemiologic risk:** within last 21 days, patient has traveled to one of the West African countries where Ebola outbreaks are present, has had contact with a person who is under investigation for or diagnosed with Ebola. Outbreak countries: <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html#areas>.
 - **Signs/symptoms** (if accompanied by epidemiologic risk): fever, headache, muscle or joint pain, nausea or vomiting, abdominal pain, diarrhea, abnormal bleeding.
 - a. If the patient screens as possible Ebola (epidemiologic risk plus symptoms) upon arrival, the following preventive measures are implemented:
 - The clerk will don Level I PPE (See appendix IV) and place a surgical mask and gloves on the patient.
 - Patient will be moved to designated area, at least 3 feet away from others.

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- Triage nurse will be notified of possible EVD
 - b. Triage Nurse will don level I PPE (see Appendix IV), take the patient's temperature and re-screen for risk factors/symptoms. If the patient screens positive for possible Ebola:
 - Notify Charge Nurse of a patient possibly infected with Ebola.
 - Activate Appendix II Charge Nurse Positive Screen Algorithm.
 - c. Patient should be moved through the outside door into the entry of the META area. Triage nurse will stay with the patient until handed off to a staff member wearing appropriate PPE.
 - d. Anyone accompanying the patient will be moved to the META lobby to await further instructions. These individuals will be asked for contact information and screened for symptoms. Contact information will be provided to public health as needed.
 - e. Transfer of patient into the Biocontainment unit:
 - Staff members who admit patient to unit must be in appropriate PPE (see Appendix IV)
 - Bag patient's personal possessions, including clothing, until patient's infectious status has been determined.
- B. Emergency Department at Angleton Danbury Campus or Clinic (Appendix III)
- a. Patients will be screened using Appendix IV (clinic/AD algorithm). If patient screens positive, implement the following precautions:
 - b. PPE: level 1 (see Appendix IV)
 - c. Waste will be placed into the biohazard container which is sealed. Waste will be transported per protocol in a biohazard drum if the patient is determined to be a PUI or confirmed EVD. If Ebola is ruled out, waste may be managed per usual protocol.
 - d. Patients should be evaluated by a physician wearing proper PPE, as above, for exposure risk and symptoms consistent with EVD in consultation with the Infectious Diseases attending physician and Healthcare Epidemiology.
 - Contact Infectious Diseases faculty member on-call attending through the paging operator or phone 409-772-4004.
 - Healthcare Epidemiology: Phone 2-3192 or page 409-643-3133.
 - e. If the patient meets criteria as a PUI, the appropriate notification should be made to transport the patient to UTMB via ambulance.
 - f. Cleaning and decontamination of the room: After the patient departs, patient care staff will clean the room as follows:
 - The same PPE should be worn as that used for evaluation of the patient.
 - All surfaces in the room will be cleaned, followed by heavy application of a 1:10 dilution of sodium hypochlorite (bleach) to all surfaces such that surfaces are left very wet.
 - When cleaning and disinfection of the room is completed, remove PPE and perform hand hygiene.
- C. EMS will not transfer a patient who is a PUI unless the patient presented to a UTMB facility and the ED has been notified.
- D. Telephone screening (clinic or Access Center): If patient answers affirmatively to screening questions, the patient should be instructed to stay in current location and not to go to a healthcare facility until notified. Consult with the Infectious Diseases attending physician and Healthcare Epidemiology. If the patient screens as a PUI, notify the appropriate county health department to determine the designated

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location for further assessment and treatment. Contact for Galveston County Health District: 409-938-2211.

E. Diagnosis

1. The ID faculty member will assess the patient. If the patient is determined to fit criteria for a PUI, the ID faculty member will order appropriate tests and the patient will be admitted for care until the diagnosis is finalized.
2. Testing:
 - a. If the initial test for EVD is negative and the patient remains symptomatic for 72 hours, the patient will remain in the BIOCONTAINMENT UNIT and be retested. If symptoms do not persist or a second test is negative, the diagnosis of EVD is ruled out. Public health will be notified prior to discharge.
3. If EVD is diagnosed by positive test, treatment will continue in the BIOCONTAINMENT UNIT area in META until the patient is eligible for discharge per CDC criteria or expires.

IV. Transport of Patient to Biocontainment Unit isolation room (META in ED) by EMS

- A. EMS will notify the ED of a transfer, which will be arranged through SETRAC.
- B. EMS will follow protocols outlined in the Regional Ebola Transport Ambulance Plan.
- C. On arrival at the Emergency Department, the ambulance crew will deliver the patient to the door of the META area. The ambulance will be met by a UTMB staff member to assist in preparing the patient for entry. Any external contamination of the patient's attire or the wheelchair will be removed prior to entry. A UTMB staff member will transport the patient from the META entryway into the BIOCONTAINMENT UNIT treatment area.
- D. Cleaning ambulance:
 - After the patient is moved to the bed, linens will be removed and placed into the waste drum.
 - Environmental surfaces of the ambulance will be protected using EMS protocol. UTMB will assist as needed to assure the level of cleaning and disinfection is appropriate based on the patient's condition and level of contamination to the ambulance.
- E. The ambulance crew will doff their PPE outside the ambulance. They will discard the PPE in a waste drum. The crew will then practice hand hygiene. The ambulance will be cleaned and disinfected per agency protocol. A UTMB staff member may assist if the ambulance is heavily contaminated.

V. Activation of the unit (see specific protocols for BIOCONTAINMENT UNIT and Laboratory)

- A. The Biocontainment Unit and the point of care laboratory will be activated (see procedures for the Biocontainment Unit and the Laboratory).
 1. Verify the area is under negative pressure. Although this is not an airborne disease, it will be helpful to control potential aerosols.
 2. Clear other patients from the META area.
 3. The area will be supplied with all materials necessary for patient care,

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management of the environment, and management of waste.

B. Designated areas: see Biocontainment Unit protocol for hot and cold zones

VI. Care of inpatients with EVD

A. Patient care protocols: Patients of all ages with suspected or confirmed Ebola will be cared for in the Biocontainment Unit. Staffing will be appropriate for the patient's age. Visitors, including parents and care-givers of pediatric patients, will not be permitted in the patient's room. Accommodations will be made for electronic communication.

1. Care of the adult patient with suspected or confirmed Ebola
2. Care of the pediatric patient with suspected or confirmed Ebola
3. Care of the pregnant patient with suspected or confirmed Ebola patient
4. Care of the neonate born to a woman with suspected or confirmed Ebola

B. PPE (see appendix IV) and work practice controls

1. The purpose of PPE is to prevent blood and other infectious materials from coming into contact with mucous membranes (eyes, nose, and mouth), skin, or clothing of staff members.
2. The level of PPE will be determined by unit management in response to the patient's condition.
3. PPE will be donned using a checklist and with assistance of a PPE monitor.
4. PPE will be doffed using a checklist and with the assistance of a PPE monitor.

C. Staff/patient safety

1. Limit aerosol-generating procedures (e.g. suctioning, bronchoscopy) to the extent possible.
2. All medications (including aerosolized medications) administered to the PUI/EVD patient, whether from a single-dose or multi-dose vial, will remain in the EVD isolation patient care area and be used solely for that single EVD patient.
3. A log of all persons entering the room will be maintained (see BIOCONTAINMENT UNIT protocol)
4. Nurses will work in 4-hour shifts in the isolation room.
5. PPE monitor, as noted above, a member of the patient care team will monitor all donning and doffing of PPE and assist as needed.

D. Equipment

1. Single use devices will be used whenever possible and then discarded appropriately.
2. Any reusable equipment used in the care of an EVD patient (e.g. fiber-optic scope, non-disposable surgical instruments, etc.) will be sequestered AND MAY NOT BE PUT BACK INTO GENERAL CIRCULATION/GENERAL USE until the appropriate sterilization/disinfection procedures are performed as directed by EHS.

E. Cleaning and disinfection of the environment and waste management.

1. Cleaning will be performed by nursing staff if patient is determined to be a PUI or if diagnosis with EVD is confirmed. If EVD is ruled out, the room

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- may be cleaned by Environmental Services following routine procedures.
2. All surfaces in the room will be cleaned and disinfected with a disinfectant approved by the EPA: <http://www.epa.gov/oppad001/list-l-ebola-virus.html>. This includes a 1:10 solution of chlorine bleach and Cavicide.
 3. Linen will be double-bagged in red leak-proof bags at the site of use. The outer bag will be disinfected prior to leaving the room and will be placed into the waste drum.
 4. A solidifier will be placed into liquid waste such as urine, feces and vomitus. All waste will be double-bagged in red leak-proof bags. The outer bag will be disinfected prior to leaving the room and will be placed into the waste drum in the anteroom.
 5. Procedures for managing spills of blood and body fluids: See Biocontainment Unit protocol.
- F. Specimen collection and transport of patient specimens (see Laboratory protocols)
1. Activate point of care (POC) laboratory upon activation of the BIOCONTAINMENT UNIT.
 2. POC staff will don level 1 PPE prior to entering the lab.
 3. All specimens needed for laboratory testing will be obtained by nurses caring for the patient.
 4. Equipment for use in the most commonly anticipated lab tests has been identified for testing in a biosafety cabinet in the POC laboratory near the patient's room, for use only with the EVD-suspected patient(s). If additional point of care (POC) testing devices (e.g. blood glucose meter, etc.) are used, they will also be dedicated to EVD patients and will not be used with other patients or samples.
 5. Transporting specimens to point of care POC lab:
The specimen must be placed in a leak-proof sealed bag with absorbent materials, disinfected, and placed into an IATA certified shipping container, which is disinfected. This is carried by a staff member to the door of the anteroom, where the container is placed in a durable leak-proof (e.g. Igloo) container.
 6. Transporting specimens to the clinical laboratory. **Any specimen sent to the clinical laboratory will be inactivated.**
 7. All laboratory waste is placed in a biohazard drum for incineration.

VII. Discharge of Patients with EVD

- A. Discharge of the patient who has recovered from EVD will be in coordination with CDC to assure all discharge criteria have been met.
- B. Safe Handling of human remains of Ebola patients.
 1. Arrangements will be made in advance with local and state public health authorities and designated mortuaries prepared to handle and bury or cremate EVD patient remains according to all applicable regulations.
 2. Notify Medical Examiner
 3. Autopsies will NOT be performed on deceased EVD patients.
- C. Complete death certificate
- D. Postmortem preparation: see Biocontainment Unit protocol

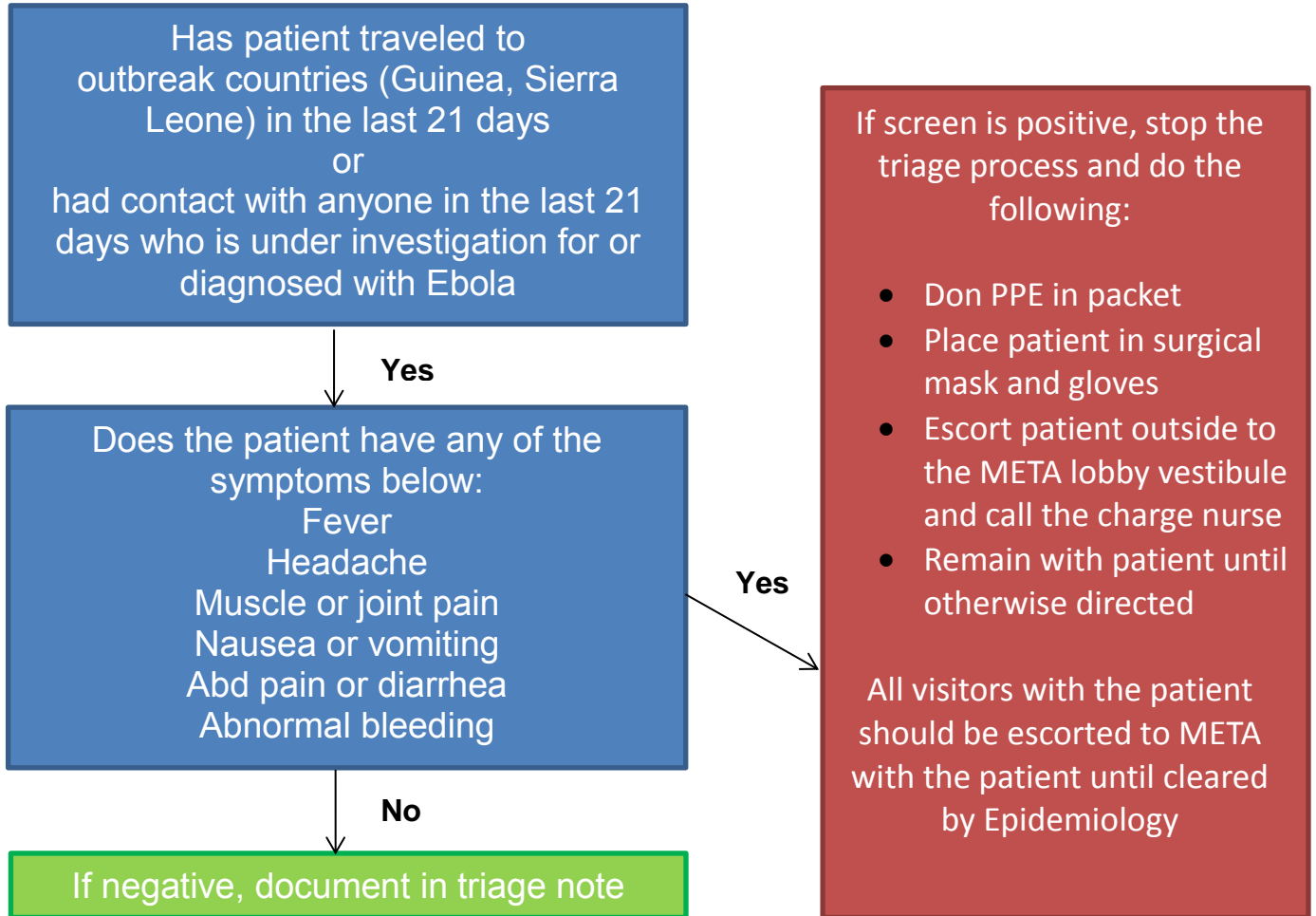
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1. Transport the body using a pre-identified hearse or vehicle to a pre-identified place of final disposition using a pre-identified route.
 2. Local and state public health authorities will be contacted prior to transporting EVD patient remains to the designated mortuary. Aircraft will not be used to transport remains of an EVD patient. Coordinate interstate transport with CDC by calling the Emergency Operations Center at (770) 488-7100. Human remains transported for interment, cremation, or medical research at a college, hospital, or laboratory are excepted from the U.S. Department of Transportation's Hazardous Materials Regulations (49 C.F.R., Parts 171-180). See §173.134(b)(14).
- VI. Cleaning and disinfection of the isolation room after the remains of the Ebola patient have been removed:
- A. After the departure of the patient, the room will be terminally cleaned by staff involved in the care of the patient, utilizing procedures outlined previously.
 - B. The laboratory will be cleaned by laboratory staff.
 - C. After all waste drums have been removed, EHS staff will decontaminate the hot zone including equipment.
 - D. After final decontamination, the equipment will be moved to clean storage.
 - E. After the final decontamination, the entire area can be mopped using an approved disinfectant.
- VII. After the last patient is discharged from the Biocontainment Unit and the unit has been terminally cleaned/disinfected, the unit may be opened for use by the Emergency Department for routine patient care.

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Appendix I

TRIAGE / AMBULANCE DESK Ebola Screening Process for ED



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Appendix II Charge Nurse Positive Screen Algorithm

Identify:

- Page Healthcare Epidemiology 409-643-3133 to confirm positive screen or call 2-3192 or 214-497-8454.
- If Epidemiology confirms positive screen, continue with algorithm. If negative, return operations to normal and place patient in appropriate care area.

Isolate:

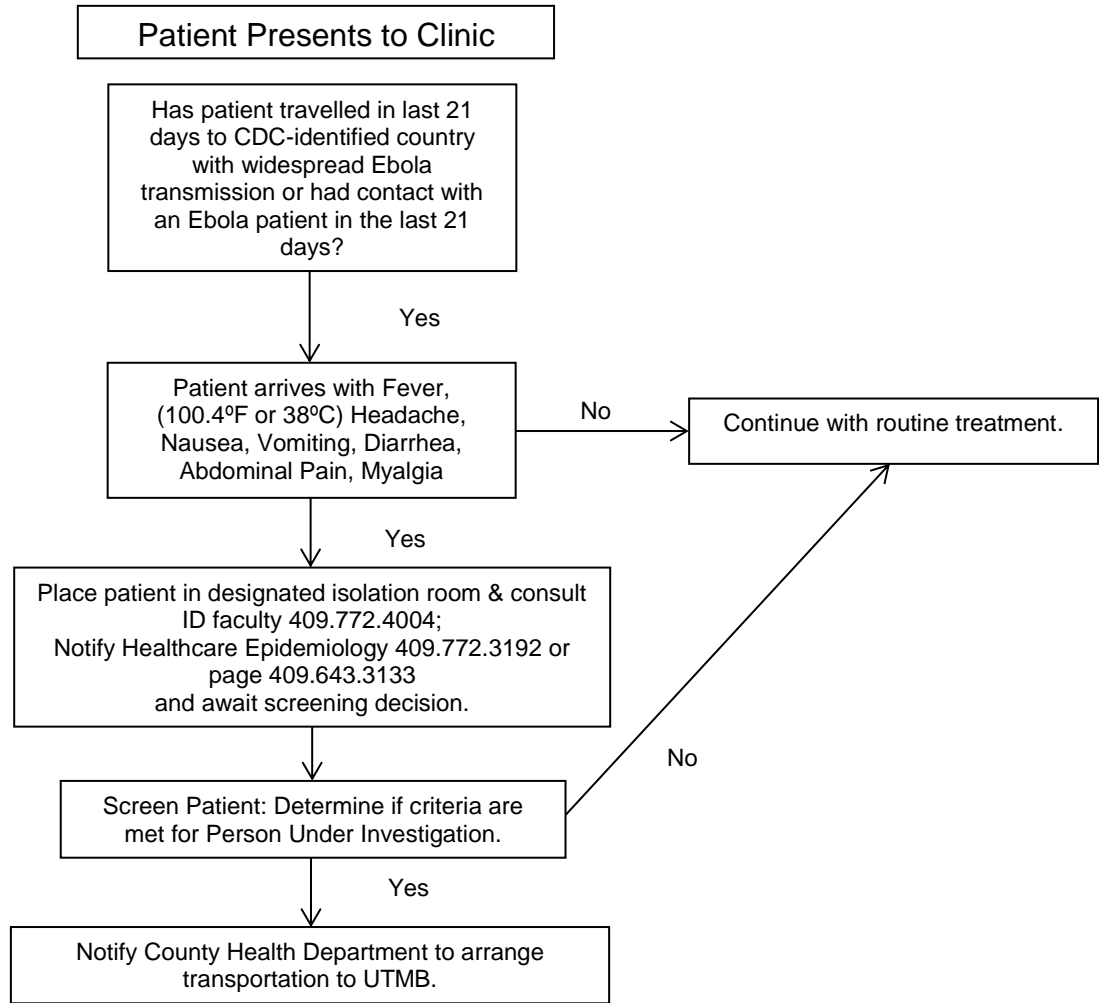
- Move patients out of the META rooms to appropriate areas throughout the department
- Reassign someone to cover Triage.
- Set up BIOCONTAINMENT UNIT area.
- Staff assigned to admit the patient will don PPE with the assistance of a monitor.
- Assign someone to record the names of all staff that came in contact with the patient, as well non-employees who were in the lobby. See Resource Materials section.
- Once room is set up and staff are in PPE, patient can be escorted to directly room by someone in full gear. Pt should be wearing PPE until placed in the room. Triage nurse and any visitors remain in META lobby until contact information is obtained.

Communicate:

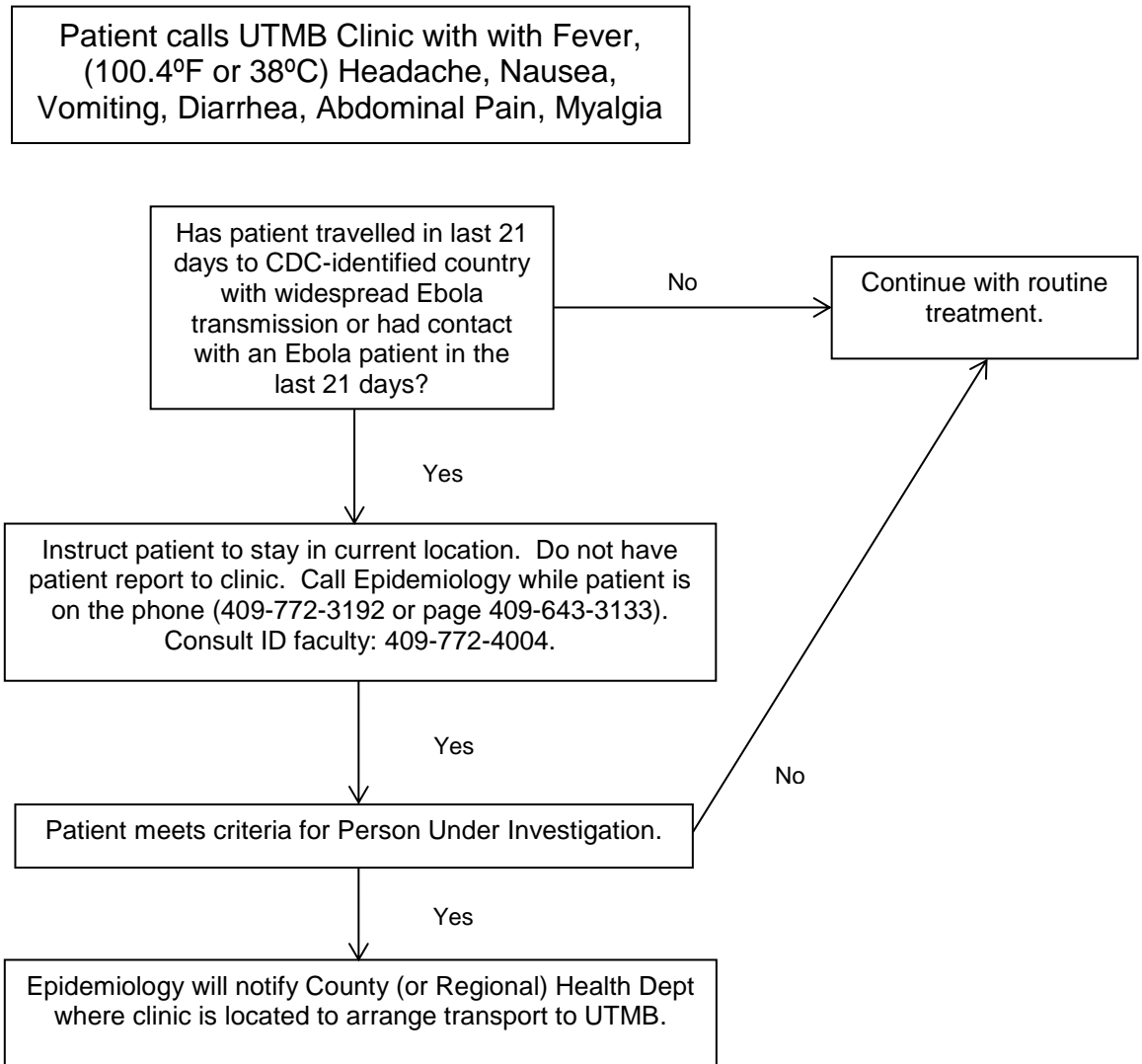
- Page BIOCONTAINMENT UNIT Alert team and follow the BIOCONTAINMENT UNIT alert algorithm.
- Notify Campus Police @21111.
- Contact the on-call ED manager.
- Assign someone to relay information to the rest of the staff to keep everyone calm and maintain normal department functions/care of patients.
- Charge Nurse will ensure that current patients are notified as needed.

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**04.01 – Appendix III
Screening Patients for Suspected Ebola Virus Disease (EVD) at Outpatient Clinics or Angleton Danbury Campus**



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Appendix IV

Levels of Personal Protective Equipment

Criteria	Level 1	Level 2	Level 3
Stage of illness*	<ul style="list-style-type: none"> Screening for possible Ebola PUI-test pending or initial test negative 	<ul style="list-style-type: none"> EVD-very early onset EVD-late in recovery phase OR Any stage if employee's task does not involve direct patient contact 	<ul style="list-style-type: none"> EVD-moderate to severe symptoms EVD-management of expired patient
Risk of blood/body fluid splash	Low: No blood/body fluid loss or very minimal body fluid loss (i.e. absent or minimal diarrhea, vomiting, or bleeding)	Low: Direct patient contact when the following conditions exist: Minimal body fluid loss OR Employee's task does not involve direct patient contact. <ul style="list-style-type: none"> Serving as PPE monitor Working in POC laboratory Management of remains after the body has been fully contained by 3 leak-proof bags that have been disinfected 	High: Direct patient contact when the following conditions exist: Moderate to severe body fluid loss (diarrhea, vomiting, or bleeding)
PPE Needed for Level			
Disposable scrubs		X	X
kleenguard suit			X
Fluid impervious gown	X	X	X
Shoe-leg covers		X	
Head covering	Surgical cap		Surgical cap plus shroud for PAPR
Face shield	X	X	
N95 respirator	X	X	
PAPR	Only if unable to wear an N95	Only if unable to wear an N95	X
Gloves	2 pairs	2 pairs- at least one pair with extended cuff	2 Procedures 3 pairs: middle pair puncture resistant, at least one pair with extended cuff Taped to kleenguard suit
Shoes, cleanable, left in area	NA	X	X

* Level of PPE may be changed by unit management if there is a change in the patient's condition.

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