

Emory Healthcare Ebola Preparedness Protocols

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Ebola Virus Disease (EVD) is used synonymously with EBOV.

OVERVIEW

Purpose

To standardize the risk assessment, triage, transportation, and management of patients with possible/confirmed Ebola Virus Disease (EVD) throughout Emory Healthcare (EHC) hospitals and clinics.

Introduction and Background

It is the mission of EHC to take care of those in need, regardless of their illness. With that in mind, safety always has been and will continue to be the number one priority. EHC is committed to providing a safe environment for everyone, including patients, visitors and staff in its facilities. The U.S. Centers for Disease Control and Prevention (CDC) recommends that all hospitals in the U.S. be prepared to care for patients who could have EVD.

About Ebola

- While Ebola is a dangerous virus that can be life-threatening, its spread can be contained.
 - EVD is spread by contact with blood or any other body fluid from a person with symptoms of EVD infection. Infection is spread when infected body fluids come in contact with mucous membranes, breaks in the skin or by sharps injuries.
 - EVD is not transmitted through the air unless there is exposure to body fluid droplets from an infected person (e.g., coughing, sneezing or spitting).
 - EVD is not transmitted from persons who don't have symptoms of infection (see below for symptoms of EVD infection).
- EVD usually starts with a sudden onset of fever along with symptoms, including chills, weakness, abdominal pain, joint muscle aches, headache, lack of appetite and body aches. Vomiting and diarrhea are common. In severe cases, internal and external bleeding may occur.
- The illness begins an average of 8-10 days following exposure (although it could be from 2 to 21 days).
- Some of the symptoms of EVD are similar to those of other infections that are common in West Africa, such as malaria and diarrheal illnesses.
- There currently are no FDA-approved medications specific for treating Ebola virus infection. The main way we treat EVD is through supportive care. This means providing excellent medical and nursing care, including monitoring and replacing fluids and electrolytes, as well as transfusions as necessary.
- The goal is to provide this care to the patients until their bodies can control the virus.
- EVD spreads in Africa because of inadequate infection control and health practices and burial ceremonies that expose people to infectious body fluids. Control of EVD has been difficult because the health care systems lack resources and expertise; many villages are remote, creating geographic barriers for access to proper care, treatment and infection control practices; and

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because of other cultural and environmental factors. Many of these conditions do not exist to the same extent in the U.S. The CDC does not believe that EVD poses a significant risk of spreading in the U.S.

Our Commitment

- We are committed to providing a safe environment for our patients, visitors, staff and providers that meets or exceeds all CDC recommendations for taking care of patients with possible/confirmed EVD.
- We have always taken care of sick patients who come to EHC hospitals and will continue to do so.
- We provide patients with access to services without discrimination based on age, race, ethnicity, religion, culture, language, physical or mental disability, socioeconomic status, sex, sexual orientation, and gender identity or expression, as well as source of payment for care.
- We will conduct a risk assessment of patients with recent travel to a country where EVD is present or who may have been exposed to EVD in another country.

Assumptions

1. EHC patients with confirmed EVD will be admitted to the Serious Communicable Diseases Unit (SCDU) at Emory University Hospital (EUH).
2. An essential part of a high-risk assessment will be screening by an Infectious Diseases (ID) physician.
 - a. The hospital epidemiologist/ID attending on-call at a particular hospital will be engaged to perform the initial risk assessment.
 - b. The ID attending on-call for the SCDU will be engaged whenever there is consideration for transfer of a patient to that Unit or if rapid Ebola virus testing is requested.
 - c. The State Health Department will be engaged when EVD is suspected.
3. Only patients assessed as having a high-risk of EVD, as determined by the on-call SCDU ID physician, will be admitted to the SCDU without having laboratory-confirmed infection.
4. The decision for performing rapid EVD testing needs to consider pretest probability of infection (i.e., screening) and the heightened concern about transmission of EVD in health care settings.
5. Risk assessments will need to be done for patients entering our system through numerous routes, including:
 - a. Calls to Transfer Center (i.e., Admissions from outside hospitals)
 - b. Emergency Department (ED)
 - c. Walk-ins to facility
 - d. Labor and Delivery
 - e. Ambulatory clinic setting clinics

Risk Assessment

Because travel to high-risk areas is one of the risk factors for transmission, these guidelines address patients who are considered at high risk for EVD who meet travel criteria. In addition, exposure to a known EVD patient has also been included in the assessment. This document should be used in conjunction with the EVD screening algorithms in place for the ED, in-hospital unit, Travel and other clinics, and the Transfer Center. Upon initial arrival to one of these entry points into the system, patients will be screened for a positive travel history and symptoms consistent with EVD (see Support Documents 1 and 2). For patients with other points of entry into EHC (e.g., The Emory Clinic, Emory Specialty Associates), see Support Documents 3 through 8. Patients are stratified as high, intermediate, or low risk for EVD based on the exposure risk assessment along with clinical findings. The categories are as follows:

- High-risk of EVD (Refer to Support Document 9)
 - High-risk exposure (defined below) plus ANY symptoms suggestive of EVD (fever [subjective or ≥ 38 degrees C, 100.4 degrees F] and/or other symptoms, including severe headache, muscle pain, vomiting, diarrhea, abdominal pain, bleeding). High-risk exposure is defined by the CDC as:
 - Percutaneous (e.g., needle stick) or mucous membrane exposure to body fluids of confirmed or suspected EVD patient
 - Direct care of an EVD patient or exposure to body fluids from such a patient without appropriate personal protective equipment (PPE)
 - Processing body fluids of confirmed EVD patients without appropriate PPE or standard biosafety precautions
 - Direct contact with a dead body without appropriate PPE in a country where an EVD outbreak is occurring
 - Low-risk exposure (defined below) plus high probability of infection based on clinical assessment.
 - Low-risk exposure defined by the CDC as:
 - Household contact with an EVD patient
 - Other close contact with EVD patients in health care facilities or community settings. Close contact is defined as
 - Being within approximately 3 feet (1 meter) of an EVD patient or within the patient's room or care area for a prolonged period of time (e.g., health care personnel, household members) while not wearing recommended PPE (i.e., standard, droplet and contact precautions)
 - Having direct brief contact (e.g., shaking hands) with an EVD patient while not wearing recommended PPE
 - NOTE: Brief interactions, such as walking by a person or moving through a hospital, do not constitute close contact

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- High probability of clinical EVD is based on compatible clinical symptoms (fever; diarrhea; unexpected bleeding; laboratory findings, including low platelet count; absence of alternative diagnoses) and ID clinical assessment
 - Rapid Ebola virus testing should be performed on any patient with high risk of EVD with disposition (admission to SCDU) driven by test results. If rapid testing can't be done or if symptoms have been present for < 48 hours at time of testing, admission to SCDU may be authorized by the on-call SCDU ID.
- Intermediate-risk of EVD
 - Low-risk exposure plus
 - Clinical syndrome not highly suggestive of EVD that may or may not include fever or with an alternative diagnosis (such as malaria) with ongoing symptoms or with compatible clinical illness with negative rapid Ebola virus test performed within first 48 hours of symptoms
 - Evaluation should include extensive work-up for alternative diagnoses, rapid Ebola virus test for those with any compatible symptoms or follow-up Ebola virus test for those with negative test performed early after onset of symptoms
 - Disposition of patient may require conference between screening ID clinician and on-call SCDU ID
- Low-risk of EVD
 - No known exposure to EVD plus any travel to affected country plus compatible symptoms developing in the appropriate time frame after travel/return from affected country (2-21 days, peak 8-10 days)
 - Evaluation should consider:
 - Time/duration of exposure in country with EVD
 - Updated information on transmission within countries (e.g., if no cases occur in a country for 2 incubation periods (42 days), the country can be considered EVD-free)
 - Where patient was in country with EVD, reason for stay in country (funeral of family member for example)
 - Exposure to anyone with clinical illness
 - Receipt of malaria prophylaxis
 - Low-risk patients should receive appropriate evaluation for likely cause of clinical syndrome. Necessity of performing Ebola virus testing should be considered on a case-by-case basis. Ebola virus testing requires approval of on-call SCDU ID.

Specimen Management & Laboratory Protocol for High-Risk Testing

If a patient falls into high- or intermediate-risk category consistent with the need to do EVD testing, the Highly Infectious Phlebotomy protocol will be initiated. This protocol is designed to ensure safety of staff and other patients by providing clear direction for performing both in-patient and clinic collections. If a potentially high-risk or intermediate-risk patient (as determined by the on-call SCDU Infectious Diseases physician) requires a blood draw in one of Emory's clinic locations, then Emory Medical Lab-designated staff phlebotomists trained and with demonstrated competency in PPE or educated SCDU nurses will be dispatched to draw the blood. In-house patients identified as highly infectious will be drawn by the in-house care team, a designated phlebotomist or nurse trained in PPE measures.

Purpose: To ensure the safety of staff and other patients by providing clear direction for performing both in-patient and clinic collections along with secure specimen transport to the laboratory of potentially highly infectious samples. If a potentially highly infectious patient (as determined by on-call Infectious Diseases physician for the hospital in consultation with the on-call SCDU ID physician) requires a blood draw in one of Emory's clinic locations where Emory Medical Lab (EML) staffs phlebotomists, a phlebotomist will be dispatched to draw the blood. In-house patients identified as highly infectious will be drawn by the trained, in-house Phlebotomy team or nurses.

Process:

I. Lab Support at Clinic Location

Travel Well clinic at the Emory University Hospital Midtown Medical Office Tower (MOT) often sees patients who could have acquired a highly infectious disease and serves as the internal standard of practice for laboratory testing required to determine need for admission and direct further work up. This assumes that the patient is clinically stable to remain in an outpatient clinical setting. The following process will be followed:

- a. The on-call SCDU ID physician will contact the EML MOT Lab and state a blood collection is required for a potentially highly infectious patient. The following information will be provided:
 - i. Patient name, Medical Record Number (MRN), Date of Birth (DOB), clinic location and tests ordered
- b. Fax number will be provided by phlebotomy, and the requisition containing all test orders will be faxed to the MOT lab in order for the phlebotomist to ascertain the proper tubes needed. Typical testing ordered for these patients are CBC, CPCOMP, Binax NOW rapid malaria test, EVD PCR, and aerobic and anaerobic blood culture. However, no labs will be sent to Core lab until EVD is ruled out by SCDU Lab through PCR. No orders will be placed in the computer.

- c. The MOT Lab staff member receiving the call will contact EUHM Processing to alert them of the incoming samples.
- d. Phlebotomist will be dispatched with phlebotomy tray containing all required supplies to perform blood draw according to the PPE Matrix (Appendix 5) and sufficient materials to package the samples for transport (see instructions below).
- e. The phlebotomist will bring into the room only the material necessary for the phlebotomy and the biohazard bags to place the specimens in. The phlebotomy tray and external packaging will be left outside of the room.
- f. All phlebotomy procedures will be followed as usual, including donning of PPE, patient identification and phlebotomy, and then removal of PPE. There must always be a second care provider in the room to assist the phlebotomist in order to supervise the donning of the protective equipment, collection of the blood, and assist if there are breaches in protocol or spills, if needed.
 - i. The PPE will be donned in accordance with PPE Guidelines (Appendix 6, Donning High-Level PPE for Patient Room).
 - ii. In addition to the established procedures, the phlebotomist will wipe the outside of the sample tubes/bottles with a disinfectant wipe. Allow to air dry and then hand label the samples legibly (no visible contamination should be on the outside of the samples).
 - iii. Phlebotomist removes all PPE as outlined in Appendix 6, Doffing High-Level PPE for Patient Room and disposes of the items used for phlebotomy, as well as the PPE in the receptacle provided at the location for this.
 - iv. The phlebotomist then dons a new pair of gloves and places the samples into the biohazard bag and wipes the outside of the bag with a disinfectant wipe. These gloves are then removed.
 - v. Prior to exiting the room, the phlebotomist will don another new pair of gloves in order to touch the door, and then will sanitize gloved hands outside of the room and remove the gloves.
- g. Outside of the room, the phlebotomist will place the samples into a second biohazard bag. They, then, place the double bagged specimens into the Styrofoam container that has an external card box container. They will close and seal with tape the outer card box container. The card box container will have a mailing sleeve attached to it and the phlebotomist will place the paper requisition so that the patient identifiers are visible into the sleeve. There will also be a label stating **“DO NOT OPEN.” EML COURIER TO TRANSPORT TO EUH PROCESSING. HOLD FOR POCT TECH.**
- h. Specimens will be transported as follows:
 - i. Hand carry to EUHM Processing
 - ii. **Note:** Specimens will not be transported via pneumatic tube.
- i. Specimen will be held in the processing area as it was packaged until the EML courier service takes it to EUH for testing.
 - i. Processing will contact Processing/Courier MTIII to arrange appropriate courier transportation of sample.

- j. Upon arrival to EUH Processing, the specimen (still in the intact packaging) will be picked up from the processing area by the Point of Care Testing (POCT) on-call staff member who has been contacted by the on-call SCDU ID physician and will be transported to the SCDU laboratory.

II. Lab Support for Hospital Inpatient or Hospital Outpatient (ED):

The following procedure will be performed:

- a. Hospital Phlebotomy will be notified by phone of any patients prior to any blood draws, including patient full name, MRN, DOB and room number.
- b. Phlebotomy will post this information prominently in coordinator area and staff will be informed.
- c. The coordinator will alert processing that these samples will be delivered to their area upon collection. Phlebotomist will be dispatched with labels. Most required PPE should be available at room or nurses station, but the phlebotomist will ensure they don according to the PPE Matrix (Appendix 5).
 - i. Sufficient materials to package the samples for transport
 - ii. All phlebotomy procedures will be followed as usual, including donning of PPE, patient identification and phlebotomy, and then removal of PPE. There must always be a second care provider in the room to assist the phlebotomist, in order to supervise the donning of the protective equipment, collection of the blood, and assist if there are breaches in protocol or spills, if needed.
 - iii. The PPE will be donned in accordance with PPE Guidelines (Appendix 6, Donning High-Level PPE for Patient Room).
 - iv. In addition to the established procedures, the phlebotomist or nurse will wipe the outside of the samples tubes/bottles with a disinfectant wipe, allow to air dry and then label the samples (no visible contamination should be on the outside of the samples).
 - v. Phlebotomist or nurse removes all PPE as outlined in the PPE Guidelines (Appendix 6, Doffing High-Level PPE for Patient Room) and disposes of the items used for phlebotomy, as well as the PPE, in the receptacle provided at the location for this.
 - 1. The phlebotomist or nurse then dons a new pair of gloves and places the samples into the biohazard bag and wipes the outside of the bag with a disinfectant wipe. These gloves are then removed and another set are donned prior to exiting the room in order to touch the door, and then they will sanitize their gloved hands outside of the room and remove gloves.
 - vi. Outside of the room, the phlebotomist or nurse will place the samples into a second biohazard bag. They, then, place the double-bagged specimens into the Styrofoam container that has an external container. They will close and seal with tape the outer container. The container will have a mailing sleeve attached to it and the

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phlebotomist or nurse will place the paper requisition so that the patient identifiers are visible into the sleeve. There will also be a label stating **“DO NOT OPEN.”**
EML COURIER TO TRANSPORT TO EUH PROCESSING (if collected at EUHM) **HOLD FOR POCT TECH.**

- d. Specimens will be transported as follows:
 - i. Hand carried to SCDU lab if at EUH, or
 - ii. Hand carried to nearest EML testing laboratory for courier to SCDU lab if at other location.
- Note:** Specimens will not be transported via pneumatic tube.

Education

System-wide education for risk assessment, triage and care of high-risk patients will be provided at points of entry into the EHC system. Competency verification will be incorporated into the education process. SCDU-trained staff at each entity will be a resource for on-site care of EVD positive patients until transportation to the SCDU can be arranged. See Support Document 10.

Occupational Health

All employees involved in the direct care of a patient with EVD will be monitored for 21 days after the last direct care exposure with a confirmed EVD patient. Refer to Occupational Injury Management EVD Protocol (Appendix 1) and Direct Health Care Provider Symptom Questionnaire (Appendix 2).

SPECIAL COMMUNICABLE DISEASES UNIT (SCDU) BACKGROUND

The SCDU at EUH (the Unit) is a product of extensive collaboration between EHC, the Emory University School of Medicine (EUSOM), and the U.S. Centers for Disease Control and Prevention (CDC). The CDC recognized the need for such a unit for its staff, guest researchers, visiting scientists and contractors who could require urgent, immediate care after response to epidemiological outbreaks around the world where such personnel may have been exposed to a serious communicable infectious agent (Agents handled at Biosafety Level [BSL] 4, such as variola) or an unknown agent. Such exposure and/or infection could require that the individual be isolated in a biocontainment patient care unit to prevent secondary transmission to other individuals.

In addition to the needs of the CDC and its personnel, Emory recognizes its own need for such an infectious diseases unit. Researchers in the laboratories at Emory University work with a number of infectious pathogens, both with *in vitro* models and *in vivo* animal models. Emory faculty also performs field research involving infectious pathogens in the United States and overseas. Occupational infection in such an employee might require the initiation of isolation precautions in a biocontainment patient care unit to prevent secondary cases.

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The patient care mission of EHC also necessitated the creation of a unit where patients with serious communicable diseases could be cared for safely. Emory is the tertiary referral center for much of the southeast United States. Its Travel Well Clinic provides medical care for many of the travelers in the region, including the employees of many companies based in Atlanta. Hartsfield-Jackson Atlanta International Airport remains the busiest airport in the world, with many of the passengers who pass through the airport having originated their travel at overseas locations where serious communicable diseases are endemic.

While the initial planning for the Unit focused on pathogens requiring Biosafety Level 4 containment, such as filoviruses, arenaviruses, flaviviruses (tick-borne hemorrhagic fever group), bunyaviridae, variola, Nipah and related novel paramyxoviruses, the emergence of severe acute respiratory syndrome (SARS), an outbreak of monkeypox in the United States in 2003 and the continuing transmission of avian influenza virus in multiple geographic locations added additional impetus to the search for an area where patients with highly communicable, serious infectious diseases could receive intensive medical care safely.

All of these factors culminated in the development of the SCDU at EUH. This manual is designed to introduce the methods used while treating EVD patients at the SCDU at EUH. There are some aspects of these standard operating procedures that are more expansive and go beyond what may be required for the care of a patient infected with EVD.

Care in the Unit is delivered according to an extensive set of protocols developed through collaboration between personnel at the EUSOM, EHC and the CDC. This manual is organized in sections covering the major aspects of the Unit and its operations. There are also appendices in the back with certain general documents.

Physical Characteristics

The Unit has been designed so that patients with any known infectious disease can be cared for in an environment that is safe for health care workers, other patients and the community at large. The Unit contains three patient care rooms, each entered only through an anteroom. Air in the three patient rooms is under net negative pressure in relation to the surrounding areas, with all airflow going from the hallway to the anterooms to the patient rooms. Air in the patient rooms has a laminar air flow across the patient bed. All air from patient rooms undergoes high-efficiency particulate air (HEPA) filtration before being 100% exhausted to the outside. The outside exhaust is geographically separate from any hospital air intake locations, and is high enough to allow for dilutional disbursement. The patients cared for in the Unit will span a wide range of clinical illnesses, from asymptomatic to critically ill. Because of this potential, the Unit has been designed to deliver a level of care that can equal that of any of the hospital's intensive care units. Each room is also plumbed for dialysis. The Unit has a certified biosafety cabinet for specimen processing in a dedicated laboratory and an autoclave for processing of waste generated. Patients will preferentially be admitted to the Unit directly from the outside through an external door

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that opens directly into the Unit. When entry through this door is not possible, the patient will be admitted through the exterior hospital doors opening onto the back of the hospital.

The staffing for the Unit is provided by physicians who are members of the Infectious Diseases Division at the EUSOM, experienced EHC nurses who have received special training in the care of patients with serious communicable diseases and laboratory technologists. Specialty care is available through the specialty services at EUH. All personnel who directly care for the patient in the Unit receive intensive training on management of the patient and all PPE and infection control measures.

As patients may be contagious prior to admission to the Unit, the Grady EMS Biosafety Transport Team, which has specially trained personnel and with whom this unit has planned and exercised since inception, will transport all patients to the unit. This team is on-call 24 hours a day, 7 days a week, and is capable of responding to a call for scheduled transportation from anywhere in Georgia. Their ambulance has been modified for ease of disinfection following patient transport.

Patients presenting to an EHC ED with symptoms of any serious communicable disease will immediately be isolated in a private room within the ED until positive testing can be completed. If the patient is positive for a serious communicable disease, the specially trained nurses of this Unit will respond to aid in care and transportation of the patient.

STAFFING

Staffing

The medical director and Infectious Diseases physicians serve as the primary physicians for patients admitted to the Unit. Each of these physicians is Board-Certified in both Infectious Diseases and Internal Medicine. One of these physicians is available 24 hours a day, 7 days a week, via pager or cell phone. The physicians also make rounds on the patient(s) in the isolation unit as necessary, at a minimum of two times a day. Subspecialty care will be provided, as needed, by designated subspecialty consultation services that already exist at EUH.

The Unit Director is in charge of recruitment and staffing of the Unit. In addition, there are 2 to 3 nurses assigned to the Unit at all times when the Unit is occupied. The level of staffing is dependent on the care needs of the patient and the level of PPE being used. In an effort to minimize traffic in and out of the patient room, SCU nurses develop a wide skill set in order to cover the majority of the patient care and room needs.

Other medical specialties, laboratory, environmental services, facilities and further support personnel are allowed in the isolation suite only if they have received full PPE training.

General Guidelines

1. All physicians and staff entering the patient room are required to complete PPE training and adhere to the same protocols as the supportive clinical staff.
2. Any staff and providers who are pregnant or immunocompromised will not be assigned to provide care for this population.
3. Every effort is made to minimize the number of clinicians entering the room.
4. When a patient is admitted to the Unit, a brief review of the infectious disease that the patient is suspected of being infected with is held for all personnel in the Unit.
5. All staff receive specialized training in the care of patients with serious communicable diseases upon employment, at least annually, and participate in exercises on activation of the Unit at least biannually.

Physicians:

The SCDU Medical Director and contributing Infectious Diseases physicians rotate call so they are available 24 hours a day, 7 days a week. When necessary, hospital subspecialists are consulted. Should ventilator support be required, the critical care team that normally oversees the ventilator needs of patients in the intensive care units will supervise it. Requests for consultation by the subspecialties or critical care team are made by paging the designated clinician. Subspecialty consultation is available 24 hours a day, 7 days a week, through the hospital paging system.

Nursing:

Nursing care is provided by a specially trained group of nurses working in the hospital system. The provision of nursing care is available 24 hours a day, 7 days a week. Two nurses are on-call at any given time. Nurses are not on-call for this service while they are on their normal nursing shifts, ensuring their timely availability. The on-call nurses are required to be able to be at the Unit within 60 minutes after being notified of the activation of the Unit.

The SCDU Unit Director is responsible for recruiting these nurses, maintaining the on-call schedule, and ensuring continuation of annual competency. The Chief Nursing Officer for each hospital and the Department Director actively recruit nurses from amongst those nurses already employed in the hospital system. The Chief Nursing Officer and the Department Director select nurses who have shown prior interest in and compliance with institutional infection control policies, critical care capabilities and management of patients on research protocols. If a nurse trained for the position is no longer available (due to a change in duties or separation from the organization), another qualified nurse is recruited. When a patient is admitted to the SCDU, the Department Director for the Unit assesses the nursing requirements, and the necessary nurses are reassigned from their normal duties to the SCDU. These nurses report directly to the Chief Nursing Officer and Department Director for the SCDU. When a patient requires admission to the isolation unit, the Chief Nursing Officer or the nursing Department Director will generate a schedule, ensuring nursing coverage of the Unit 24 hours a day, 7 days a week.

The Clinical Nurse Specialist will be responsible for organizing the educational activities in the isolation unit, to include the annual training sessions and the field exercises, and for the evaluation of processes in the isolation unit. In addition, there are 2 to 3 nurses assigned to the Unit at all times when the Unit is occupied. The level of staffing is dependent upon the care needs of the patient and the level of PPE being used. See Guidance Matrix for PPE (Appendix 5). When a patient requires admission in the Unit, the Clinical Nurse Specialist reviews, maintains and updates Standard Operating Procedures.

It is recommended that nurses doff PPE every 4 hours to allow for personal needs and a break. At the highest level of PPE and patient care, 3 nurses will be working in the Unit at one time, in 12-hour shifts. They rotate in 4-hour shifts between the patient room, the anteroom and the nursing desk:

- Nurses in the patient room are in charge of all direct patient care, ensuring the quality of all protective practices of personnel entering and exiting the room, waste management and all patient room cleaning.
- Nurses in the anteroom are utilized as quality control officers, ensuring all protective practices are strictly followed. They are responsible for constantly cleaning after all personnel leaving the patient room; transporting patient room waste through the anteroom and out for processing; and decontaminating all anteroom surfaces, equipment and the locker room. Anteroom nurses are relied upon for charting, supply ordering and stocking.
- When rotating to the desk, SCDU nurses are resources for breaks, food delivery, stocking, supply ordering, retrieving prescriptions, coordinating various patient care orders and managing anything else that is needed.
- In an effort to minimize the number of health care workers potentially exposed to patients isolated in the Unit, nursing personnel will perform all phlebotomist functions, obtain all cultures, perform electrocardiograms (ECG), run dialysis and ventilator management as needed, assist with patient physical therapy and use any other skill sets as necessary. Nursing staff will also perform all duties normally associated with nurse technician, environmental services and unit clerk roles.

A lesser degree of PPE may be utilized in a rule-out situation or once two consecutive SCDU lab and CDC tests for the presence of EVD in the blood plasma and urine come back as “undetectable.” When that occurs, only 1 or 2 nurses may be utilized, dependent on patient needs, and still in 12-hour shifts. The patient remains in the care of the entire SCDU team until discharge from the hospital. Please see the Standard Operating Procedures: SCDU for proper donning and doffing of “step down” PPE within the SCDU (Appendix 6).

At the point when the patient has met clinical criteria to be deemed as non-infectious, he/she will be transferred to a clean room. This process is summarized in the table Guidelines for Patient Management during Transfer from Dirty Room to Clean Room (Appendix 7).

Laboratory:

The dedicated SCDU laboratory is led by the Medical Director of the Emory Medical Laboratory, or his/her designee, with medical technologists (MT) on-call to perform specimen testing. Currently, a base of 6 MTs are on-call to process specimens and manage the laboratory analyzers. Three additional MTs have been trained and can enter the rotation as needed. One laboratory technologist is on-call 24 hours a day, 7 days a week. On-call shifts rotate every 4 hours during activation.

Due to the isolation of the laboratory from the rest of the SCDU manned areas, when an MT is in the SCDU laboratory, a secondary personnel from laboratory, nurses or physicians monitor the testing personnel periodically (minimum every 15 minutes) to ensure safety or other needs are met (e.g., help with trash, transport sample from anteroom to lab, provide needed supplies).

All lab tests for patients suspected or confirmed of EVD are handled in the SCDU dedicated laboratory. The SCDU laboratory personnel are trained on proper PPE procedures. See PPE matrix (Appendix 5).

Infection Control Practitioners:

When a patient is admitted to the SCDU, the designated SCDU Infectious Diseases physicians are present and actively manage procedures and practices for preventing the transmission of infectious pathogens. The Infection Control practitioner facilitates and coordinates interface with the State Department of Public Health. An Infection Control practitioner is available by pager 24 hours a day, 7 days a week.

Environmental Services and Facilities:

The Director of Environmental Services and the Director of Facilities are responsible for the waste stream and repairs in the SCDU.

The nursing team is responsible for all cleaning within the anteroom and patient rooms. Environmental Services is responsible for cleaning and disinfecting the hallways, surfaces, and other (unoccupied) patient rooms on the Unit. The Director of Environmental Services and dedicated staff receive PPE training and manage the waste stream from the isolation suite to the contracted medical waste company. This includes operation of the autoclave and supervision of all waste documentation (refer to Appendix 5).

All repair requests will be communicated directly to the health care system's Director of Facilities. Whenever possible, entrance into the patient room is avoided and nursing staff are guided in basic repair needs. If it becomes necessary to involve Facilities personnel in a task within the patient room, only dedicated staff who have received PPE training are allowed to enter the suite. They are subject to the same PPE levels and protocols as contained in the PPE Matrix and Standard Operating Procedures (Appendix 5 and Appendix 6).

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Upon discharge of the patient, the SCDU, any utilized medical equipment and patient personal items are decontaminated with the use of vaporized hydrogen peroxide. The Director of Environmental Services and the Director of Facilities are responsible for notifying the contractor that their services are needed and managing the decontamination. All reports documenting the decontamination of the SCDU by the contractor will be compiled by the Director of Environmental Services.

Ancillary Personnel:

The SCDU Coordinator is responsible for all administrative tasks associated with the SCDU. These tasks include the management of protocols, preparation of training materials, preparation of task orders, personnel scheduling, tracking expenditures, supply management, and any other logistical and administrative needs as they arise.

OPERATIONAL AND CARE DELIVERY PROTOCOLS

Training and Collaborative Practices

All staff assigned to direct patient care and waste management will be trained at least biannually on proper PPE practices and SCDU Standard Operating Procedures. Before activation, all staff are further refreshed on these standards and any additional skill sets as deemed necessary. All staff and physicians must pass competency training.

During periods of Unit activation, daily team meetings are held to discuss clinical updates and concerns. During these meetings, all working team nurses, physicians and support staff meet to review efficacy of protocols and discuss care issues.

Specialized Supplies

The Unit Director, or her/his designee, shall request carts of specialized supplies for the Unit from Materials Management. The carts are stocked and available at all times for Unit activation. A list of pertinent supplies is located in Appendix 3.

Protocols

All patients will have the following minimum orders as part of the admission protocol:

- Vital signs every 4 hours
- Daily weight
- Strict intake and output
- Nursing assessment each shift with particular attention to presence of rash; mental status; lung and heart assessment; and presence of nausea, vomiting or diarrhea
- Complete Blood Count (CBC), Comprehensive Metabolic Panel (CMP), and urinalysis, on the day of admission and every three days thereafter

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In addition, symptomatic patients will be cared for under EVD-specific protocols.

All patient items will be inventoried, entered into the patient chart, and kept in the patient room until discharge and decontamination with vaporized hydrogen peroxide. For valuable items, pictures can be taken to add to the detailed inventory. No items can leave the patient room until after a full decontamination.

Procedures

Whenever possible, procedures will be performed in the patient's room. In the event that patients in the Unit require additional testing, such as portable X-rays, ultrasound studies or placement of a central line with ultrasound guidance, the Unit has developed policies and procedures to perform these procedures in a manner that allows safe removal and decontamination of the equipment after the procedure is performed. In some cases, this involves enclosing the instrument in a plastic barrier. In other cases, this involves the use of treatment with vaporized hydrogen peroxide in an adjacent enclosure (see Appendix 4).

Patient Documentation

All patients will be admitted using the standard admission process for EUH, including, but not limited to, obtaining the standard consent for treatment and providing the patient with a Notice of Privacy Practices. All signed documents must remain in the patient room. However, copies are inserted into the patient chart by photographing the document through the patient door window.

After patient discharge, the original papers are disinfected with the room under vaporized hydrogen peroxide. Once complete, these records can then be added to the patient chart. The Infectious Diseases physician on-call will be responsible for dictating the patient discharge summary after the patient is discharged.

PROTOCOL FOR ACTIVATION OF THE SCDU

Scope/Procedure:

The SCDU follows a defined set of protocols for activation of the Unit. Because the SCDU must be prepared for a wide range of infectious agents, plans exist to respond as appropriate based on the agent and clinical presentation of the patient. Consideration must be given to appropriate safe transport into the Unit, as well as the safe delivery of care for patients while in the Unit.

Initial contact for clinical acceptance into the Unit is made to the attending on-call SCDU ID physician. The attending on-call SCDU ID physician determines the clinical appropriateness of the request for admission to the Unit and notifies the VP of Operations of acuity of the patient, the pathogen to which the patient has been potentially exposed or become infected with, the requested arrival time of the patient and the type of precautions required. The VP of Operations notifies the VP of Patient Care Services to verify operational and clinical readiness for activation of the Unit. The activation protocol then continues with notification of key stakeholders and departments accountable for responding to activation of the Unit.

1. The on-call SCDU Infectious Diseases (ID) physician will contact the following individuals when the Unit is activated:

EMS Communications Center: The on-call SCDU ID physician will notify the EMS Communications Center to alert and mobilize the transport team.

The SCDU Nursing Specialty Director: The on-call SCDU ID physician will inform the Nursing Specialty Director for the SCDU of the type of isolation precautions required for safe management of the patient, the level of acuity of the patient, the suspected pathogen to which the patient has been exposed or become infected with, and the probable arrival time of the patient.

Hospital Security: The on-call SCDU ID physician will inform security that a patient with a potentially serious communicable infection is being transported to the hospital. Security will be informed of the anticipated arrival time of the patient.

Laboratory Services: The on-call SCDU ID physician will notify the director of the SCDU laboratory that the Unit has been activated, the pathogen to which the patient has been potentially exposed or has become infected with, and the anticipated time of arrival of the patient.

Facilities/Maintenance: The on-call SCDU ID physician will notify facilities that the Unit is being activated. Facilities will, in turn, begin monitoring the air pressure in the patient rooms for compliance with Unit requirements.

Public Relations: The on-call SCDU ID physician will notify the Public Relations representative on-call that a patient is being admitted to the Unit, of the pathogen to which the patient has been potentially exposed or has become infected with, and the level of acuity of the patient. All patients admitted to SCDU will be placed on "No Information" status. To be placed on "No Information" status, the Emory University Hospital Admissions Office must be notified at the time that admission to the hospital is arranged. To respect the privacy of "No Information" patients, EUH's telecommunications operators will inform callers who request information on these patients, "I'm sorry, but I have no information on that person." The same information will be relayed to news media who call requesting an update or condition report.

Infection Control: The on-call SCDU ID physician will notify the Infection Preventionist (IP, Nurse) on-call that a patient is being admitted to the Unit, of the pathogen to which the patient has been potentially exposed or has become infected with, and of the level of acuity of the patient.

CEPAR: The on-call SCDU ID physician will notify the Office of Critical Event Preparedness and Response (CEPAR) to ensure coordination with Emory University, Emory Police Department, supporting law enforcement agencies and emergency management, as required for escort and reception of the patient to the unit. CEPAR will also serve to facilitate situational awareness for partners in the Clifton Corridor, should impact to their operations be anticipated.

2. The SCDU Nursing Specialty Director will contact the following individuals/departments:

On-call Nurse: The SCDU Nursing Specialty Director will notify the nurse on-call that the isolation unit is being activated.

Unit Director and Clinical Nurse Specialist: The SCDU Nursing Specialty Director will notify both the Unit Director and Clinical Nurse Specialist that a patient is being admitted to the Unit, the pathogen to which the patient has been potentially exposed or has become infected with, and the level of acuity of the patient. The Unit Director will work with the Nursing Administrator Supervisor to assist the SCDU staff in reallocation of patients in the SCDU to make available Unit bed(s) if the rooms in the Unit are occupied.

Materials Management: The SCDU Nursing Specialty Director will notify Materials Management that the Unit is being activated and the Unit's specialized supply cart needs to be delivered to the Unit for stocking. A list of specialized supplies is attached at the end of this manual.

Bed Placement and Admissions Departments: The SCDU Nursing Specialty Director

will inform the Bed Placement and Admissions departments that a patient is being admitted to the SCU. The Director will give the name of the patient, admitting diagnoses and attending physician. Admissions will also be informed that the patient is to be placed on “No Information” status.

Environmental Services Supervisor: The SCU Nursing Specialty Director will notify the Environmental Services supervisor or director that the Environmental Services individual assigned to the SCU must report to the SCU to decontaminate any surfaces potentially contaminated during the transport of the patient.

Occupational Injury Management Department: The SCU Nursing Specialty Director will notify Occupational Health of the need to begin symptom tracking of all Emory employees in charge of direct patient care. Appendix 1 and Appendix 2 detail the Occupational Health protocols.

3. The Infection Preventionist will contact the County Health Department.

PROTOCOL FOR BIOSAFETY TRANSPORT

PRINCIPLES OF CLINICAL OPERATIONS

There will be four levels of isolation precautions designated for the out-of-hospital transportation of patients. Due to the unique environment of a transport vehicle, these precautions differ from the precautions used once the patient is admitted to the Unit. Recommendations for level of precautions are provided in Appendix 8.

Level I: Standard Precautions

This level of protection is intended for transport of patients who are considered to represent a low risk of transmitting an infectious pathogen. This level is used when the potential exposure or symptomatic infection is with an infectious agent that has limited or no potential for person-to-person transmission, such as anthrax and botulism (Appendix 8).

Standard Precautions:

1. Hand hygiene after touching potentially contaminated materials, regardless of whether gloves were worn. Using soap and water, wash any skin area that has come into contact with blood or other potentially infectious material.
2. Wear gloves when touching potentially contaminated materials. Remove soiled gloves after a task is completed.

3. Wear mask and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and patient care activities that are likely to produce potentially infectious splashes or sprays.
4. Wear a gown to prevent soiling of clothing during procedures and patient care activities that are likely to produce infectious splashes or sprays.
5. Handle patient care equipment soiled with potentially infectious material in a manner that prevents secondary transmission.
6. Routinely perform environmental surface cleaning and disinfecting with an EPA-registered hospital disinfectant or a freshly prepared 1:100 dilution of household bleach. The disinfectant should preferentially be with an agent that has a label kill time of 1 minute or less for standard bacterial and viral pathogens.
7. Handle, process and transport used linen that has been soiled with potentially infectious materials in a manner that prevents secondary transmission.

Level II: Contact Precautions

This level of protection will be used in addition to Standard Precautions for transport of individuals who are known to be or suspected of being infected or colonized with a pathogen that can be transmitted by contact with skin or other contaminated surfaces. This level of precaution will be utilized in brucellosis and early stages of viral hemorrhagic fever infection (in the absence of vomiting; diarrhea; hemorrhage; or respiratory symptoms, such as cough or rhinitis). In most other instances, for patients infected with a viral hemorrhagic fever pathogen, Contact Precautions will be combined with Droplet Precautions, Airborne Precautions, or both.

Contact Precautions:

1. Standard precautions apply
2. Double gloving is required
3. Cover patient with an impervious sheet to avoid unnecessary physical contact (*see note)
4. Specialized footwear is required. The footwear will be capable of being disinfected or disposable. Footwear that is permeable, such as footwear made from canvas, will not be worn.
5. The patient will wear a biohazard coverall if tolerated and the patient is capable of assisting in putting the biohazard coverall on. If the biohazard coverall is not tolerated, or is likely to interfere with patient care activities or the patient cannot assist in putting it on, the patient will be wrapped in an impervious sheet or similar barrier to prevent environmental contamination.
6. Patient care equipment will be disinfected or properly disposed of after transport as specified below.

*Note: If a patient requiring Contact Precautions has a dermatologic condition, such as exfoliative dermatitis, that could potentially compromise the efficacy of an impervious sheet, and the patient is alert and can cooperate, the patient should be asked to don a biohazard coverall (see item 5 above).

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Level III: Contact and Droplet Precaution

This level of protection will be used in addition to Standard Precautions for care and transport of individuals who are known to be or suspected of being infected with a pathogen recognized to be transmitted by physical contact or by droplets generated during coughing, sneezing and talking, as well as during the performance of certain procedures, such as suctioning and bronchoscopy. Transmission occurs when droplets containing microorganisms generated from the infected person are propelled a short distance through the air and are deposited on the host's conjunctivae, nasal mucosa or mouth. This level of precautions will be utilized for caring for and transporting patients with pneumonic plague and symptomatic viral hemorrhagic fevers, such as advanced EVD infection, in the absence of respiratory symptoms.

Droplet and Contact Precautions:

1. Standard precautions apply
2. Double gloving is required
3. Biohazard coverall is required
4. Face shield or goggles and surgical mask or the equivalent are required.
5. Specialized footwear capable of being disinfected or disposed of is required. Footwear that is permeable, such as footwear made from canvas, will not be worn.
6. The patient will wear a surgical mask if tolerated.
7. Cover patient with an impervious sheet to avoid unnecessary physical contact (*see note).
8. The patient will wear a biohazard coverall if tolerated and the patient is capable of assisting in putting the biohazard coverall on. If the biohazard coverall is not tolerated, or is likely to interfere with patient care activities or the patient cannot assist in putting it on, the patient will be wrapped in an impervious sheet or similar barrier to prevent environmental contamination.
9. Patient care equipment will be disinfected or disposed of following transport as specified below.

*Note: If a patient requiring Contact Precautions has a dermatologic condition, such as exfoliative dermatitis, that could potentially compromise the efficacy of an impervious sheet, and the patient is alert and can cooperate, the patient should be asked to don a biohazard coverall (see item 8 above).

Level IV: Contact and Droplet and Airborne Precautions

This level of protection will be used in addition to Standard Precautions for transport of individuals who are known to be or suspected of being infected or colonized with a pathogen recognized to be transmitted by physical contact or by fine aerosols generated during coughing, sneezing and talking, as well as during the performance of certain procedures, such as suctioning and bronchoscopy, or by airborne droplet nuclei or dust particles. Airborne transmission occurs by dissemination of either airborne droplet nuclei (small particle residue [5-micron or smaller in size]) of evaporated droplets containing microorganisms that remain suspended in the air for long periods of time or dust particles containing the infectious agent. Microorganisms carried in this manner can be widely dispersed by air currents and may be inhaled by a susceptible host within the same room or over a longer distance from

the source patient depending on environmental factors. This level of precautions will be utilized for transporting patients with symptomatic smallpox, Severe Adult Respiratory Syndrome (SARS); severe viral hemorrhagic fevers, such as advanced EVD or Marburg virus infection with respiratory symptoms; newly-isolated influenza viruses of unknown virulence; as well as the transport of personnel with illnesses or respiratory symptoms due to an undetermined pathogen.

Airborne and Contact and Droplet Precautions:

1. Standard precautions apply
2. Double gloving is required
3. Biohazard coverall is required
4. Fitted N-95 respirator with face shield or butyl rubber hood assembly with Powered Air Purifying Respirator (PAPR) is required.
5. Specialized footwear capable of being disinfected or disposed of is required. Footwear that is permeable, such as footwear made from canvas, will not be worn.
6. The patient will wear a surgical mask if tolerated.
7. Cover patient with an impervious sheet to avoid unnecessary physical contact (*see note).
8. The patient will wear a biohazard coverall if tolerated and the patient is capable of assisting in putting the biohazard coverall on. If the biohazard coverall is not tolerated, or is likely to interfere with patient care activities or the patient cannot assist in putting it on, the patient will be wrapped in an impervious sheet or similar barrier to prevent environmental contamination.
9. Patient care equipment will be disinfected or properly disposed of after use as specified below.

*Note: If a patient requiring Contact Precautions has a dermatologic condition, such as exfoliative dermatitis, that could potentially compromise the efficacy of an impervious sheet, and the patient is alert and can cooperate, the patient should be asked to don a biohazard coverall (see item 8 above).

When in doubt, the highest level of precautions should be used.

PRINCIPLES OF PATIENT CARE

The standard patient care protocols will be in effect with the following caveats:

1. If the patient was exposed to an infectious agent, the transport crew will ensure that the patient was decontaminated at the site, and may request that the patient wear a biohazard coverall as noted in the specific levels of care above. If the patient cannot tolerate the biohazard coverall, or the coverall is likely to interfere with patient care activities, or the patient cannot assist in putting it on, the patient will be wrapped in an impervious sheet or similar barrier to prevent environmental contamination.
2. A temperature is to be recorded on all patients.
3. A detailed History of Present Illness (HPI) to include history of fever, cough, vomiting, diarrhea, hemorrhage, rash, malaise and duration of symptoms is to be obtained.
4. No IV is to be started on patients unless the patient is in emergent need of volume replacement or reasonably expected to require IV medication.

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5. No sharps are to be utilized in a moving vehicle.
6. Large volumes of bodily effluent are to be collected in leak proof containers that are either color coded as a biohazard or labeled with a biohazard sticker.
7. Any breach of infection control measures is to be reported immediately to the special operations supervisor and program medical director.
8. All transport personnel will comply with the surveillance policy as prescribed by EMS and the hospital infection control officer.
9. All medical control questions will be directly communicated with the program medical director, NOT the usual decentralized medical control system.

CONTAINMENT OF BIOHAZARDS AND DECONTAMINATION FOR EMS TRANSPORT

In addition to the precautions outlined above, to minimize exposure of the transport team, the following considerations will also be addressed:

1. Contaminated Bodily Fluids:

Despite biohazard coverall or impervious sheet and mask worn by a patient, when tolerated, to contain infectious bodily fluids, it is possible that patients with productive cough, severe vomiting, diarrhea or hemorrhage may contaminate the environment. EMS personnel will make every attempt to contain this contaminated material and treat it with an EPA-registered environmental disinfectant or a freshly prepared 1:100 bleach solution until more definitive disinfection and cleanup can occur. The disinfectant should preferentially have a 1 minute or less required contact time for standard bacteria and viruses.

2. Collection of Disposables:

In accordance with infection control policies, when a patient requiring Level II, Level III or Level IV precautions is cared for or transported, all disposable supplies will be collected in leak-proof biohazard bags or puncture proof, color-coded containers; properly labeled; and immediately collected for autoclaving, incineration or disposal with other infectious waste. All biohazard waste will be left in the care of the personnel at the SCDU.

3. Decontamination of Reusable Supplies:

In accordance with infection control policies, all supplies not deemed suitable for disposal will be properly labeled and immediately collected for disinfection or sterilization. All soiled equipment requiring decontamination and disinfection will remain in the care of the personnel at the SCDU.

4. Decontamination of EMS Transport Personnel:

If any surface of a personnel's protective equipment is soiled, it will be treated with an EPA-registered hospital disinfectant or a freshly prepared 1:100 dilution of household bleach. The disinfectant should

preferentially have a 1 minute or less required contact time for standard bacteria and viruses. The crew will then proceed to disinfect the transport vehicle's environmental surfaces with an EPA-registered hospital disinfectant or a freshly prepared 1:100 dilution of household bleach. Upon completion of proper disinfection of the transport vehicle, the team members will proceed to doff their protective equipment as prescribed. Disposable protective equipment will be managed as noted in No. 2: Collection of Disposables.

5. Transport of Patients to the SCDU:

Security will provide access to the area. The on-call Infectious Diseases physician will notify hospital administration and security of the need to clear the patient arrival area.

6. Decontamination and Disinfection of Ambulance:

Following the transport of the patient to the isolation unit, the ambulance will be taken to the area designated for ambulance decontamination at the hospital. If the patient required Level II, Level III or Level IV Precautions, all disposables will be placed in red biological contamination bags to be autoclaved, incinerated or disposed of with other hospital infectious regulated waste. Contamination bags are to be filled to, at most, half of their volume. If the patient is potentially infected with smallpox, the red biological contamination bags will, in turn, be placed in specially designated, clear plastic biohazard bags in such a way as to avoid contamination of the outside of the clear plastic bags. The clear plastic bags will then be processed in the isolation unit at the hospital. All surfaces will be decontaminated with an EPA-registered hospital disinfectant or a freshly prepared 1:100 dilution of household bleach in accordance with the manufacturer's recommendations. The disinfectant should preferentially have a 1 minute or less required contact time for standard bacteria and viruses.

Following decontamination of the ambulance, the ambulance crew will report to the Infectious Diseases physician on-call for the Unit that the ambulance has been decontaminated and disinfected in accordance with approved procedures.

Additional guidance for isolation precautions can be found in the Infection Control Policy section and the Guidelines for Patient Management during Transport to the Unit (Appendix 8).

INFECTION CONTROL POLICY

Role of Infection Preventionist (IP) Team and Emory University Environmental Health and Safety Office

The IP team is composed of hospital epidemiologists and infection prevention nurses and is responsible for managing the day-to-day infection control activities in the Unit through the following activities:

- Reviewing all new patients admitted to the Unit.
- Ensuring environmental rounds occur on a daily basis to verify appropriate infection control precautions have been implemented and are being followed.
- Providing initial notification to the county and state health departments.
- Assuring Personal Protective Equipment (PPE) Matrix is in place.
- Communicating information to physicians, staff and visitors, and briefing hospital administration.

This team is further supported by the Emory University Environmental Health and Safety Office. The Emory University Environmental Health and Safety Office is responsible for the oversight of the environmental health and safety programs.

Employee Health

- **Symptom Tracking:** All employees involved in direct or indirect patient care or waste management are also required to complete symptom surveys twice daily. Further information and forms for symptom tracking are located in Appendix 2.
- **Monitoring Exposure Incidents:** All employees with potential or definite exposure to a pathogen infecting a patient being cared for in the Unit will be immediately evaluated on the Unit by the on-call SCDU ID physician. Occupational Injury Management will be notified immediately and involved in the determination of appropriate next steps.
- **Monitoring for Acute Illness:** All employees who have recently cared for a patient in the Unit and experience symptoms of an acute infectious disease (e.g., fever, cough, new rash, nausea, vomiting, diarrhea, night sweats) will be immediately evaluated in the Occupational Injury Management Department during normal business hours or in the Emergency Department of the hospital after normal business hours and on weekends. The Occupational Injury Management Department Provider or ED provider evaluating the exposed individual must page the Infectious Diseases physician on-call for the Unit to discuss the exposure episode prior to deciding upon the appropriate course of action in managing the employee's illness.

Disease Reporting

Health care providers are required by law to report diseases and conditions identified in local and state health statutes and regulations. Under current regulations, any cluster of illnesses, anthrax, botulism or

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other potential bioterrorist diseases must be reported immediately. Infection Control personnel will notify the appropriate agencies and be available to assist with reporting requirements as needed.

Decontamination of Patients

It is necessary to manage individuals who arrive at the hospital in a consistent and safe manner if hospital staff have reason to believe that the incoming patient may represent a safety and health threat to hospital personnel. Decontamination, following a chemical or bioterrorist act, of exposed individuals prior to receiving them in the health care facility may be necessary to ensure the safety of patients and staff while providing care. Depending upon the agent, the likelihood of re-aerosolization, or risk associated with cutaneous exposure, removal of the exposed individual's outer clothing may be necessary. Decisions regarding the need for decontamination should be made in consultation with the on-call SCDU ID physician and the appropriate subject matter experts, if needed.

- It is anticipated that exposed individuals will be decontaminated at the site where they are exposed or at the hospital decontamination area, if necessary, prior to admission to the Unit. If it is determined that appropriate decontamination has not occurred, it must be performed as soon as possible after admitting the patient to the Unit. Individuals involved in assisting the patient in the decontamination process must wear PPE as per the PPE Matrix (Appendix 5).
- Remove contaminated clothing and store in a labeled, autoclavable biohazard plastic bag to prevent further environmental contamination.
- Minimal handling of clothing is mandatory to avoid further environmental contamination due to agitation.
- After removal of contaminated outer clothing, patients should be instructed (or assisted if necessary while assistant wears full PPE) to wash exposed skin surfaces with soap and water. For some exposures, a detergent solution may be more effective.
- Clean water, saline solution or commercial ophthalmic solutions are recommended for rinsing eyes.
- **Potentially harmful practices, such as bathing patients with bleach solutions, are unnecessary and should be avoided.**
- If indicated, after removal at the decontamination site, patient clothing should be handled only by personnel wearing appropriate personal protective equipment (to include impervious gowns; gloves; and either a surgical mask, an N95 respirator or PAPR, depending on the biological agent), and bagged to prevent further environmental contamination.

Cultures or other testing of the clothing may be necessary to define the nature of the exposure. If such testing is deemed unnecessary, the Infectious Diseases physician on-call should be consulted regarding the need to autoclave, disinfect or otherwise decontaminate the clothing prior to its release to the patient or family members.

Following decontamination of the patient, Environmental Services personnel will clean the area in

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accordance with the terminal cleaning procedure in the Environmental Services policy for this area.

Isolation Precautions

Many agents responsible for serious communicable diseases are not transmitted from person-to-person; re-aerosolization of these agents from infected patients is unlikely in the absence of gross external contamination, which should be addressed prior to admitting the patient to the Unit (see preceding section, **Decontamination of Patients**). All patients in the Unit, including symptomatic patients with serious communicable diseases (e.g., anthrax, brucellosis, botulism, Q fever and tularemia) should be managed utilizing **Standard Precautions**. For certain diseases or syndromes (e.g. smallpox, viral hemorrhagic fevers (VHF) and pneumonic plague), additional transmission-based precautions will be needed to reduce the likelihood of spread.

VISITORS

Decisions regarding visitors on the Unit will be made on an individual basis by the on-call SCDU ID physician in consultation with appropriate subject matter experts.

LINEN MANAGEMENT

Clean Linen Management

- Personnel are to wash hands prior to handling clean linen.
- Clean linen is delivered in a manner that minimizes microbial contamination from surface or airborne deposition, and soiled linen is collected in a manner that minimizes microbial dissemination into the environment.
- Linen handling, processing, transportation, storage, cleanliness and sanitation are performed to prevent and minimize potential nosocomial and occupational infection risks.
- Carts must be covered in transit and should remain at least partially covered (top and three sides) while stored on cart in unit.
- Clean linen is not to be handled nor transported simultaneously with soiled linen.
- Clean linen is removed from the cart as needed or may be stored at point-of-use locations if protected from being soiled while in holding.
- Clean linen that has fallen to the floor, become soiled or wet before use must be managed as soiled linen.

Soiled Linen Management

- Employees handling soiled linen are to use appropriate personal protective barriers and must wash hands with soap and water immediately before performing a cleaning task.
- All soiled linen is considered to be contaminated.
- Handle soiled linen with minimal agitation.

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- Soiled linen is to be placed in the plastic linen bags at the site of origin, being careful not to contaminate the outside of the bag. For patients who are felt to be infected with smallpox or VHF, all linen will be placed in biohazard, autoclavable bags.
- Bagged soiled linen bags are considered full when 3/4 full. See Waste Management Process from High-Containment Hospital Suite to Autoclave (Appendix 9) for step-by-step instructions.

EQUIPMENT

When possible, dedicate non-disposable patient care equipment for all patients cared for in the Unit.

Management of Contaminated Durable/Non Disposable Equipment (Infection Control database: VII Environmental)

All equipment contaminated with blood or other body fluids shall be decontaminated, if possible, or labeled as contaminated, prior to internal or external disposal/repair/maintenance release from the unit.

Blood or other body fluid contamination must be removed, or identified, prior to disposal/repair/maintenance activities to minimize environmental contamination and the risk of exposure to employees, servicing representatives and/or the manufacturer (See Appendix 10).

Procedure

1. Examine equipment for contamination prior to handling, servicing and shipping. It can be cleaned with hospital disinfectant cloths/wipes used for electrical equipment decontamination.
2. Decontaminate as necessary unless decontamination of equipment, or portions of such equipment, is not feasible (defer to infection control personnel and manufacturer recommendations for cleaning and sterilization).
 - a. When possible, soiled portions of equipment that do not require repair/maintenance are to be removed and retained in the Unit.
 - b. Pre-cleaning/decontamination of equipment can be accomplished with a variety of agents after removal of visible soil. Only EPA-registered agents approved by the Infection Control Committee will be used.
3. Tag equipment as contaminated, stating which portions remain contaminated, so that appropriate precautions can be taken by any employee, servicing representative and/or manufacturer's personnel.
 - a. The following criteria must be met for all tags used to label contaminated equipment:
 - i. Must be affixed by string, wire, adhesive or other method to prevent loss or unintentional removal.
 - ii. Will be red or red-orange and include the universal biohazard symbol in a contrasting color (*BIOHAZARD* lettering is optional).
 - iii. Contaminated equipment intended for disposal/repair/maintenance must be managed to contain any leakage during holding or transportation.

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Unit Infection Control Education

Designated SCDU personnel will receive orientation and ongoing annual education on infection control practices, SCD; delivering care within the SCDU; and policies procedures and protocols of the SCDU. Specific emphasis is placed on PPE donning and doffing protocols.

The primary focus of education is on biosafety for all individuals involved in the care of these patients, as well as on the broader safety of the community. Individuals who provide direct care or handle body fluids receive mandatory education. The training is followed by strict competency verification before staff are permitted to provide care for these patients. The care team must validate competency in the following areas:

- Donning and doffing of personal protective equipment (PPE).
- Waste management protocols.
- Decontamination and containment protocols.
- Specimen handling for diagnostic testing.

Effective and assertive communication is central to the safety of the team. Because communication is so important, the team uses rules to govern both direct patient care communication and daily team huddles. These are termed “family rules” and serve to enable the team to hold each other accountable for safe and effective practices. The team commits to the “family rules,” which include:

1. Follow all standard operating procedures to the best of their ability
2. Ensure that others follow the standard operating procedures
3. Report all accidents and/or near misses
4. Report any symptoms that match the pathogen
5. Report any new medical conditions

The family rules serve as a platform to empower all members of the team, regardless of role, to develop shared accountability for strict adherence to standard operating procedures (SOP).

Donning and doffing of PPE are critical points in maintaining staff safety. It is important that PPE be donned in a systematic, methodical method for complete and proper coverage. Similarly, PPE is doffed in a specific sequence requiring removal of PPE with the highest risk of contamination first. This process is consistent with CDC guidelines designed to minimize contamination and contain any potentially infectious materials. A member of the team is always designated to monitor and provide immediate feedback regarding any variations to the donning and doffing SOPs.

Staff are also trained to self-monitor and record twice daily temperatures for a period of 21 days after the last exposure to EVD.

Appendices

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Appendix 1: Occupational Injury Management EVD Protocol

EVD Response Plan: Protocol for employees providing direct patient care (including lab personnel and anyone managing the waste stream)

- All health care providers, including lab personnel and anyone managing the waste stream, are **required** to measure their temperature and complete the symptom questionnaire twice daily.
- If you have a fever of ≥ 37.8 degrees C, 100 degrees F.

OR

- If you have any of the following symptoms: chills, malaise, headache, joint/muscle aches, weakness, diarrhea, nausea/vomiting, stomach pain, or lack of appetite.
- Call the Occupational Injury Management Director or the Occupational Injury Management Clinical Lead for personal consultation/triage, prior to leaving the Unit.
- Complete an Employee Incident Report.
- If you are symptomatic, do not leave the Unit until consultation with Occupational Injury Management.
- If you are unable to work an assigned shift, you are required to notify the unit director of the Unit as well as Occupational Injury Management.

You are **required** to report any fever of ≥ 37.8 degrees C, 100 degrees F for any of the following symptoms (headache, joint/muscle aches, weakness, diarrhea, vomiting, stomach pain or lack of appetite) for 21 days from the last shift worked on the Unit.

Any health care provider (including lab and waste handlers) is required to monitor their temperature twice daily and monitor for any symptoms (listed above) on days not worked on the Unit. Report these symptoms immediately to Occupational Injury Management.

Compliance Statement

- Occupational Injury Management nurses will manage the symptom-monitoring data, and the Corporate Director of Occupational Injury Management will audit the data on a daily basis.

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- The Occupational Injury Management nurse will review data on a daily basis and make contact with any direct-care provider who does not have a temperature and symptom review documented two times in a day for 21 days from the last day worked on the unit.
- Once contact is made with noncompliant providers, the Occupational Injury Management nurse will review symptoms with the provider and log the results on their behalf.
- Executive leadership will be provided the names of any provider that has three instances of noncompliance.

Appendix 2: Direct Health Care Provider Symptom Questionnaire (EVD)

Direct Health Care Provider (including Lab Personnel and Anyone Managing the Waste Stream) Symptom Questionnaire (EVD)

Name _____

Employee ID # _____

Date _____ Time _____

Cell phone number (best contact #) _____

	_____	degrees C/F	If yes, onset and duration
1) Temperature:	_____	_____	_____
2) Nausea/Vomiting:	N _____ Y _____	_____	_____
3) Diarrhea:	N _____ Y _____	_____	_____
4) Headache:	N _____ Y _____	_____	_____
5) Joint or Muscle Aches, or both	N _____ Y _____	_____	_____
6) Stomach Pain:	N _____ Y _____	_____	_____
7) Lack of Appetite:	N _____ Y _____	_____	_____
8) Weakness:	N _____ Y _____	_____	_____

- All health care providers providing direct patient care (including lab personnel and anyone managing the waste stream) are **required** to complete this form at the beginning and at the end of their shift.
- If you have a fever of ≥ 37.8 degrees C, 100 degrees F, or any of the symptoms listed above, please call the Occupational Injury Management Director or the Occupational Injury Clinical Lead NP for personal consultation, prior to leaving the Unit.
- Complete an Employee Incident Report.
- Refrain from leaving the Unit until consultation with Occupational Injury Management.
- If you are unable to work an assigned shift, you are required to notify the Unit director of the SCDU as well as Occupational Injury Management.
- You are required to report any fever of ≥ 37.8 degrees C, 100 degrees F or any of the following symptoms (chills, malaise, headache, joint/muscle aches, weakness, diarrhea, nausea/vomiting, stomach pain or lack of appetite) for 21 days from the last shift worked on the Unit.
- Any health care provider (including lab and anyone managing the waste stream) are required to monitor their temperature twice daily and monitor for any symptoms (listed above) on days not worked on the Unit. Report these symptoms immediately to Occupational Injury Management.

Signature: _____

Compliance Statement

Occupational Injury Management nurses will manage the symptom-monitoring data, and the Corporate Director of Occupational Injury Management will audit the data on a daily basis. The Occupational Injury Management nurse will review data on a daily basis and make contact with any direct-care provider who does not have a temperature and symptom review documented two times in a day for 21 days from the last day worked on the unit. Once contact is made with noncompliant providers, the Occupational Injury Management nurse will review symptoms with the provider and log the results on their behalf. Executive leadership will be provided the names of any provider that has three instances of noncompliance.

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Appendix 3: PPE and Cleaning Supply List

High Level PPE	Step Down PPE	Cleaning Supplies
Item Description	Item Description	Item Description
HOOD MEDICAL FILTER DISP	GOWN BIOHAZARD PE COATED	DISINFECTING DETERGENT 4X 1GAL
BAG AUTOCLAVE BIOHAZ ORANGE 38X47	GOWN DISP IMP YELLOW FULL COV	SANI-CLOTH AF3
CLOSURE ELASTIC AUTOCLAVE BAG	GOWN SURGICAL XL ASTOUND W/TOWEL	SANI-CLOTH XLG 8X14 PURPLE TOP
COVERALL APT WHITE MD	MASK FLUIDSHIELD	BLEACH WIPES
COVERALL APT WHITE LG	BAG AUTOCLAVE BIOHAZ ORANGE 38X47	SANITIZER HAND FOAM 535ML PURELL
COVERALL APT WHITE XL	CLOSURE ELASTIC AUTOCLAVE BAG	ABSORBENT 21GR
COVERALL APT WHITE 2XL	COVER BOOT PROSHIELD	UNDERPAD XSTRENGTH 30X36
COVERALL APT WHITE 3XL	GLOVE NITRILE CHEMO EXT CUFF SM	
APRON PLASTIC DISP 30 X 44IN	GLOVE NITRILE CHEMO EXT CUFF MD	
SCRUB PANTS MED DISP	GLOVE NITRILE CHEMO EXT CUFF LG	
SCRUB PANTS LG DISP	GLOVE NITRILE CHEMO EXT CUFF XL	
SCRUB PANTS XLG DISP	GLOVE EXAM NITRILE CHEMO BLUE XLG	
SCRUB PANTS 2XL DISP	GLOVE EXAM NITRILE ETS PF XL	
SCRUB PANTS 3XL DISPOSABLE		
SCRUB SHIRT MED DISP		
SCRUB SHIRT LG DISP		
SCRUB SHIRT XLG DISP		
SCRUB SHIRT 2XL DISP		
SCRUB SHIRT 3XL DISPOSABLE		
SANITARY MESH BRIEF		
SANITARY MESH BRIEF XXL PK/2		
COVER BOOT PROSHIELD		
GLOVE NITRILE CHEMO EXT CUFF SM		
GLOVE NITRILE CHEMO EXT CUFF MD		
GLOVE NITRILE CHEMO EXT CUFF LG		
GLOVE NITRILE CHEMO EXT CUFF XL		
GLOVE EXAM NITRILE CHEMO BLUE XLG		
GLOVE EXAM NITRILE ETS PF XL		
TAPE MASKING 2IN		
SLIPPER TERRY TREAD XXLG		

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Appendix 4: Portable X-ray Process for the SCDU

X-ray Process

1. Patient's bed will be positioned in front of the door, looking out while avoiding the clean box area. Sanitize gloves.
2. Prior to entering the patient's room, the X-ray plate will be bagged and securely taped, then placed in an additional clear bag that is NOT taped.
3. Patient's nurse will position the covered X-ray plate with direction from the X-ray technologist in the anteroom; sanitize gloves.
4. Patient's nurse will don lead apron located in the patient's restroom (where it is stored and not to leave the patient room).
5. Once the X-ray has been completed, the nurse will doff the apron and put aside to clean, sanitize gloves, and assist the anteroom nurse with closing the patient's door (if help is needed).
6. Patient's nurse will remove X-ray plate from behind the patient.
7. Patient's nurse will clean the outside bag covering the X-ray plate.
8. Patient's nurse will then walk to the line of the clean box and hold the outside bag to allow the anteroom nurse to remove the X-ray plate from the bag; do not discard outer bag until X-ray has been confirmed. Sanitize gloves.
9. After the X-ray has been confirmed, the patient's nurse will return bed to the original position and monitor the patient for tolerance of the procedure.
10. Sanitize gloves and mop floors, clean apron, store apron in the bathroom, then sanitize gloves.

In the Anteroom:

1. The anteroom nurse will place the donning and helmet carts into the second (unused) patient room or other designated area. Equipment in the anteroom should be moved to allow space for the X-ray machine.
2. The X-ray technologist will don an impervious gown and gloves and move X-ray machine into the anteroom after the arm is covered in plastic wrap. The bagged X-ray plate will be given to the anteroom nurse to give to patient's nurse for positioning behind patient.
3. Once the X-ray plate and machine are positioned, the team should be prepared to take the X-ray. Patient's nurse should be in apron and the anteroom nurse (and physician, if applicable) should move to an adjacent empty patient room immediately after the patient room's door is opened, using door stop by the anteroom nurse.
4. Immediately after the X-ray, the X-ray technologist should alert the anteroom nurse who removes the door stop with assistance from the patient's nurse, if needed. The doorstop should remain in the patient's room if it has touched beyond the clean box in the patient's room.

5. The patient's nurse will hold bag covering X-ray plate while the anteroom nurse holds open and removes the plate.
6. The anteroom nurse will clean the inner bag covering the plate then remove the tape and bag and clean the plate. The plate should be handed to X-ray technologist for additional cleaning while the person in the anteroom sanitizes his/her gloves. The plate is then given to the X-ray supervisor, donned with gloves, to process plate.
7. Once the X-ray is confirmed, the anteroom nurse and X-ray technologist will remove the plastic wrap covering the machine arm, and clean the machine.
8. The X-ray technologist and anteroom nurse will sanitize gloves. The X-ray technologist will doff gown and gloves, sanitize hands, and then don new gloves and move machine out of the anteroom while the anteroom nurse holds the anteroom door open.
9. The anteroom nurse will then replace equipment and set up the anteroom.

Outside the anteroom:

1. The resource nurse will lay 2 heavy-duty chuck pads on the floor immediately outside anteroom, toward lab and autoclave.
2. The resource nurse will obtain 600 mL of water then don gloves and add 300 mL of the disinfectant.
3. The resource nurse will gently pour the mixture onto the chuck pads, creating a large chemical mat*. Repeat if necessary.
4. The resource nurse will lay a third chuck pad. This allows the wheels to roll over the cleaner, then dry off on the last chuck pad.
5. Once the X-ray is complete, the X-ray supervisor will don gloves and obtain X-ray plate for processing. Once confirmed, the person in the anteroom can begin cleaning X-ray machine.
6. Once the machine is cleaned, it will be rolled onto the chemical mats* just outside the anteroom where it will be cleaned again by the resource nurse and X-ray staff.
7. The X-ray technologist will sanitize gloves, then roll machine over dry chuck pad to park machine in hall outside lab. Doff gloves and sanitize hands.
8. The resource nurse will discard chuck pads, doff gloves, and then sanitize hands.

Durable equipment that enters the patient room (including ECG, ventilator, etc.) must be decontaminated per the protocol in Appendix 10.

****Note: Quaternary Ammonium Compound Mat Procedure***

1. Mats will be changed every day at the beginning of the morning by the 7A-7P nurse.
2. To change, remove tape and discard both tape and mat in the trash.
3. Replace mat with the new fabric chuck pad and tape down with 2-inch silk tape.

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4. *Mix 200mL of the quaternary ammonium compound with 400 mL of water and pour on the mat.*
5. *The non-diluted compound can cause the floor to become sticky; if this occurs, use water to dilute the solution on the floor and mop until the floor is no longer sticky.*
6. *Dilute spills of the compound with water as soon as possible, as the quaternary ammonium compound will erode the floors.*

Appendix 5: PPE Guidance Matrix for EVD

	Staff outside patient room (nurse station/resource nurse)	Staff assisting with waste management (SCDU Only)	EVS staff managing waste	Anteroom staff/Buddy	Patient room staff (RN/MD/NT/Phlebotomist)	EVD Diagnostic Lab Staff (SCDU Only)
Suspected— asymptomatic	Standard precautions	Standard precautions	Standard precautions	Standard precautions	<ul style="list-style-type: none"> • Impervious gown • Booties • Surgical mask • Double gloves 	<ul style="list-style-type: none"> • Coverall • Double gloves • Booties • PAPR Hood
Suspected— symptomatic (SCDU staff will handle the waste stream and room decontamination)	Standard precautions	<ul style="list-style-type: none"> • Impervious gown • Booties • Surgical mask • Face shield (goggles if face shield is not available) • Double gloves 	<ul style="list-style-type: none"> • Coverall • Apron • Surgical mask • Face shield (goggles if face shield is not available) • Double gloves 	n/a	<ul style="list-style-type: none"> • Impervious gown • Impervious hair cover • Booties • Surgical mask • Face shield (goggles if face shield is not available) • Double gloves <p>*See Reference below</p>	<ul style="list-style-type: none"> • Coverall • Double gloves • Booties • PAPR Hood
Positive— asymptomatic (SCDU staff will handle the waste stream and room decontamination)	Standard precautions	<ul style="list-style-type: none"> • Coverall • Apron • Surgical mask • Face shield (goggles if face shield is not available) • Double gloves 	<ul style="list-style-type: none"> • Coverall • Apron • Surgical mask • Face shield (goggles if face shield is not available) • Double gloves 	<ul style="list-style-type: none"> • Coverall • Apron • Booties • Double gloves • Face shield (goggles if face shield is not available) 	<ul style="list-style-type: none"> • Coverall • Apron • Booties • Double gloves • Face shield (goggles if face shield is not available) • Surgical mask 	<ul style="list-style-type: none"> • Coverall • Double gloves • Booties • PAPR Hood

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<p>Positive— symptomatic <i>(SCDU staff will handle the waste stream and room decontamination)</i></p>	<p>Standard precautions</p>	<ul style="list-style-type: none"> • Coverall • Apron • Surgical mask • Face shield (goggles if face shield is not available) • Double gloves 	<ul style="list-style-type: none"> • Coverall • Apron • Surgical mask • Face shield (goggles if face shield is not available) • Double gloves 	<ul style="list-style-type: none"> • Coverall • Double gloves • Booties • For waste management—apron and PAPR Hood 	<ul style="list-style-type: none"> • Coverall • Double gloves • Booties • Apron • PAPR Hood 	<ul style="list-style-type: none"> • Coverall • Double gloves • Booties • Apron • PAPR Hood
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* PPE for unstable, high-risk patient in ED/Labor and Delivery/High-risk outpatient setting described in pending appendix.

Appendix 6: Standard Operating Procedures: Serious Communicable Diseases Unit

Emory University & Emory University Hospital

SCDU PPE: Donning and Doffing Protocols

Entering the SCDU

1. Complete Check-in Form (temperature).
2. Sign in outside anteroom.
3. Check gauges.
4. Check signs.
5. Enter anteroom.

Donning SCDU PPE for Anteroom (not immediately entering patient room)

1. Enter locker room.
2. Remove jewelry (preferably leave jewelry at home).
3. Remove clothing and shoes and place in locker.
4. Don disposable scrubs, socks and shoes dedicated to unit.
5. Enter anteroom.
6. Don belt and battery.
7. Check motor.
8. Put motor in the PAPR Hood and set aside.
9. Don biohazard coverall.
10. Don inner gloves and tape to biohazard coverall.
11. Don outer gloves.
12. Don booties.
13. Sanitize gloves.
14. Put apron aside.

Donning SCDU PPE for Patient Room

1. After entering anteroom:
2. Enter Locker Room.
3. Remove jewelry.
4. Remove clothing and shoes and place in locker.
5. Don disposable scrubs, socks and shoes dedicated to unit
6. Re-enter anteroom.
7. Don belt and battery.
8. Check motor.
9. Put motor in the PAPR Hood and set aside.
10. Don biohazard coverall.
11. Don inner gloves and tape to biohazard.
12. Don outer gloves.

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13. Don booties.
14. Sanitize gloves.
15. Plug in PAPR Hood, put on apron and PAPR Hood.
16. Zip up and tie up PAPR Hood and apron.
17. Check gauges and signs.
18. Enter patient's room.

Doffing SCDU PPE for Patient Room

1. Ensure qualified individual is in place to monitor doffing protocol.
2. Remove apron.
3. Remove one bootie, then step onto chemical mat*; repeat with second bootie.
4. Sanitize gloves.
5. Remove outer gloves (beaking method).
6. Sanitize inner gloves.
7. Remove tape.
8. Sanitize inner gloves.
9. Remove biohazard coverall.
10. Sanitize inner gloves.
11. Enter anteroom (*anteroom staff should be donned in face shield*).
12. Remove PAPR Hood.
13. Sanitize inner gloves.
14. Remove inner gloves (beaking method).
15. Wash hands with soap and water.
16. Remove belt, battery and motor.
17. Enter locker room.
18. Remove and dispose of disposable scrubs and socks.
19. Shower for 5 minutes, shampooing hair.
20. Don clothes.
21. Enter anteroom.
22. Exit anteroom.

“Step Down” PPE Donning

1. Change into hospital scrubs.
2. Remove jewelry.
3. Enter clean corridor.
4. Don inner gloves.
5. Don impervious gown.
6. Don outer gloves.
7. Don booties.
8. Sanitize gloves.
9. Check gauges and signs.
10. Enter anteroom.
11. Sanitize gloves.
12. Don face shield.

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13. Enter patient room.

“Step Down” PPE Doffing

1. Remove booties (stepping on mat*).
2. Sanitize gloves.
3. Remove outer gloves.
4. Sanitize gloves.
5. Remove gown.
6. Sanitize gloves.
7. Remove face shield.
8. Sanitize gloves.
9. Enter anteroom.
10. Remove gloves.
11. Wash hands thoroughly.
12. Enter clean corridor.
13. Change out of hospital scrubs

High-Level PPE: Donning and Doffing Protocols

Donning High-Level PPE for Patient Room

1. Remove jewelry.
2. Don inner gloves.
3. Don impervious gown.
4. Don outer gloves.
5. Don booties.
6. Sanitize gloves.
7. Don face shield.
8. Don impervious hair cover.
9. Enter patient room.

Doffing High-Level PPE for Patient Room

1. Ensure qualified individual is in place to monitor doffing protocol.
2. Remove booties (stepping on mat*).
3. Sanitize gloves.
4. Remove outer gloves.
5. Sanitize gloves.
6. Remove gown.
7. Sanitize gloves.
8. Remove hair cover.
9. Sanitize gloves.
10. Remove face shield.
11. Sanitize gloves.
12. Enter anteroom.

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13. Remove inner gloves.
14. Wash hands with soap and water.
15. Enter clean corridor.
16. Change out of hospital scrubs.

Waste Management Protocols

Waste Management for Anteroom

1. Plug in, put on apron and PAPR Hood, zip up and tie up apron and PAPR Hood.
2. Remove red biological bag from waste container after adding 300mL of water.
3. Goose neck and tape loosely to secure bag.
4. Disinfect (wipe) the outside of the bag.
5. Place bag into red biological bag.
6. Goose neck and tape loosely to secure bag.
7. Disinfect (wipe) the outside of the bag.
8. Place bag into autoclave bag.
9. Use rubber band to secure autoclave bag.
10. Disinfect (wipe) the outside of the bag
11. Sanitize gloves.
12. Place in waste container outside anteroom.
13. Sanitize gloves.
14. Mop floor.
15. Sanitize gloves.
16. Remove apron then PAPR Hood.
17. Remove outer gloves.
18. Sanitize inner gloves.
19. Don new outer gloves.
20. Remove PAPR and put aside.
21. At end of shift, discard PAPR hood; disinfect motor and store.

Waste Management for Patient Room

1. Add 300 mL of water and remove red biological bag from waste container.
2. Goose neck and tape loosely to secure bag.
3. Disinfect (wipe) the outside of the bag.
4. Place bag into red biological bag.
5. Goose neck and tape loosely to secure bag.
6. Disinfect (wipe) the outside of the bag.
7. Store in shower (patient room) until removal to anteroom.
8. Sanitize gloves.

End of Shift Waste Management

1. Place waste into autoclave bag.

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2. Bring waste into anteroom.
3. Use rubber band to secure autoclave bag.
4. Disinfect (wipe) the outside of the bag.
5. Sanitize gloves.
6. Place in waste container outside anteroom.
7. Sanitize gloves.
8. Mop floor.

Spill Cleanup

1. Alert team.
2. Assist patient.
3. Establish a spill parameter.
4. Visual check of PPE and clean any visible contamination
5. Pour disinfectant on clean towel to establish chemical mat* near spill.
6. Remove one bootie, then step onto newly created chemical mat*; repeat with second bootie.
7. Sanitize gloves.
8. Remove outer gloves.
9. Sanitize gloves.
10. Don outer gloves, then booties.
11. Sanitize gloves.
12. Soak clean towel in disinfectant.
13. Cover spill outside-in with bathroom towel.
14. Allow for appropriate contact time (10 minutes).
15. Clean up spill from outside-in.
16. Sanitize gloves.
17. Remove outer gloves.
18. Don new outer gloves.
19. Mop area, placing wipes in red bag.
20. Sanitize gloves.
21. Remove one bootie, then step onto newly created chemical mat*; repeat with second bootie.
22. Sanitize gloves.
23. Remove outer gloves.
24. Don outer gloves then booties
25. Follow Waste Management for Patient Room protocol.

Additional Protocols

Opening Doors and Changing Gloves

Prior to Opening Any Door:

1. Sanitize gloves.

Changing Gloves:

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1. Sanitize gloves.
2. Remove outer gloves (beaking method).
3. Sanitize inner gloves.
4. Don outer gloves.

Needle Stick or Cut

1. Quickly sanitize gloves.
2. Remove inner and outer gloves and expose wound.
3. Express wound.
4. Flush wound with water for five minutes.
5. Cover wound by donning glove.
6. Doff per patient room SOP.
7. Report for medical assessment.
8. Log and report incident and notify occupational injury management.

Prior to Shift Change:

1. Empty all waste (using appropriate waste management SOP).
2. Mop complete area (including patient room, bathroom where waste was stored, anteroom and shower room).
3. Wipe down motor cords with disinfectant wipes.
4. Restock items needed for next shift (PPE, patient care items, etc.).

Lab Draw from Patient Room to SCDU Lab

Leaving SCDU Patient Room:

1. Sanitize gloves.
2. Clean specimen tube with bleach wipe.
3. Verify label using two identifiers
4. Apply label to specimen tube and include date and time.
5. Place tube in small biohazard bag.
6. Clean outside of bag with bleach wipe.
7. Place bag inside second biohazard bag.
8. Clean outside of second bag with bleach wipe.

Entering Anteroom:

1. Open patient's room door.
2. Open biohazard container to allow patient's nurse to place biohazard bag in biohazard container.
3. Close patient's room door.
4. Sanitize gloves.
5. Clean outside of biohazard container with bleach wipe.

Anteroom to SCDU Lab:

1. Anteroom nurse hands off biohazard container to SCDU lab personnel.
2. Lab personnel delivers biohazard container to SCDU lab within the Unit.
3. SCDU lab personnel in appropriate PPE retrieves tube from biohazard container from bucket.

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4. The biohazard container is transported back to the anteroom where the anteroom nurse will clean container with bleach wipes.
5. Sanitize gloves.

****Note: Quaternary Ammonium Compound Mat Procedure***

1. *Mats will be changed every day at the beginning of the morning by the 7A-7P nurse.*
2. *To change, remove tape and discard both tape and mat in the trash.*
3. *Replace mat with the new fabric chuck pad and tape down with 2-inch silk tape.*
4. *Mix 200mL of the quaternary ammonium compound with 400 mL of water and pour on the mat.*
5. *The non-diluted compound can cause the floor to become sticky; if this occurs, use water to dilute the solution on the floor and mop until the floor is no longer sticky.*
6. *Dilute spills of the compound with water as soon as possible, as the quaternary ammonium compound will erode the floors.*

Appendix 7: Guidelines for Patient Management During Transfer from Dirty Room to Clean Room

Guidelines for patients who are ambulatory:

1. Clean bathroom, including shower, toilet, sink and floors.
2. Have patient shower from head to toe.
3. While the patient is showering, clean floors in the bathroom, patient's room and anteroom with appropriate disinfectant (disinfectant wipes in patient's room and the anteroom and bleach wipes in the bathroom).
4. The nurse in the room is to create a clean pathway from the shower to the anteroom door using disposable pads, while the nurse in the anteroom is to create a clean path from the door of the patient's room to the corridor/hall.
5. Anteroom nurse and family should change into standard precaution attire (gown and single glove), unless otherwise specified.
6. Have patient dry off and dress in disposable scrubs, underwear and socks.
7. Have patient walk on clean path from shower area to clean room, leaving everything behind. Personal property must be decontaminated using vaporized hydrogen peroxide (VHP) before they can be returned to patient. If using a walker to walk to room, obtain a new walker and have it sitting outside of anteroom. Do not use walker from room.

Guidelines for patients who are non-ambulatory:

1. Clean room and bed using appropriate disinfectant (bleach, disinfectant wipes or both).
2. Bathe patient from head to toe and change the sheets (two nurses in the room to assist with AM care).
3. While the patient is being bathed, the anteroom nurse is to clean floors in the anteroom with the appropriate disinfectant; clean the stretcher chair and cover with disposable pads to be sure the bed and the stretcher chair do not touch during transfer, create a clean path from the patient's room door to the corridor/hall with disposable chuck pad with disinfectant (ratio of 200 mL of disinfectant and 400 mL of water).
4. The nurses in the patient room should create a clean path to roll the stretcher chair in and out of the room from the patient's bed to the anteroom door using disposable pads with disinfectant (ratio of 200 mL of disinfectant and 400 mL of water).
5. Anteroom nurse and family should change into standard precaution attire (gown and single glove), unless otherwise specified.
6. The anteroom nurse will then roll the stretcher chair into the room and the two nurses at bedside will transfer the patient on to the stretcher chair, cover patient with sheet, and roll over the chemical mats* to the corridor/hall to the new room.

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7. Wipe down the stretcher chair with disinfectant wipes before entering the new room and transferring patient to new bed.
8. Transfer patient to clean bed.
9. Clean stretcher chair with bleach wipes or disinfectant wipes.

Appendix 8: Guidelines for Patient Management During Transport to the Unit

All recent exposures (i.e., less than one incubation period for the infectious pathogen) will be managed with Standard Precautions; for patients with more distant potential exposure, the following precautions will be used in addition to Standard Precautions (see text for specific measures included in each form of precautions):

- Anthrax: Standard Precautions, regardless of stage of illness
- Botulism: Standard Precautions
- Brucellosis: Contact Precautions
- Cholera: Standard Precautions
- Glanders: Airborne Precautions
- Plague:
 - Bubonic: Standard Precautions
 - Pneumonic: Droplet Precautions
- Q fever: Standard Precautions
- Smallpox: Contact Precautions plus Droplet Precautions plus Airborne Precautions
- Severe Acute Respiratory Syndrome (SARS): Contact Precautions plus Droplet Precautions plus Airborne Precautions
- Tularemia: Standard Precautions
- Unknown pathogen: Contact Precautions plus Droplet Precautions plus Airborne Precautions
- Viral Hemorrhagic Fever:
 - Early: Standard Precautions
 - Symptomatic but No Possible Aerosolization of Body Fluids: Contact Precautions plus Droplet Precautions
 - Possible Aerosolization of Body Fluids: Contact Precautions plus Droplet Precautions plus Airborne Precautions

Note: Standard Precautions: Standard Precautions prevent direct contact with all body fluids (including blood), secretions, excretions, non-intact skin (including rashes), and mucous membranes. Standard Precautions routinely practiced by health care providers include: hand washing, gloves when contact with above, mask/eye protection/face shield while performing procedures that cause splash/spray, and gowns to protect skin and clothing during procedures that may involve splashing/spraying.

Appendix 9: Waste Management Process from High Containment Hospital Suite to Autoclave

PURPOSE

To establish a process for the proper sterilization and safe disposal of biohazard waste

IN PATIENT ROOM:

- Waste should be collected in red biohazard waste bag. The bag should not be more than HALF FULL.
- When ready to remove from room, add 200 mL-300 mL of water inside the bag.
- Goose neck and tape loosely to secure bag.
- Wipe the bag down completely with bleach wipes. (**DO NOT SPRAY!**) Place the bag into another red biohazard waste bag.
- Goose neck and tape loosely to secure bag.
- Wipe the second bag with bleach wipes. (**DO NOT SPRAY!**)
- Take the bag into the anteroom.

IN THE ANTEROOM:

- Place the bag into an autoclave bag and apply blue rubber band (do not tighten the band).
- Wipe down the bag completely with bleach wipes.
- Place the bag in roller drum located outside of the main door.
- Roller drum should be transported to the staging room or the autoclave room as appropriate.
- A new empty roller drum will be available for waste placement.

AUTOCLAVING:

- Place bags on the rack for loading bags into the autoclave.
- Once bags are loaded, pull the rack.
- Place 3M ATTEST test pack into autoclave. The label side should be faced up.
- The chemical indicator on the top of the label should be yellow in color.
- Autoclave on the GRAVITY setting (1 hour).



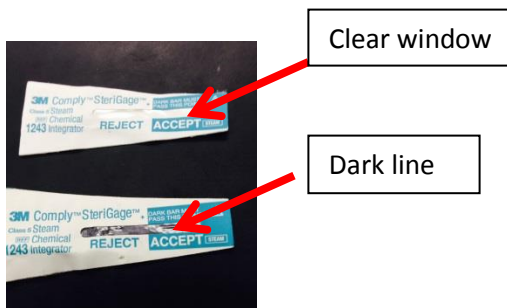
POST AUTOCLAVE:

- Once autoclave cycle is complete and has cooled, gently and slowly open the door wearing heat-resistant gloves, in addition to disposable PPE requirement-biohazard coverall, booties and face shield.
- Insert the rack into the autoclave and gently pull out.
- Remove the autoclaved bags and place into the clean drum with lid and store in staging room.

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VALIDATION OF AUTOCLAVE CYCLE:

- Once the 3M pack is cooled, place the pack on a flat surface.
- The chemical indicator circle on top of pack should be brown in color (turned brown from yellow).
- Gently open the pack. You will find a chemical integrator (a small arrow shaped paper pack).
- An unused chemical integrator pack will have a clear window.



- The chemical integrator line (dark bar) should have moved to “accept” window. **If it is still in the “reject” window, the entire pack should be discarded and the load has to be re-autoclaved.**
- The biological indicator has a brown cap and a spring on the vial. On the vial, a rose line will be seen.
- The rose line should be brown in color (if autoclave cycle worked right).
- Remove the spring.
- Using a pen/marker, write the autoclaved date on the vial.
- Press the brown cap and close the vial.
- Place the biological indicator vial into the crush well; move the tube right to left or left to right.
- Now you have crushed the vial.
- Remove the crushed vial and place in the well-marked as #1.
- Place the test control vial in the well-marked #12
- Close the lid and press start. Timer should show 3 hours.
- The #1 well should have yellow light lit up showing that incubation is in progress.
- After 3 hours, and when cycle is complete, the test control vial indicator should show + sign (positive) and red color is lit up.
- The #1 well should show –sign (negative) and green light will be lit up.

NOTE:

- **The batch number on the test vial and the biological indicator should be the same.**
- **RED** means the test bacteria were not killed.
- **Green** means everything was killed; the material inside the autoclave bags has been sterilized and is safe for packing before disposal.
- **The used vials can now be disposed.**

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TRANSPORT:

- Autoclaved bags will be packed in provided cardboard boxes and secured with tape.
- Boxes will be loaded into an approved vehicle at a designated loading dock.
- Signed manifest with details will be handed over to the responsible party.
- A copy of signed manifest by both parties will be filed at the hospital and the contractor.

Appendix 10: Management of Contaminated Durable/Non Disposable Equipment

1. In the patient room, the patient's nurse should cleanse the contaminated equipment with disinfectant designated by the hospital.
2. Both the patient room nurse and the anteroom nurse are to create disinfectant mats* with disposable pads and the disinfectant (200 mL of the solution to 400 mL of water) from the patient's doorway to the storage destination.
3. The room nurse will then roll/hand off the unofficial cleaned equipment to the anteroom nurse, where he/she will clean equipment again with disinfectant while in full PPE similar to Waste Management.
4. Cover equipment with plastic bag and label as dirty so that it will be further decontaminated with vaporized hydrogen peroxide.
5. Roll/hand off equipment to resource nurse outside of anteroom and store in designated dirty storage area. The resource nurse outside the room should wear gown, gloves, booties and mask with face shield.
6. The resource nurse outside of the room doffs PPE per SOP protocol. Anteroom nurse removes PAPR Hood and sets aside.

****Note: Quaternary Ammonium Compound Mat Procedure***

1. *Mats will be changed every day at the beginning of the morning by the 7A-7P nurse.*
2. *To change, remove tape and discard both tape and mat in the trash.*
3. *Replace mat with the new fabric chuck pad and tape down with 2-inch silk tape.*
4. *Mix 200mL of the quaternary ammonium compound with 400 mL of water and pour on the mat.*
5. *The non-diluted compound can cause the floor to become sticky; if this occurs, use water to dilute the solution on the floor and mop until the floor is no longer sticky.*
6. *Dilute spills of the compound with water as soon as possible, as the quaternary ammonium compound will erode the floors.*

Support Documents

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Support Document 1: Questions to Ask All Patients at Triage

Updated 10/17/2014 3:13 PM

Questions to ask ALL patients at Point of First Interaction (Before Making Any Patient Contact)

1. Any recent travel of Patient within 21 days to Liberia, Sierra Leone, Guinea?

If no, proceed to question 2.

If yes, proceed to question 3.

2. Any contact with an individual with confirmed Ebola Virus Disease?

If no, stop here.

If yes, proceed to question 3.

3. Do you have any of these symptoms.....

FEVER (SUBJECTIVE OR $\geq 38^{\circ}$ C or 100.4° F), DIARRHEA, NAUSEA, VOMITING, ABDOMINAL PAIN, CHILLS,
WEAKNESS, JOINT OR MUSCLE ACHES, HEADACHE, LACK OF APPETITE

If no, stop here. Conduct standard work up.

If "Yes," initiate the following actions:

1. Direct care provider and nurse don PPE.
2. Place face mask on patient and cover with impervious gown
3. Notify Charge nurse/clinical leader and physician
4. Transport the patient via wheelchair to private/isolation area and implement **Contact and Droplet Precautions**
 - a. Other patient/visitor traffic should be routed away from that private/isolation area
5. Escort family or accompanying parties of high-risk patient to a separate, designated family Waiting Room until further directions from the on-call Infectious Disease physician.
6. Resources to call:
 - a. Name:
 - b. Number:

Support Document 2: Emergency Department Staff and Support Roles

Updated 10/19/2014 8:50 AM

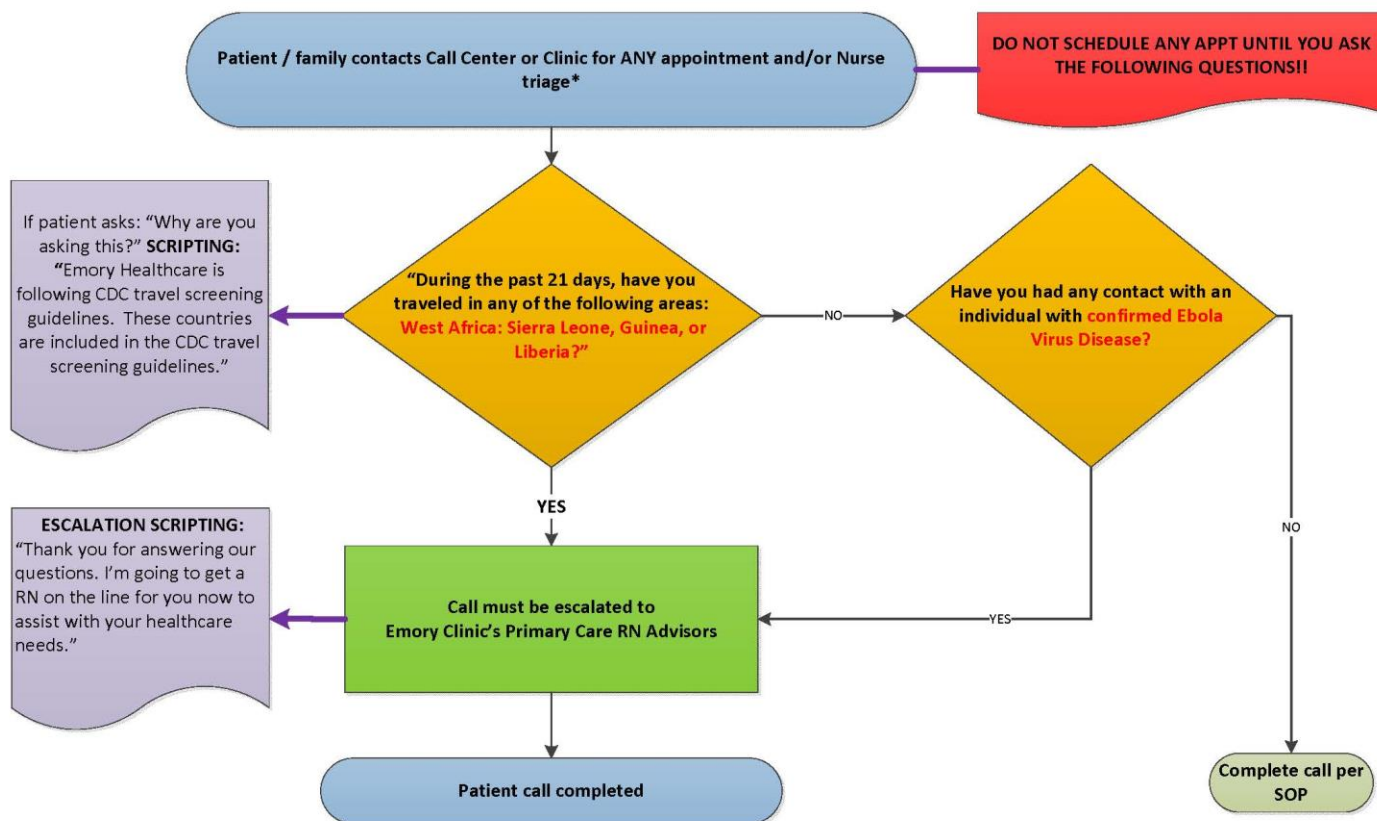
Emergency Department Staff & Support Roles

ED physician	ID physician	Charge Nurse	Staff RN Direct Care	Staff Tech Direct Care	Resource Tech	Other ED Staff (as needed)	Registration	Public Safety
<p>Dons PPE appropriate for patient condition to achieve standard, contact and droplet precautions</p> <p>Performs initial screen in ED to confirm that patient was in country where Ebola is present or had contact with person with known Ebola</p> <p>Performs symptom screen, assesses severity of illness and begins resuscitation as needed</p> <p>Contacts Emory ID for formal risk assessment</p>	<p>Performs clinical risk assessment combining exposure risk with clinical findings</p> <p>Assesses need for STAT Ebola testing</p> <p>Coordinate with Serious Communicable Disease Unit physicians, should STAT Ebola virus testing or transfer be needed</p> <p>Communicates with public health authorities</p> <p>Arranges for out of hospital follow up if that is disposition</p>	<p>Notifies ED MD</p> <p>Assigns Staff Roles</p> <p>Coordinates Room availability (directs for patients to be moved out of designated isolation room and anteroom)</p> <p>Designated isolation room for patient</p> <p>PPE Donning and doffing to occur outside designated isolation room</p> <p>Notifies Shift Manager or Designee</p> <p>Collaborates with the team to ensure optimal operations, safety and calm environment</p> <p>Acquires additional resources as necessary</p>	<p>Dons PPE</p> <p>Assesses room readiness</p> <p>Receives patient's verbal consent for treatment, basic information for Quick Reg and calls Registration</p> <p>Completes initial and ongoing assessment, completes treatment as prescribed by MD</p> <p>Receives Pt ID band from Buddy, verifies with patient and places armband</p> <p>Doffs PPE and Dons PPE as directed</p>	<p>Dons PPE</p> <p>Assesses room readiness</p> <p>Receives patient at EMS entrance (if applicable) and transport to designated isolation room</p> <p>Completes initial Vital Signs and ongoing vital signs</p> <p>Obtains lab specimens as ordered by MD</p> <p>Prepares specimens for transport to CDC as applicable</p> <p>Doffs PPE and Dons PPE as directed</p>	<p>Moves rolling carts outside of designated isolation room to another space in ED</p> <p>Moves PPE carts (2) from Clean Room to outside designated isolation room</p> <p>Positions a Bedside Commode outside designated isolation room</p> <p>Dons PPE</p> <p>Remains posted outside of designated isolation room and serves as resource for direct care team for communication, obtaining additional supplies and collaborating with Public Safety to ensure no traffic flow</p> <p>Doffs PPE and Dons PPE as directed</p>	<p>Assist with room readiness by relocating rolling carts outside anteroom, obtaining bedside commode and removing non-essential supplies from anteroom and designated isolation room if patient has not yet presented.</p>	<p>When alerted, remains posted at station for receipt of patient information.</p> <p>Prepares patient ID band.</p> <p>Hands off Patient ID label to the Buddy ensuring no direct contact and remains outside the zoned area.</p>	<p>Alerts Public Safety officers on duty who are stationed at access points of pending arrival (if privately owned vehicle (POV)) with directions to direct POV arrival to EMS entrance.</p> <p>Reports to the area of designated isolation room to control non-essential traffic away from the area.</p> <p>Zones the area (when alerted that the event has been designated Level2) with the Biohazard red tape.</p> <p>Notifies the Director of Public Safety in the event that a Level 2 alert has been declared.</p>

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Support Document 3: Emory Clinic Potential Ebola Screening: Call Center SOP

TEC/ESA Potential Ebola Screening: Call Center SOP

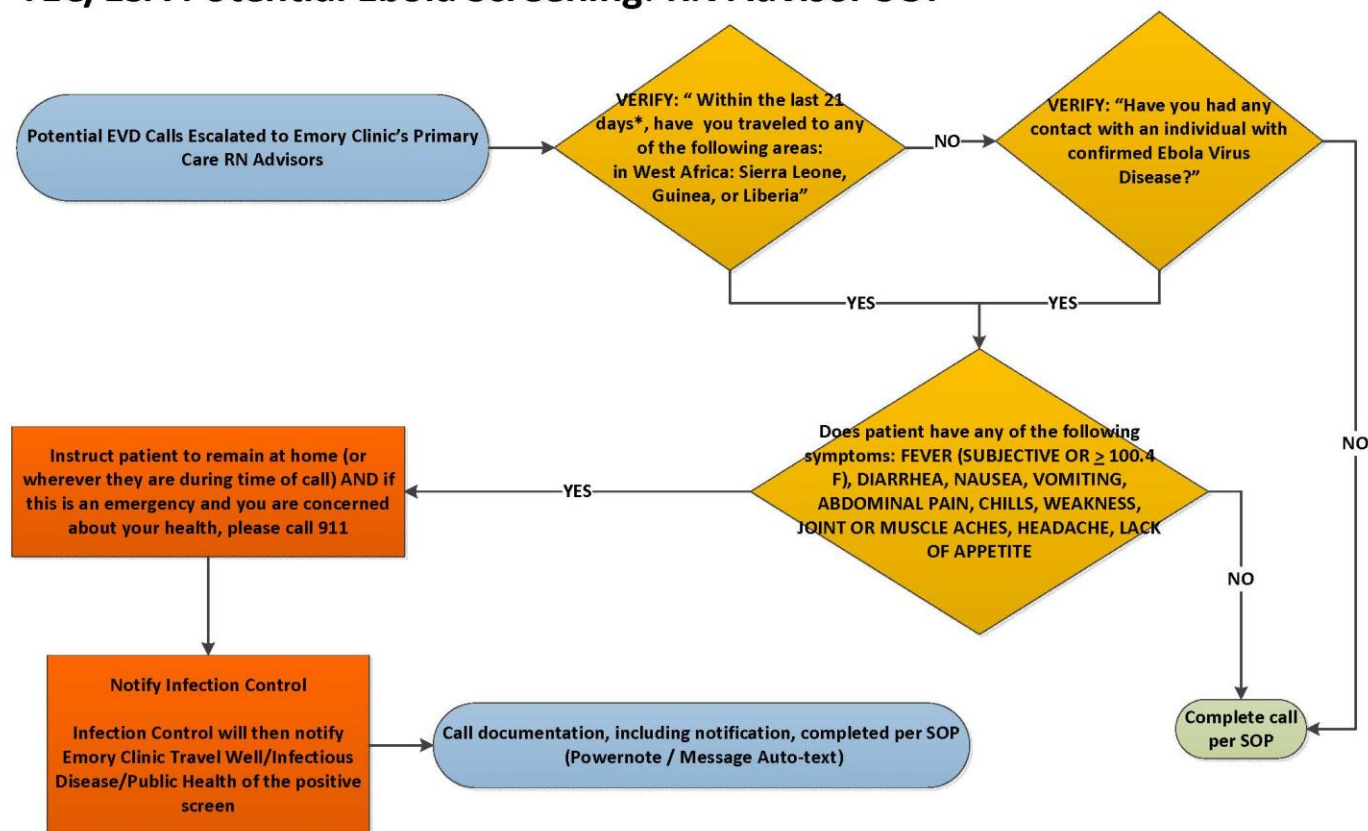


* The decision to universally screen all patients is due to operational considerations

EVD Screening for TEC/ESA Patient Calls (w/scripting) per CDC Checklist:
<http://www.cdc.gov/vhf/ebola/pdf/checklist-patients-evaluated-us-evd.pdf>
 Last updated 10.17.2014

Support Document 4: TEC/ESA Potential Ebola Screening: RN Advisor SOP

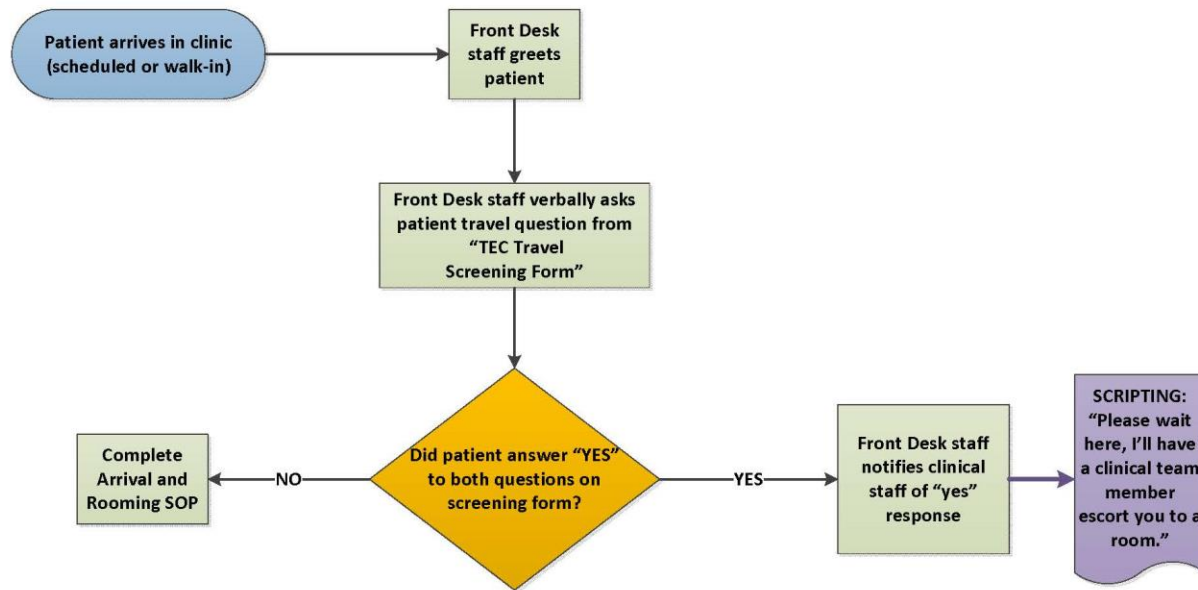
TEC/ESA Potential Ebola Screening: RN Advisor SOP



EVD RN Advisors' Call Escalation SOP per CDC Checklist:
<http://www.cdc.gov/vhf/ebola/pdf/checklist-patients-evaluated-us-evd.pdf>
 Last Updated 10.17.14

Support Document 5: TEC/ESA Potential Ebola Screening: Front Desk SOP

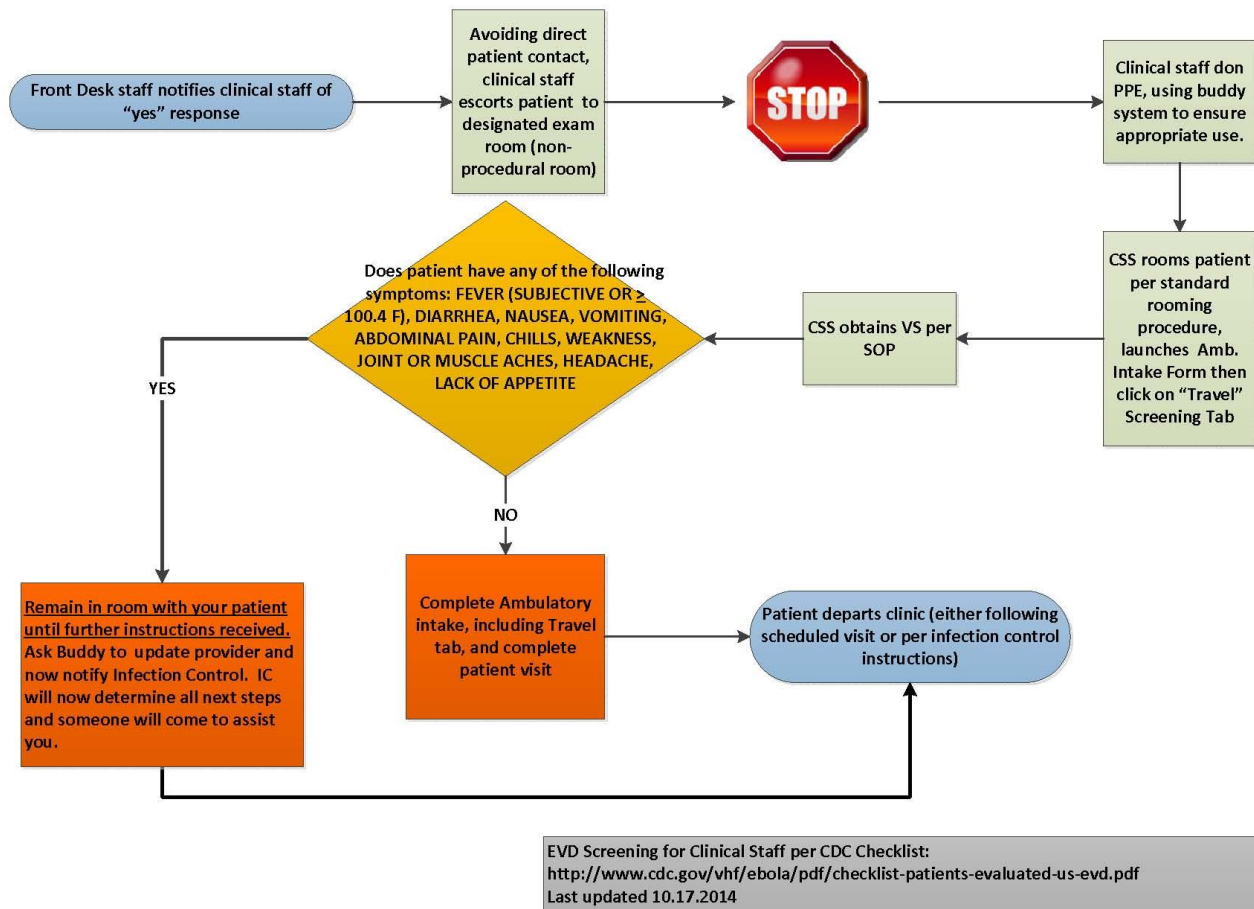
TEC/ESA Potential Ebola Screening: Front Desk SOP



EVD Ambulatory Patient Arrival w/Front Desk Screening
<http://www.cdc.gov/vhf/ebola/pdf/checklist-patients-evaluated-us-evd.pdf>
 Last updated 10.17.14

Support Document 6: TEC/ESA Potential Ebola Screening: Clinical Staff SOP

TEC/ESA Potential Ebola Screening: Clinical Staff SOP



Support Document 7: TEC/ESA EVD Screening Flyer



Registration staff: please ask ALL patients the following questions upon patient check in.

Scripting if patient has questions regarding screening: “Emory Healthcare is following CDC travel screening guidelines. These countries are included in the CDC travel screening guidelines.”

Inform the clinical staff **IMMEDIATELY** if you check yes to both of the following:

☐ **Has patient**

- **traveled in the last 21 days to the following West African nations: Liberia, Sierra Leone, or Guinea**

OR

- **had contact with an individual with confirmed Ebola Virus Disease.**

AND

☐ **Does patient have a fever or illness**

Support Document 8: CDC: Checklist for Patients Being Evaluated for EVD in the United States



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Checklist for Patients Being Evaluated for Ebola Virus Disease (EVD) in the United States

Upon arrival to clinical setting/triage

- ☐ Assess the patient for a fever (subjective or $\geq 100.4^{\circ}\text{F}$ / 38.0°C)
- ☐ Determine if the patient has symptoms compatible EVD such as headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain or hemorrhage
- ☐ Assess if the patient has a potential exposure from traveling to a country with widespread Ebola transmission* or having contact with an Ebola patient in the 21 days before illness onset

Suspect Ebola if fever or compatible Ebola symptoms and an exposure are present

See next steps in this checklist and the Algorithm for Evaluation of the Returned Traveler for Ebola at <http://www.cdc.gov/vhf/ebola/pdf/ebola-algorithm.pdf>

Upon initial assessment

- ☐ Isolate patient in single room with a private bathroom and with the door to hallway closed
- ☐ Implement standard, contact, & droplet precautions
- ☐ Notify the hospital Infection Control Program at _____
- ☐ Report to the health department at _____

Conduct a risk assessment for:

High-risk exposures

- ☐ Percutaneous (e.g., needle stick) or mucous membrane exposure to blood or body fluids from an EVD patient
- ☐ Direct skin contact with skin, blood or body fluids from an EVD patient
- ☐ Processing blood or body fluids from an EVD patient without appropriate PPE
- ☐ Direct contact with a dead body in an Ebola-affected area without appropriate PPE

Low-risk exposures

- ☐ Household members of an EVD patient or others who had brief direct contact (e.g., shaking hands) with an EVD patient without appropriate PPE
- ☐ Healthcare personnel in facilities with EVD patients who have been in care areas of EVD patients without recommended PPE

Use of personal protective equipment (PPE)

- ☐ Use a buddy system to ensure that PPE is put on and removed safely

Before entering patient room, wear:

- ☐ Gown (fluid resistant or impermeable)
- ☐ Facemask
- ☐ Eye protection (goggles or face shield)
- ☐ Gloves

If likely to be exposed to blood or body fluids, additional PPE may include but isn't limited to:

- ☐ Double gloving
- ☐ Disposable shoe covers
- ☐ Leg coverings

Upon exiting patient room

- ☐ PPE should be carefully removed without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials
- ☐ Discard disposable PPE
- ☐ Re-useable PPE should be cleaned and disinfected per the manufacturer's reprocessing instructions
- ☐ Hand hygiene should be performed immediately after removal of PPE

During aerosol-generating procedures

- ☐ Limit number of personnel present
- ☐ Conduct in an airborne infection isolation room
- ☐ Don PPE as described above except use a NIOSH certified fit-tested N95 filtering facepiece respirator for respiratory protection or alternative (e.g., PAPR) instead of a facemask

Patient placement and care considerations

- ☐ Maintain log of all persons entering patient's room
- ☐ Use dedicated disposable medical equipment (if possible)
- ☐ Limit the use of needles and other sharps
- ☐ Limit phlebotomy and laboratory testing to those procedures essential for diagnostics and medical care
- ☐ Carefully dispose of all needles and sharps in puncture-proof sealed containers
- ☐ Avoid aerosol-generating procedures if possible
- ☐ Wear PPE (detailed in center box) during environmental cleaning and use an EPA-registered hospital disinfectant with a label claim for non-enveloped viruses**

Initial patient management

- ☐ Consult with health department about diagnostic EVD RT-PCR testing***
- ☐ Consider, test for, and treat (when appropriate) other possible infectious causes of symptoms (e.g., malaria, bacterial infections)
- ☐ Provide aggressive supportive care including aggressive IV fluid resuscitation if warranted
- ☐ Assess for electrolyte abnormalities and replete
- ☐ Evaluate for evidence of bleeding and assess hematologic and coagulation parameters
- ☐ Symptomatic management of fever, nausea, vomiting, diarrhea, and abdominal pain
- ☐ Consult health department regarding other treatment options

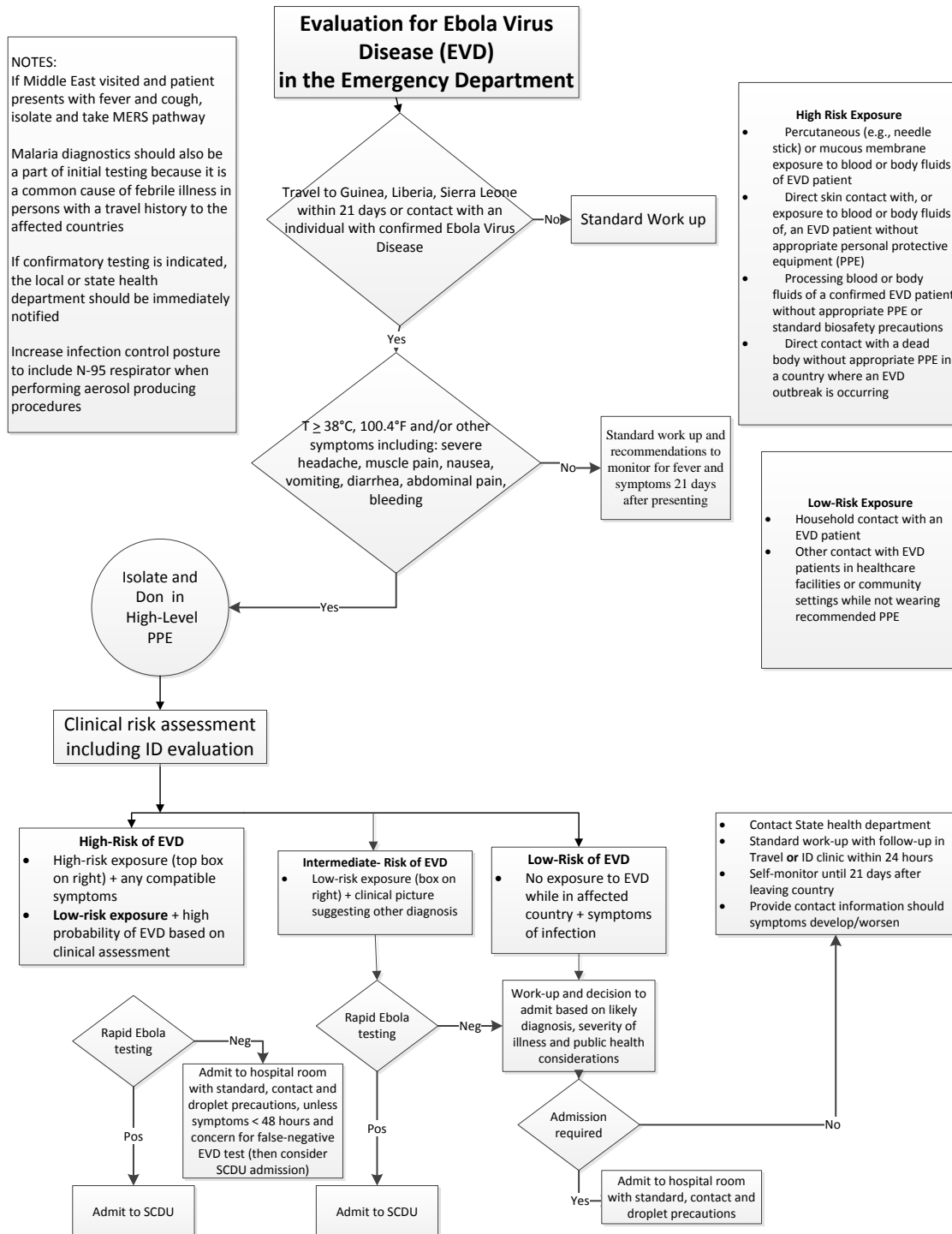
This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.

* See 2014 Ebola Outbreak in West Africa—Case Counts or <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html> to determine if a country has widespread Ebola transmission

** See Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus or <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>

*** See Interim Guidance for Specimen Collection, Transport, Testing, and Submission for Persons Under Investigation for Ebola Virus Disease in the United States or <http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html>

Support Document 9: Evaluation for Ebola Virus Disease in the Emergency Department




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Support Document 10: Standard Operating Procedures SCDU Training



Standard Operating Procedures: Serious Communicable Disease Unit

Entering the Unit



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1. Sign in at Nurse Station.
2. Complete Check-in Form (temperature).
3. Sign in outside anteroom.
4. Check gauges.
5. Check signs.
6. Enter anteroom.

Standard Operating Procedures: Serious Communicable Disease Unit

Donning PPE for Anteroom

**see next page for entering patient room*



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After entering anteroom:

1. Enter locker room.
2. Remove jewelry.
3. Remove all clothing and place clean clothes, undergarments, and shoes in locker.
4. Don disposable scrubs, socks, and shoes dedicated to unit.
5. Enter anteroom.
6. Don belt and battery.
7. Check motor.
8. Put motor in the hood and set aside.
9. Don Tyvek suit.
10. Don inner gloves and tape to Tyvek.
11. Don outer gloves.
12. Don booties.
13. Sanitize gloves.
14. Put apron aside.

**see next page for entering patient room*

Standard Operating Procedures: Serious Communicable Disease Unit

Donning PPE for Patient Room



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After entering anteroom:

1. Enter Locker Room.
2. Remove jewelry.
3. Remove clothes and place clean clothes , undergarments and shoes in locker.
4. Don disposable scrubs, socks, and shoes dedicated to unit
5. Enter anteroom.
6. Don belt and battery.
7. Check motor.
8. Put motor in the hood and set aside.
9. Don Tyvek suit.
10. Don inner gloves and tape to Tyvek.
11. Don outer gloves.
12. Don booties.
13. Sanitize gloves.
14. Plug in hood, put on apron and hood, zip up, and tie up hood and apron.
15. Check gauges and signs.
16. Enter patient's room.

Standard Operating Procedures: Serious Communicable Disease Unit

Doffing PPE for Anteroom (ONLY)



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1. Remove booties.
2. Sanitize gloves.
3. Remove outer gloves.
4. Sanitize gloves.
5. Remove tape.
6. Sanitize gloves.
7. Remove Tyvek.
8. Sanitize gloves.
9. Remove inner gloves.
10. Sanitize hands.
11. Remove belt and battery.
12. Enter locker room.
13. Remove disposable scrubs.
14. Don clothes.
15. Enter anteroom.
16. Wash hands with soap and water.
17. Exit anteroom.

Standard Operating Procedures: Serious Communicable Disease Unit

Doffing PPE for Patient Room



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Updated October 16, 2014

1. Remove apron.
2. Remove one bootie then step onto chemical mat; repeat with second bootie.
3. Sanitize gloves.
4. Remove outer gloves.
5. Sanitize gloves.
6. Remove tape.
7. Sanitize gloves.
8. Remove Tyvek.
9. Sanitize gloves.
10. Enter anteroom (*anteroom nurse should be wearing face shield*).
11. Remove hood.
12. Sanitize gloves.
13. Remove inner gloves.
14. Wash hands with soap and water.
15. Remove belt, battery, and motor.
16. Enter locker room.
17. Remove disposable scrubs.
18. Shower for 5 minutes, shampooing hair.
19. Don clothes.
20. Enter anteroom.
21. Exit anteroom.

Standard Operating Procedures: Serious Communicable Disease Unit

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Doffing PPE for Anteroom (ONLY)



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1. Remove booties.
2. Sanitize gloves.
3. Remove outer gloves.
4. Sanitize gloves.
5. Remove tape.
6. Sanitize gloves.
7. Remove Tyvek.
8. Sanitize gloves.
9. Remove inner gloves.
10. Sanitize hands.
11. Remove belt and battery.
12. Enter locker room.
13. Remove disposable scrubs.
14. Don clothes.
15. Enter anteroom.
16. Wash hands with soap and water.
17. Exit anteroom.

Standard Operating Procedures: Serious Communicable Disease Unit

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Doffing PPE for Patient Room




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1. Remove apron.
2. Remove one bootie then step onto chemical mat; repeat with second bootie.
3. Sanitize gloves.
4. Remove outer gloves.
5. Sanitize gloves.
6. Remove tape.
7. Sanitize gloves.
8. Remove Tyvek.
9. Sanitize gloves.
10. Enter anteroom (*anteroom nurse should be wearing face shield*).
11. Remove hood.
12. Sanitize gloves.
13. Remove inner gloves.
14. Wash hands with soap and water.
15. Remove belt, battery, and motor.
16. Enter locker room.
17. Remove disposable scrubs.
18. Shower for 5 minutes, shampooing hair.
19. Don clothes.
20. Enter anteroom.
21. Exit anteroom.

Standard Operating Procedures: Serious Communicable Disease Unit

Waste Management for Anteroom



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1. Plug in, put on apron and hood, zip up and tie up apron and hood.
2. Remove red biological bag from waste container after adding 250 mL of water.
3. Goose neck and tape loosely to secure bag.
4. Disinfect (wipe) the outside of the bag.
5. Place bag into red biological bag.
6. Goose neck and tape loosely to secure bag.
7. Disinfect (wipe) the outside of the bag.
8. Place bag into autoclave bag (orange).
9. Use rubber band to secure autoclave bag.
10. Disinfect (wipe) the outside of the bag.
11. Sanitize gloves.
12. Place in waste container outside anteroom.
13. Sanitize gloves.
14. Mop floor.
15. Remove apron.
16. Sanitize gloves.
17. Remove outer gloves.
18. Sanitize inner gloves.
19. Don new outer gloves.
20. Remove PAPR and set aside.
21. At the end of shift, dispose hood, remove motor, disinfect, and store.

Standard Operating Procedures: Serious Communicable Disease Unit

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Waste Management - Patient Room



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1. Add 300 mL of water and remove red biological bag from waste container.
2. Goose neck and tape loosely to secure bag.
3. Disinfect (wipe) the outside of the bag.
4. Place bag into red biological bag.
5. Goose neck and tape loosely to secure bag.
6. Disinfect (wipe) the outside of the bag.
7. Store in shower (patient room) until removal to anteroom.
8. Sanitize gloves.

At the end of the shift (anteroom don hood) –

9. Place waste into autoclave (orange) bag.
10. Bring waste into anteroom.
11. Use rubber band to secure autoclave bag.
12. Disinfect (wipe) the outside of the bag.
13. Sanitize gloves.
14. Place in waste container outside anteroom.
15. Sanitize gloves.
16. Mop floor.

Standard Operating Procedures: Serious Communicable Disease Unit

Spill Cleanup



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1. Alert team.
2. Assist patient.
3. Establish a spill parameter.
4. Visual check of PPE and clean any visible contamination
5. Pour disinfectant on clean towel to establish chemical mat* near spill.
6. Remove one bootie then step onto newly created chemical mat*; repeat with second bootie.
7. Sanitize gloves.
8. Remove outer gloves.
9. Sanitize gloves.
10. Don outer gloves then booties.
11. Sanitize gloves.
12. Soak clean towel in disinfectant.
13. Cover spill outside-in with bathroom towel.
14. Allow for appropriate contact time (10 minutes).
15. Clean-up spill from outside-in.
16. Sanitize gloves.
17. Remove outer gloves.
18. Don new outer gloves.
19. Mop area, placing wipes in red bag.
20. Sanitize gloves.
21. Remove one bootie then step onto newly created chemical mat*; repeat with second bootie.
22. Sanitize gloves.
23. Remove outer gloves.
24. Don outer gloves then booties
25. Follow Waste Management for Patient Room protocol.

Standard Operating Procedures: Serious Communicable Disease Unit

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Needle-Stick or Cut



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1. Quickly sanitize gloves.
2. Remove both inner and outer gloves to expose wound.
3. Express wound.
4. Flush wound with water for five minutes.
5. Cover wound by donning glove.
6. Doff PPE per Patient Room SOP.
7. Report for medical assessment.
8. Log and report incident and notify occupational health.

Standard Operating Procedures: Serious Communicable Disease Unit

Patient Room to Anteroom



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Perform this SOP when an individual leaves the patient room and enters the anteroom (exiting the facility); role of anteroom nurse:

1. Mop area between door to patient room and locker room.
2. Dispose of wipes.
3. Sanitize gloves.
4. Remove outer gloves.
5. Don new outer gloves.

Standard Operating Procedures: Serious Communicable Disease Unit

Shift Change (All Rooms)



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Prior to shift change:

1. Empty all waste (using appropriate waste management SOP).
2. Mop complete area (including patient room, bathroom where waste was stored, ante room, and shower room).
3. Wipe down motor cords with disinfectant wipes.
4. Restock items needed for next shift (PPE, patient care items, etc.)

Standard Operating Procedures: Serious Communicable Disease Unit

Opening Doors and Changing Gloves



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Prior to opening any door:

1. Sanitize gloves.

Changing Gloves:

1. Sanitize gloves.
2. Remove outer gloves using BEAK method.
3. Sanitize inner gloves.
4. Don outer gloves.

Standard Operating Procedures: Serious Communicable Disease Unit

Patient Room to Patient Room



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Doffing from Patient Room:

1. Remove booties and step onto chemical mat.
2. Sanitize gloves.
3. Remove outer gloves
4. Sanitize gloves.
5. Enter Anteroom

Donning to go into other Patient Room:

1. Don outer gloves
2. Don booties.
3. Enter other patient room

Anteroom Nurse:

1. Mop floors in anteroom
2. Sanitize gloves.

Standard Operating Procedures: Serious Communicable Disease Unit

Items from Patient Room to Patient Room



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Leaving Patient Room #1:

1. Sanitize gloves.
2. Clean item with bleach wipe
3. Place item in small biohazard bag
4. Clean outside of bag with bleach wipe
5. Place bag inside second biohazard bag
6. Clean outside of second bag with bleach wipe

Entering Anteroom:

1. Open patient room's door
2. Open bucket/container to allow patient's room nurse to place item in bucket/container.
3. Close patient's room door.
4. Sanitize gloves.

Entering Patient Room #2:

1. Obtain item from bucket
2. Anteroom nurse will clean bucket with bleach bucket
3. Anteroom nurse sanitizes gloves

Standard Operating Procedures: Serious Communicable Disease Unit

Lab Draw from Patient Room to SCDU Lab



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Leaving Patient Room #1:

1. Sanitize gloves
2. Clean specimen tube with bleach wipe
3. Verify label using two identifiers
4. Apply label to specimen tube and include date and time
5. Place tube in small biohazard bag
6. Clean outside of bag with bleach wipe
7. Place bag inside second biohazard bag
8. Clean outside of second bag with bleach wipe

Entering Anteroom:

1. Open patient room's door.
2. Open biohazard container to allow patient's room nurse to place biohazard bag in biohazard container.
3. Close patient's room door.
4. Sanitize gloves
5. Clean outside of biohazard container with bleach wipe

Anteroom to SCDU Lab:

1. Anteroom nurse hands off biohazard container to SCDU lab personnel.
2. Lab personnel delivers biohazard container to SCDU lab within the Unit.
3. SCDU lab personnel in appropriate PPE retrieves tube from biohazard container from bucket
4. The biohazard container is transported back to the anteroom where the anteroom nurse will clean container with bleach wipes
5. Sanitize gloves

Standard Operating Procedures: Serious Communicable Disease Unit

UPDATED: Donning Procedure



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1. Change into hospital scrubs.
2. Remove jewelry.
3. Enter clean corridor.
4. Don inner gloves.
5. Don yellow gown.
6. Don outer gloves.
7. Don booties.
8. Sanitize gloves.
9. Check gauges and signs.
10. Enter anteroom.
11. Sanitize gloves.
12. Don face shield.
13. Enter patient room.

Standard Operating Procedures: Serious Communicable Disease Unit

UPDATED: Doffing Procedure



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1. Remove booties (stepping on mat).
2. Sanitize gloves.
3. Remove outer gloves.
4. Sanitize gloves.
5. Remove gown.
6. Sanitize gloves.
7. Remove face shield.
8. Sanitize gloves.
9. Enter anteroom.
10. Remove gloves.
11. Wash hands thoroughly.
12. Sanitize hands.
13. Enter clean corridor.
14. Change out of hospital scrubs

Standard Operating Procedures: Serious Communicable Disease Unit

Support Document 11: Blood Product and Convalescent Plasma Administration for Patients in SCDU

I. PRINCIPLE:

Patients admitted to the SCDU may need to receive blood products for hemostatic resuscitation. Until a blood type and antibody screen can be performed, group O uncrossmatched red blood cells and group AB plasma products will be emergently released to the ordering physician.

II PROCEDURE:

When it is determined that blood products need to be transfused to a SCDU patient, the following protocol will be followed:

- A. For females of child bearing age, group O negative red blood cells and group AB plasma products will be issued.
- B. For males and females not of child bearing age, group O positive red blood cells and group AB plasma products will be issued.
- C. After the first 24 hours, if it is determined that more blood products will be required, the hospital blood bank will be notified to perform a type and screen by manual methods in the SCDU dedicated laboratory. Once a type has been established on two separate occasions, type specific plasma products can be issued. If no passive anti-A or anti-B is detected, type specific red blood cells may also be provided.

III Use of Convalescent Whole Blood or Plasma Collected from Patients Recovered from Ebola Virus Disease for Transfusion, as an Empirical Treatment during Outbreaks

The WHO has published the protocol for the use of convalescent whole blood or plasma as a treatment during patient care. You can find that document here:

http://apps.who.int/iris/bitstream/10665/135591/1/WHO_HIS_SDS_2014.8_eng.pdf?ua=1