TITLE: Viral Hemorrhagic Fever (VHF) Readiness Plan
A Guideline for Use by Hospital/Healthcare Systems

PURPOSE: This document outlines a plan for responding to threats posed by viral hemorrhagic
diseases that have the potential for becoming epidemic or pandemic. Several diseases
meeting this definition have come to the attention of the healthcare community and the
public in recent years. An example of this is Ebola. This plan has evolved from state and
federal guidelines recommending aggressive proactive approaches of infectious disease
prevention practices and universal administration of appropriate vaccines as available.

This document outlines a plan of increasing prevention and control activities as the threat
of an epidemic/pandemic increases. It is intended for use by Hospital/Healthcare System
Emergency Preparedness Committees or Incident Command Teams to work in
conjunction with the Infection Prevention and Control Team. These actions should be
taken to prevent the spread of contagious infections among patients, staff, volunteers,
students and visitors.

Any recommended actions should be used in conjunction with the advice and guidance
provided by the local health authority, the Texas Department of State Health Services
(DSHS) and the Centers for Disease Control and Prevention (CDC).
Definitions

**Antiviral medication**: A medication that destroys or inhibits the growth and reproduction of viruses.

**Confirmed case**: Refers to a laboratory-confirmed infection in a person with illness of concern.

**Contact**: Exposure to a source of infection or a person so exposed.

**Epidemic**: The occurrence of more cases of a disease than would be expected in a community or region during a given time period.

**Isolation**: Refers to the separation and restriction of movement of people with a specific communicable disease to contain the spread of that illness to susceptible people; known as contain and confine principle of prevention. People in isolation may be cared for in their homes, in hospitals, at designated health care facilities, or other dedicated facilities.

**Incubation Period**: This is the time from exposure to an infectious disease to symptom onset.

**Pandemic**: A widespread epidemic of an infectious disease affecting a large part of the population or across a large geographic distribution.

**Person Under Investigation**: A person who has either consistent signs or symptoms with a viral hemorrhagic fever (VHF) and an epidemiologic risk factor, but no lab confirmation at the current time.

**Person Under Investigation (PUI) for Ebola**: A person who has both consistent signs or symptoms (elevated body temperature or subjective fever, severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal pain or unexplained hemorrhage) and an epidemiologic risk factor within the 21 days before the onset of symptoms.

**Quarantine**: The confinement of people who may have been exposed to an infectious agent and may be infected, but are not yet ill, to their home. Quarantine usually occurs in the home but can be a dedicated facility or hospital. The term “quarantine” also can be applied to restrictions of movement into or out of buildings, other structures, and public conveyances. In addition, specific areas or communities may be quarantined. Quarantine is initiated by the Public Health Authority.

**Respiratory Etiquette**: This CDC initiative includes covering your mouth with a tissue or coughing/sneezing into your sleeve, using a tissue to contain secretions, wearing a mask, and washing your hands to prevent the spread of upper respiratory diseases.

**Suspected case**: A diagnosis of viral hemorrhagic disease made on a clinical basis, pending laboratory confirmation.

**Transmission of Infection**: Any mode or mechanism by which an infectious agent is spread through the environment or to another person.

**Viral Hemorrhagic Fever (VHF)**: Refers to a group of illnesses that are caused by several distinct families of viruses.
VHF INITIAL PREPAREDNESS CONSIDERATIONS
No local VHF activity
Isolated outbreaks or ongoing public health events on other continents

Baseline Activities to Ensure Preparedness:

Access Control
1. Require identification badges for all staff, physicians, volunteers, students, and vendors
2. Develop plan to limit access through lock down and monitoring of entrances and exits

Vaccination
1. Estimate and order vaccine and other vaccines as recommended
2. Assess facility/system vaccine availability for recommended vaccines
3. Have a plan to rapidly distribute vaccines to patients, staff, and staff family members
4. Know current vaccine status of employees
5. Have plan in place for required documentation for employees who cannot receive designated vaccines, and plan for work restrictions / alternative assignments if appropriate
6. Discuss leadership plan for vaccination verification for licensed independent practitioners (LIP)
   (includes MD, PA, NP, etc.)

Surveillance Screening and Triage
1. System of syndromic surveillance is implemented (electronic or manual)
2. Monitor current status in US and local community through Public Health Reports
3. Coordinate with the local and State Public Health authorities for latest local recommendations
4. Keep hospital leadership informed of community disease status
5. Reinforce standard precautions and isolation practices. Provide supplies and personal protective equipment as required. Review Employee Health/Occupational Medicine policy specifying whether employees with symptoms may work
6. Ensure institution leadership support of policy
7. Refer staff who present with symptoms to occupational / employee health to determine their continued work status
8. Communicate visitation restrictions to staff and general public.
**Infection Prevention and Control Precautions**

1. Monitor implementation of Standard and Transmission-Based Precautions; assess and ensure adequate availability of supplies in the outpatient and inpatient clinical areas
2. Evaluate isolation precautions criteria in outpatient and inpatient settings
3. Ensure availability of isolation signs to alert individuals of required precautions. See CDC for current recommendations on instructions on donning and doffing of required PPE
4. Ensure airborne infection isolation handling systems are operational; this includes portable airflow filtration units and exhaust systems
5. Alert leadership and supervisors to have employees notify supervisor, Employee Health or Occupational Medicine when returning to duty if staff traveled to an area where disease is present
6. Admit any case of potential VHF disease to appropriate isolation precautions and a private room. Organizations should designate a room in advance for the triage, and treatment of potentially infectious patients.

**Communication / Public Information / Education**

1. Develop a process for educating staff, visitors and patients
2. Provide feedback on compliance with infection prevention precautions, hand hygiene and vaccination to facility leadership and healthcare providers to encourage compliance and improvement
3. Designate a Public Information Officer (PIO) to participate in the Emergency Management Joint Information Center (JIC)
4. Identify a subject matter expert and back-up to support the PIO
5. Prepare, develop, and print facility-specific educational signs for notification of visitation status.
6. Develop internal and external contact lists for communication

**Preparedness**

1. Establish a facility specific pandemic infectious disease response plan
   a. Develop a list of required supplies and medications preparing for pandemic infectious disease outbreak
   b. Complete an emergency contact number list
   c. Ensure Laboratory Services has established and updated their emergency plan to deal with surge capacity of patients with VHF
2. Confirm alternative staffing resource plan if high staff absences are anticipated
   a. Ensure contracted staff have same vaccinations and/or prophylaxis as facility staff

For the latest PPE and isolation guidelines, refer to the CDC website at [www.cdc.gov](http://www.cdc.gov)
b. Identify military reservists on the facility staff, who could be activated to military active duty in the event of an emergency

c. Update individuals and contact numbers for organization Incident Command System.

d. All leaders and incident command section chiefs review incident command and emergency preparedness policies

3. Test the incident command recall system.

4. Prioritize services that will be curtailed/eliminated in event of outbreak or treatment of a VHF patient within the facility.

5. Establish alternative locations for current inpatients requiring chronic or hospice care.

6. Prioritize use of clinical and non-clinical facility space to be converted to alternate use (i.e. includes patient care areas, triage, fast track, patient observation area)

7. Verify that designated staff are trained on Web Emergency Operations Center (WebEOC) to include institutional data collection processes, current WebEOC access and procedures to convey required data to the Regional Medical Operations Center (RMOC)

8. Participate in internal and scheduled community emergency preparedness exercises
VHF Categories

Viral hemorrhagic fevers (VHFs) refer to a group of illnesses caused by several of viruses. Including:

Filoviridae (Ebola and Marburg viruses)
The Filoviridae (from Latin filo meaning thread, referring to their filamentous shape) are single-stranded, negative-sense RNA viruses. Four of the 5 species of virus in the Ebolavirus genus and both of the known species of the virus in the Marburgvirus genus are associated with human disease. All of the known human pathogenic filoviruses are endemic only in sub-Saharan Africa

Arenaviridae (Lassa fever and New World hemorrhagic fever)
Arenaviruses are segmented, single-stranded RNA viruses. The major New World arenavirus hemorrhagic fevers occurring in the Western hemisphere are caused by the Tacaribe serocomplex of arenaviruses: Argentine HF caused by Junin virus, Bolivian HF caused by Machupo virus, and Venezuelan HF caused by Guanarito virus. A fourth arenavirus, Sabia virus, has been recognized to cause 2 unrelated cases of naturally occurring HF in Brazil and 2 laboratory-acquired cases. Chapare virus has been isolated from a human fatal case in Bolivia. The Old World complex of arenaviruses includes Lassa virus, which causes Lassa fever in West Africa, as well as Lujo virus, which was described in southern Africa during an outbreak characterized by fatal human-to-human transmission. Several other arenaviruses are known only from rodent reservoirs in the Old and New World.

Bunyaviridae (Rift Valley fever, Crimean- Congo fever, and “agents of hemorrhagic fever with renal syndrome”)
Bunyaviridae are segmented, single-single stranded RNA viruses with different geographic distributions depending on their vector or reservoir. Hemorrhagic fever syndromes are associated with viruses from 3 genera: hantaviruses, nairoviruses, and phleboviruses. Old World hantaviruses cause HFRS, and New World hantaviruses cause hantavirus pulmonary syndrome.

Flaviviridae (yellow fever, Omsk hemorrhagic fever, Kyasanur Forest disease, and dengue)
Many VHF viruses are virulent, and some are highly infectious (e.g., filoviruses and arenaviruses) with person- to- person transmission from direct contact with infected blood and bodily secretions. Effective therapies and prophylaxis are extremely limited for VHF; therefore, early detection and strict adherence to infection control measures are essential.

Source: Red Book: 2015 Report of Committee on Infectious Diseases

### Filoviruses

<table>
<thead>
<tr>
<th>Virus</th>
<th>Worldwide Occurrences</th>
<th>Reservoir/Vector</th>
<th>Transmission</th>
</tr>
</thead>
</table>
| Ebola   | • Identified in 1976 during outbreaks in the Democratic Republic of Congo (formerly known as Zaire) and Sudan. Four species of Ebola viruses are recognized and named after the region where they were discovered: Ivory Coast, Sudan, Zaire, and Reston  
  • Laboratory- acquired infections have occurred in England (1976)  
  • Ebola has been introduced to quarantine facilities in the United States (1989, 1990, 1996), Italy (1992), Philippines (1996)                                                                                       | Unknown/Unknown | Person-to-person transmission occurs via:  
  • Contact with blood, secretions, or tissue of infected patient (sexual transmission may occur up to 3 months after clinical illness ends)  
  • Contact with cadaver  
  • Airborne transmission (Suspected)  
  • Parenteral inoculation (unsterilized needles, accidental needle sticks)  
  • Contact with blood, secretions, or tissue of infected nonhuman primate  
  • Exposure in laboratory |
| Marburg  | • Identified in 1967 in Germany when laboratory staff handling tissues from African green monkeys became infected  
  • Laboratory-acquired infections have occurred in Germany (1967)                                                                                                                                               | Unknown/Unknown | |

### Arenaviruses

<table>
<thead>
<tr>
<th>Virus</th>
<th>Worldwide Occurrences</th>
<th>Reservoir/Vector</th>
<th>Transmission</th>
</tr>
</thead>
</table>
| Lassa   | • Identified in 1969 in Nigeria  
  • Lassa fever is endemic in West African countries between Nigeria and Senegal. There are estimated 100,000-300,000 annual infections in West Africa. Nosocomial outbreaks and endemic transmissions and more common during the dry season (January- April). Outbreaks have occurred in Sierra Leone, Guinea, Liberia, and Nigeria.  
  • Lassa fever occasionally imported to other countries through travel.                                                                                                                                 | multimmamate mouse/none | Inhalation of aerosols of rodent excreta  
  • Ingestion of food contaminated with rodent excreta  
  • Contact of rodents OR rodent excreta with open skin or mucous membranes  
  Person-to-person transmission via:  
  • Contact with infectious blood and bodily fluids  
  • Parenteral inoculation (unsterilized needles accidentally needlesticks)  
  • Airborne transmission (suspected)  
  • Exposure in laboratory |
| New World HF | • New World HF s (or South America HF) include Junin, Machupo Guanarito, and Sabia  
  • Reported cases of naturally occurring infections have occurred in South America: Argentina, Bolivia, Venezuela, Brazil  
  • An additional New World HF, Whitewater Arroyo, was isolated from 3 cases in California                                                                                                                        | rodents (mouse, wood rat)/none | |

For the latest PPE and isolation guidelines, refer to the CDC website at [www.cdc.gov](http://www.cdc.gov)
<table>
<thead>
<tr>
<th>virus</th>
<th>Disease</th>
<th>Transmission Routes</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bunyavirus</td>
<td>Rift Valley Fever</td>
<td>ruminants (sheep, cattle, goats, buffalo)/ mosquito</td>
<td>reported cases of naturally occurring infections have occurred in Sub-Saharan Africa, Egypt (1977-8, 1993), Kenya &amp; Somalia (1997-8), Saudi Arabia (2000-01), Yamen (2000-01), Tanzania (2006)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bite of an infected mosquito</td>
<td>Most outbreaks occurred in: o West Africa and Central Africa- in Savanna zones during the rainy season o Urban and Jungle regions of Sub-Saharan Africa o South America- forested areas of Bolivia, Brazil, Columbia, Ecuador, Peru, Venezuela, French Guiana, Guyana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Direct contact with infected animal tissue (ruminants)</td>
<td>Most outbreaks occurred in: o West Africa and Central Africa- in Savanna zones during the rainy season o Urban and Jungle regions of Sub-Saharan Africa o South America- forested areas of Bolivia, Brazil, Columbia, Ecuador, Peru, Venezuela, French Guiana, Guyana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation of aerosol from infected animal carcasses (ruminants)</td>
<td>Most outbreaks occurred in: o West Africa and Central Africa- in Savanna zones during the rainy season o Urban and Jungle regions of Sub-Saharan Africa o South America- forested areas of Bolivia, Brazil, Columbia, Ecuador, Peru, Venezuela, French Guiana, Guyana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transmission by ingestion of contaminated raw animal milk (suspected)</td>
<td>Most outbreaks occurred in: o West Africa and Central Africa- in Savanna zones during the rainy season o Urban and Jungle regions of Sub-Saharan Africa o South America- forested areas of Bolivia, Brazil, Columbia, Ecuador, Peru, Venezuela, French Guiana, Guyana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exposure laboratory</td>
<td>Most outbreaks occurred in: o West Africa and Central Africa- in Savanna zones during the rainy season o Urban and Jungle regions of Sub-Saharan Africa o South America- forested areas of Bolivia, Brazil, Columbia, Ecuador, Peru, Venezuela, French Guiana, Guyana</td>
</tr>
<tr>
<td>Flavivirus</td>
<td>Yellow Fever</td>
<td>Primate/ Aedes and Haemagogus mosquitoes</td>
<td>Yellow fever is endemic in Sub-Saharan Africa and tropical regions of South America (mostly in forested regions). From 2000-2004 there were 2570 cases reported in Africa and 629 in South America.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bite of an infected mosquito</td>
<td>Most outbreaks occurred in: o West Africa and Central Africa- in Savanna zones during the rainy season o Urban and Jungle regions of Sub-Saharan Africa o South America- forested areas of Bolivia, Brazil, Columbia, Ecuador, Peru, Venezuela, French Guiana, Guyana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exposure in laboratory</td>
<td>Most outbreaks occurred in: o West Africa and Central Africa- in Savanna zones during the rainy season o Urban and Jungle regions of Sub-Saharan Africa o South America- forested areas of Bolivia, Brazil, Columbia, Ecuador, Peru, Venezuela, French Guiana, Guyana</td>
</tr>
<tr>
<td>Kyasanur</td>
<td>Forest disease</td>
<td>Vertebrates/Tick</td>
<td>First identified in 1957 from a sick monkey from Kyasanur in the Karnataka State, India. Recently, a similar virus was discovered in Saudi Arabia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bite of an infected tick</td>
<td>Kyasanur Forest disease is only found in the Karnataka State in India, where 400-500 cases are reported annually.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation of aerosols by laboratory workers during cultivation of these viruses</td>
<td>Kyasanur Forest disease is only found in the Karnataka State in India, where 400-500 cases are reported annually.</td>
</tr>
<tr>
<td>Omsk HF</td>
<td></td>
<td>Bite of an infected tick</td>
<td>Omsk HF (O HF) was first identified in 1947 in OMSK, Russia. Epizootics began occurring in western Siberia among newly introduced muskrats ( for fur trade) and caused large outbreaks in humans from 1945-1958.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contact with blood, secretions, or tissue of an infected animal</td>
<td>Omsk HF (O HF) was first identified in 1947 in OMSK, Russia. Epizootics began occurring in western Siberia among newly introduced muskrats ( for fur trade) and caused large outbreaks in humans from 1945-1958.</td>
</tr>
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<td>Inhalation of aerosols by laboratory workers during cultivation of these viruses</td>
<td>Omsk HF (O HF) was first identified in 1947 in OMSK, Russia. Epizootics began occurring in western Siberia among newly introduced muskrats ( for fur trade) and caused large outbreaks in humans from 1945-1958.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ingestion of contaminated raw goat milk</td>
<td>Omsk HF (O HF) was first identified in 1947 in OMSK, Russia. Epizootics began occurring in western Siberia among newly introduced muskrats ( for fur trade) and caused large outbreaks in humans from 1945-1958.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Airborne (suspected)</td>
<td>Omsk HF (O HF) was first identified in 1947 in OMSK, Russia. Epizootics began occurring in western Siberia among newly introduced muskrats ( for fur trade) and caused large outbreaks in humans from 1945-1958.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>possibly water-borne/ tick</td>
<td>Omsk HF (O HF) was first identified in 1947 in OMSK, Russia. Epizootics began occurring in western Siberia among newly introduced muskrats ( for fur trade) and caused large outbreaks in humans from 1945-1958.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waterborne (suspected)</td>
<td>Omsk HF (O HF) was first identified in 1947 in OMSK, Russia. Epizootics began occurring in western Siberia among newly introduced muskrats ( for fur trade) and caused large outbreaks in humans from 1945-1958.</td>
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</tbody>
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For the latest PPE and isolation guidelines, refer to the CDC website at [www.cdc.gov](http://www.cdc.gov)
<table>
<thead>
<tr>
<th>Virus</th>
<th>United States Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ebola</td>
<td>Ebola- Reston virus has been introduced into quarantine by monkeys imported from the Philippines on three occasions. In two of the three incidents (1989, 1990), four humans were infected with Ebola- Reston but did not become ill (developed antibodies).</td>
</tr>
<tr>
<td>Marburg</td>
<td>NA</td>
</tr>
<tr>
<td>Lassa Fever</td>
<td>Lassa fever is rarely encountered in the United States. In 2004, a case of imported Lassa fever occurred in New Jersey residents who became infected while traveling in West Africa. None of the contacts of the patients developed any symptoms compatible with Lassa fever within the incubation period. This was the first reported case of Lassa fever imported into the United States 1989.</td>
</tr>
<tr>
<td>New World HF</td>
<td>Three cases of Whitewater Arroyo virus were reported in California in 1999-2000; all were fatal. Arroyo has been isolated from woodrats in North America, but these were the first reported cases of human disease.</td>
</tr>
<tr>
<td>Rift Valley virus</td>
<td>NA</td>
</tr>
<tr>
<td>Yellow Fever</td>
<td>Virus spread from West Africa to United States through slave trade vessels, cause significant outbreaks, including:</td>
</tr>
<tr>
<td></td>
<td>1. Philadelphia (1793)- 10% of population died</td>
</tr>
<tr>
<td></td>
<td>2. Mississippi (1878)- 100,000 cases</td>
</tr>
<tr>
<td></td>
<td>Yellow fever has been imported into the United States by non-immunized travelers to yellow fever endemic countries 3 times since 1925:</td>
</tr>
<tr>
<td></td>
<td>1. 1996 (Brazil to Tennessee)</td>
</tr>
<tr>
<td></td>
<td>2. 1999 (Venezuela to Marin County, CA)</td>
</tr>
<tr>
<td></td>
<td>3. 2002 (Brazil to Texas)</td>
</tr>
<tr>
<td></td>
<td>All cases were fatal</td>
</tr>
<tr>
<td>Kyasanur Forest disease virus</td>
<td>NA</td>
</tr>
<tr>
<td>Omsk HF</td>
<td>NA</td>
</tr>
</tbody>
</table>
HEALTHCARE PREPARATION FOR POTENTIAL VHF

Tiered approach to VHF preparedness

Preparing U.S. Hospitals for Ebola

CDC has developed a strategy to help healthcare facilities and state health officials prepare for patients with possible or confirmed Ebola. This strategy identifies which hospitals will provide different levels of care for patients being assessed and treated for Ebola.

Frontline Healthcare Facility
- Quickly identifies and isolates patients with possible Ebola
- Notifies facility infection control and state and local public health officials
- Has enough Ebola personal protective equipment (PPE) for at least 12-24 hours of care
- Prepares for patient transfer, if needed

Ebola Assessment Hospital
- Safely receives and isolates a patient with possible Ebola
- Provides immediate laboratory evaluation and coordinates Ebola testing
- Cases for a patient for up to 5 days (including evaluation and management of alternative diagnoses) until Ebola diagnosis is confirmed or ruled out
- Has enough Ebola PPE for up to 5 days of care

Ebola Treatment Center
- Safely receives and isolates a patient with confirmed Ebola
- Cases for patients with Ebola for duration of illness
- Has enough Ebola PPE for at least 7 days of care (will restock as needed)
- Has sustainable staffing plan to manage several weeks of care
- CDC Ebola Response Teams (CERTs) are ready to deploy to provide assistance as needed

All of the hospitals will be prepared to do the following:
- Ensure staff are appropriately trained and have documented competency in safe PPE practices
- Have systems in place to safely manage waste disposal, cleaning and disinfection
- Adhere to infection control protocols

In some cases, a hospital should be prepared to serve in more than one role. Hospitals may serve simultaneously as an Ebola assessment hospital and an Ebola treatment center. Patients may be transferred between facilities based on the state's plan.

For the latest PPE and isolation guidelines, refer to the CDC website at www.cdc.gov
Available at: https://www.cdc.gov/vhf/ebola/pdf/preparing-hospitals-ebola.pdf

No local VHF transmission
Confirmed cases in North America

Include the following in addition to ongoing preparedness activities:

**Access Control**
1. Healthcare facility leadership evaluates need for access control changes on an ongoing basis

**Vaccination**
1. Establish Employee Health / Occupational Medicine campaigns to educate hospital staff about current threat of disease and necessary vaccination as a preventive measure
2. Implement procedures which facilitate mass vaccination
3. Verify employee, contractor and LIP vaccination status per facility plan

**Surveillance, Screening and Triage**
1. Ensure laboratory has appropriate supplies and training for specimen collection. Consult with local LRN protocols.
2. Coordinate with local/state health department to obtain specific collection and shipping guidelines.
3. Implement heightened screening recommendations.

**Infection Control/Precautions**
1. Increase monitoring of compliance with Standard and Transmission Based Isolation precautions
2. Monitor Clinician Outreach and Communication Activity (COCA) calls from CDC & local/state emergency preparedness calls.
3. Initiate Transmission Based Isolation Precautions and a private room for any suspected case of VHF.
4. Monitor and report to administration status of functioning isolation room availability and supply levels.

**Communication (PIO)/Education**
1. Begin just-in-time training on recognizing symptoms
2. Re-emphasize hand hygiene practices and donning and removing Personal Protective Equipment (PPE)
3. Begin frequent messages to staff re: status of disease outbreak
4. Establish a referral system for patients and staff with questions (i.e., separate phone numbers or bank of numbers suggested)
5. Post staff awareness signs and notification of current visitation status for family and visitors
6. Educate staff how to collect required specimens
7. PIO and JIC to coordinate and communicate messaging to local media.

**Preparedness**
1. Input required information into WebEOC
2. Monitor WebEOC; provide needed information to hospital administration
3. Monitor stock levels and availability of Personal Protective Equipment (PPE), supplies and pharmaceuticals
4. Discuss with administration need for psychological support services for staff
WIDESPREAD HUMAN INFECTION
Local / State VHF cases
Confirmed local transmission
Community-Level Outbreaks in United States

Add the following to existing preparedness activities:

Access Control
1. Recommend to administration need to restrict facility entry
   a. Implement facility lockdown procedures when approved by administration
      i. Initially restrictions may be vendors, meeting participants, number of family members
         coming to facility, conferences cancelation
      ii. Severe restriction allow only
          1) Employees/LIP with a valid identification badge who are scheduled for duty
          2) Patients arriving by ambulance
          3) One parent with hospitalized child, but cannot come and go from the facility
          4) One adult may accompany an emergency room patient, but cannot come and go from
             the facility
          5) Patients who receive regular life sustaining treatments (i.e., dialysis, transfusion,
             chemotherapy, etc.)

2. Screen all individuals who enter the facility
3. Provide all individuals who clear screening with some form of verification allowing them to enter the
   facility (i.e. stamp their hand with date, pass, sticker, etc.)
4. Suspend all non-emergency surgeries, admissions, outpatient appointments and transfers at the
   direction of the local health authority
5. Suspend all on-site construction activities until further notice
6. Suspend all on-site student rotations
7. Physicians are notified of possible need to discharge all patients who are clinically able to be sent
   home as influx of respiratory cases increase sharply

Vaccination
1. Monitor levels of supplies for vaccination/prophylaxis-if necessary request any available supplies
   from regional caches or Strategic National Stockpile (SNS)
2. Follow health authority recommendations for vaccine/prophylaxis prioritization

For the latest PPE and isolation guidelines, refer to the CDC website at www.cdc.gov
**Surveillance Screening and Triage**
1. Screen all individuals who enter the facility for temperature and other symptoms using standardized questionnaire, e.g. VHF Screening Tool, Appendix 2-3
2. Continue collection of viral specimens according to local/state health department criteria if requested
3. Monitor (against baseline) number of patients presenting with related symptoms from Syndromic Surveillance. Report to Administration/Regional Medical Operation Center (RMOC) as required
4. Screen all personnel for fever and other symptoms at end of shift
5. Continue monitoring and reporting employee absences related to fever and other related symptoms
6. Monitor use of PPE for staff /LIP who are not vaccinated as indicated

**Infection Control/Precautions**
1. Advise hospital administration on the necessity for patient cohothing and implementation of separate units to accommodate influx of symptomatic patients
2. Reinforce meticulous hand hygiene, standard precautions, and related isolation precaution
3. Require all staff and authorized family members to wear identified protection continuously while in designated high risk areas; continuous compliance of isolation precautions.
   a. If conducting aerosol producing procedures, staff will adhere to CDC guidelines for isolation.
   b. Monitor and enforce PPE use as recommended by the CDC.
4. Keep administration informed of the status of vaccine/anti-viral levels and the prioritization for vaccine/prophylaxis distribution
5. Report all laboratory confirmed cases of disease to local/state health department as required
6. Monitor cases of disease and evaluate for Healthcare Acquired Infection (HAI)
7. Assess Infection Control measures if disease spread is occurring within the facility

**Communication (PIO)/Education**
1. Continue frequent messages to staff and administration regarding updated information from health authorities on the course of the disease
2. PIO communicate to local media any changes or updates of institutional policy and other information as approved by hospital/facility administration
3. Continue to post staff education signs as appropriate in and notification of current visitation status for family and visitors
4. Continue just-in-time training on recognition of symptoms for VHF Disease using Appendix 2-1, VHF Disease Algorithm

For the latest PPE and isolation guidelines, refer to the CDC website at [www.cdc.gov](http://www.cdc.gov)
5. Continue to reinforce required hand hygiene practices and donning and removing Personal Protective Equipment (PPE) using Appendix 2-2 as an information sheet for staff and visitors

**Preparedness**

1. Ensure mechanism to feed staff and patients is activated immediately if outside vendors begin to restrict services
2. Redeploy staff from areas where activities have been suspended or limited to other areas of need as determined by ICS
3. Implement psychological support services for staff
4. Implement corpse management as directed by health authorities
5. Continue input of required information into WebEOC
6. Continue to monitor WebEOC and provide needed information to hospital administration
APPENDIX 1

Appendix 1-1 Precautions for Communicable Diseases Overview

(Standard Precautions and Transmission-Based Precautions)

Appendix 1-2 Contact Precautions

Appendix 1-3 Droplet Precautions

Appendix 1-4 Airborne Precautions

Appendix 1-1

Precautions for Communicable Diseases Overview

(Standard Precautions and Transmission-Based Precautions)

Infection control guidelines include detailed procedures in accordance with a person’s expected contact with suspected cases and the known pathology of the disease. In cases of unknown or poorly understood agents, information about the pathology of disease transmission may be poorly understood and thus, determining appropriate level of infection control may be difficult. In these cases, medical and public health officials may choose to recommend the highest level of precaution to ensure safety until the pathology becomes clearer for update and re-issue of guidance as necessary. Thus, at the beginning of an outbreak, the highest level of protection may be initiated or recommended; as more is learned about the novel organism, the degree of protection may be lessened.

There are two tiers of CDC/ HICPAC precautions to prevent transmission of infectious agents, Standard Precautions and Transmission-Based Precautions. Standard Precautions are intended to be applied to the care of all patients in all healthcare settings, regardless of suspected or confirmed presence of an infectious agent. Implementation of Standard Precautions constitutes the primary strategy for the prevention of healthcare-associated transmission of infectious agents among patients and healthcare personnel. Transmission-Based Precautions are for patients who are known or suspected to be infected or colonized with infectious agents, including certain epidemiologically important pathogens, which require additional control measures to effectively prevent transmission. Since the infecting agent often is not known at time of admission to a healthcare facility, Transmission-Based Precautions are used empirically, according to the clinical syndrome and the likely etiologic agents at the time, and then modified when the pathogen is identified or a transmissible infectious etiology is ruled out.

Standard Precautions are based on the principle that all blood, body fluids, secretions, excretions except sweat, non-intact skin, and mucous membranes may contain transmissible infectious agents. Standard Precautions include a group of infection prevention practices that apply to all patients, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered. These include: hand hygiene; use of gloves, gown, mask, eye protection, or face shield, depending on the anticipated exposure; and safe injection practices. Also, equipment or items in the patient environment likely to have
been contaminated with infectious body fluids must be handled in a manner to prevent transmission of infectious agents (e.g. wear gloves for direct contact, contain heavily soiled equipment, properly clean and disinfect or sterilize reusable equipment before use on another patient). The application of Standard Precautions during patient care is determined by the nature of the HCW-patient interaction and the extent of anticipated blood, body fluid, or pathogen exposure. Standard Precautions are also intended to protect patients by ensuring that healthcare personnel do not carry infectious agents to patients on their hands or via equipment used during patient care. Standard Precautions also include: Respiratory Hygiene/Cough Etiquette, safe injection practices, and use of masks for insertion of catheters or injection of material into spinal or epidural spaces via lumbar puncture procedures.

Respiratory Hygiene/Cough Etiquette is targeted at patients and accompanying family members and friends with undiagnosed transmissible respiratory infections, and applies to any person with signs of illness including cough, congestion, rhinorrhea, or increased production of respiratory secretions when entering a healthcare facility. The elements of Respiratory Hygiene/Cough Etiquette include 1) education of healthcare facility staff, patients, and visitors; 2) posted signs, in language(s) appropriate to the population served, with instructions to patients and accompanying family members or friends; 3) source control measures (e.g., covering the mouth/nose with a tissue when coughing and prompt disposal of used tissues, using surgical masks on the coughing person when tolerated and appropriate); 4) hand hygiene after contact with respiratory secretions; and 5) spatial separation, ideally >3 feet, of persons with respiratory infections in common waiting areas when possible. Covering sneezes and coughs and placing masks on coughing patients are proven means of source containment that prevent infected persons from dispersing respiratory secretions into the air. Masking may be difficult in some settings, (e.g., pediatrics, in which case, the emphasis by necessity may be on cough etiquette). Healthcare personnel are advised to observe Droplet Precautions (i.e., wear a mask) and hand hygiene when examining and caring for patients with signs and symptoms of a respiratory infection. Healthcare personnel who have a respiratory infection are advised to avoid direct patient contact, especially with high risk patients. If this is not possible, then a mask should be worn while providing patient care.

Safe Injection Practices include the use of a sterile, single-use, disposable needle and syringe for each injection given and prevention of contamination of injection equipment and medication.

Special Lumbar Puncture Procedures include face mask for the individual placing a catheter or injecting material into the spinal or epidural space.
There are three categories of Transmission-Based Precautions: Contact Precautions, Droplet Precautions, and Airborne Precautions. Transmission-Based Precautions are used when the route(s) of transmission is (are) not completely interrupted using Standard Precautions alone. For some diseases that have multiple routes of transmission, more than one Transmission-Based Precautions category may be used. When used either singly or in combination, they are always used in addition to Standard Precautions.

**Syndromic and Empiric Applications of Transmission-Based Precautions:** Diagnosis of many infections requires laboratory confirmation. Since laboratory tests, especially those that depend on culture techniques, often require two or more days for completion, Transmission-Based Precautions must be implemented while test results are pending based on the clinical presentation and likely pathogens. Use of appropriate Transmission-Based Precautions at the time a patient develops symptoms or signs of transmissible infection, or arrives at a healthcare facility for care, reduces transmission opportunities. While it is not possible to identify prospectively all patients needing Transmission-Based Precautions, certain clinical syndromes and conditions carry a sufficiently high risk to warrant their use empirically while confirmatory tests are pending.
Appendix 1-2

Contact Precautions

Contact Precautions are intended to prevent transmission of infectious agents, including epidemiologically important microorganisms, which are spread by direct or indirect contact with the patient or the patient’s environment. Contact Precautions also apply where the presence of excessive wound drainage, fecal incontinence, or other discharges from the body suggest an increased potential for extensive environmental contamination and risk of transmission. A single-patient room is preferred for patients who require Contact Precautions. When a single-patient room is not available, consultation with infection control personnel is recommended to assess the various risks associated with other patient placement options (e.g., cohorting, keeping the patient with an existing roommate). In multi-patient rooms, >3 feet spatial separation between beds is advised to reduce opportunities for inadvertent sharing of items between the infected/colonized patient and other patients. Healthcare personnel caring for patients on Contact Precautions wear a gown and gloves for all interactions that may involve contact with the patient or potentially contaminated areas in the patient’s environment. Donning PPE (personal protective equipment) upon room entry and discarding before exiting the patient room is done to contain pathogens, especially those that have been implicated in transmission through environmental contamination (e.g., VRE, RSV, C. difficile, noroviruses and other intestinal tract pathogens).
Appendix 1-3

Droplet Precautions

Droplet Precautions are intended to prevent transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions. Because these pathogens do not remain infectious over long distances in a healthcare facility, special air handling and ventilation are not required to prevent droplet transmission. Infectious agents for which Droplet Precautions are indicated include: *B. pertussis*, influenza virus, adenovirus, rhinovirus, *N. meningitis*, and group A *Streptococcus* (for the first 24 hours of antimicrobial therapy), etc. A single patient room is preferred for patients who require Droplet Precautions. When a single-patient room is not available, consultation with infection control personnel is recommended to assess the various risks associated with other patient placement options (e.g., cohorting, keeping the patient with an existing roommate). Spatial separation of ≥3 feet and drawing the curtain between patient beds is especially important for patients in multi-bed rooms with infections transmitted by the droplet route. Healthcare personnel wear a mask (a respirator is not necessary) for close contact with infectious patient; the mask is generally donned upon room entry. Patients on Droplet Precautions who must be transported outside of the room should wear a mask if tolerated and follow Respiratory Hygiene/Cough Etiquette.
Appendix 1-4

Airborne Precautions

Airborne Precautions prevent transmission of infectious agents that remain infectious over long distances when suspended in the air (e.g., rubella virus [measles], varicella virus [chickenpox], *M. tuberculosis*, and possibly SARS-CoV). The preferred placement for patients who require Airborne Precautions is in an airborne infection isolation room (AIIR). An AIIR is a single-patient room that is equipped with special air handling and ventilation capacity that meet the American Institute of Architects/Facility Guidelines Institute (AIA/FGI) standards for AIIRs (i.e., monitored negative pressure relative to the surrounding area, 12 air exchanges per hour for new construction and renovation and 6 air exchanges per hour for existing facilities, air exhausted directly to the outside or recirculated through HEPA filtration before return). Some states require the availability of such rooms in hospitals, emergency departments, and nursing homes that care for patients with *M. tuberculosis*. A respiratory protection program that includes education about use of respirators, fit-testing, and user seal checks is required in any facility with AIIRs. In settings where Airborne Precautions cannot be implemented due to limited engineering resources, masking the patient, placing the patient in a private room (e.g., office examination room) with the door closed, and providing N95 or higher level respirators or masks if respirators are not available for healthcare personnel will reduce the likelihood of airborne transmission until the patient is either transferred to a facility with an AIIR or returned to the home environment, as deemed medically appropriate. Healthcare personnel caring for patients on Airborne Precautions wear a mask or respirator, depending on the disease-specific recommendations, that is donned prior to room entry. Whenever possible, non-immune HCWs should not care for patients with vaccine-preventable airborne diseases (e.g., measles, chickenpox, and smallpox).
APPENDIX 2

Appendix 2-1 Special Precautions for Emerging Pathogens

Appendix 2-2 Donning and Removing PPE (information sheet)

Appendix 2-3 Screening Tool (Questionnaire)

Appendix 2-4 Contact Information – VHF Readiness
Appendix 2-1 Special Precautions for Emerging Pathogens

Sample Signage

STOP
Check with Nurse Before Entering
VISITORS: Report to Nurse Before Entering

- Do not enter if you are ill or have an active infection.
- Keep doors closed.
- Use alcohol gel before and after patient contact.
- No fresh cut flowers.

VISITORS: Report to Nurse Before Entering

- Doors must be closed at all times.
- Negative pressure.
- Private room required.
- PAPR or N95 respirator required.
- Apply before entering and remove after exit.
- Use alcohol gel before and after patient contact.
- Restrict transport for essential purposes only.
- During transport use surgical mask on patient.

For the latest PPE and isolation guidelines, refer to the CDC website at www.cdc.gov
VISITORS: Report to Nurse Before Entering

Airborne & Contact Precautions

STOP
Before Entering

Airborne & Contact Precautions

- Gloves, Gown & Goggles required.
- Remove before leaving room.
- Doors must be closed at all times
- Negative pressure
- Private room required
- PAPR or N95 respirator required
- Apply before entering and remove after exit
- Use alcohol gel before and after patient contact
- Restrict transport for essential purposes only
- During transport use surgical mask on patient

VISITORS: Report to Nurse Before Entering

Contact Precautions

STOP
Before Entering

Contact Precautions

- Gloves and Gown required.
  Remove before leaving room.
- Use alcohol gel before and after patient contact
- Dedicate equipment to this patient.
- Disinfect after use
- Restrict transport for essential purposes.
- Patient to wear a new gown and wash hands with soap and water before leaving room.
- Inform receiving department of precautions.
- Disinfect wheelchair or stretcher after use.
VISITORS: Report to Nurse Before Entering

Contact Precautions

STOP
Before Entering

Contact Precautions

- Gloves and Gown required. Remove before leaving room.
- Use soap and water to wash hands before and after patient contact.
- Dedicate equipment to this patient.
- Disinfect after use.
- Restrict transport for essential purposes.
- Patient to wear a new gown and wash hands with soap and water before leaving room.
- Inform receiving department of precautions.
- Disinfect wheelchair or stretcher after use.

VISITORS: Report to Nurse Before Entering

Droplet Precautions

STOP
Before Entering

Droplet Precautions

- Surgical mask required.
- Use alcohol hand gel before and after patient contact.
- Restrict transport for essential purposes.
- Use surgical mask on patient during transport.
- Inform receiving department of precautions.
Algorithm to Assist with Testing and Monitoring of Patients with Suspected Viral Hemorrhagic Fever (VHF)

DSHS HSR 8 24/7 Contact Number: (210) 949-2121; SAMHD Contact Number (210) 207-8876

**Reception:** Patient enters ED or Clinic with Cough. If respiratory illness is of unknown etiology, evaluate based on criteria below:
1. Provide surgical mask, facial tissues, and hand sanitizer. Teach proper mask usages to patient or family member as appropriate for patient age/function level.
2. Isolate patient in separate waiting area when possible or place three feet from other patients
3. Implement standard, contact, and droplet precautions (gown, facemask, eye protection, and gloves)
4. Notify the hospital Infection Control Program and other appropriate staff
5. IMMEDIATELY report to the health department

**Fever (subjective or ≥100.4°F or 38.0°C)**

**Evaluation:**
Ask routine community acquired illness. Report patients with high risk exposure but no symptoms to health department

**Staff PPE:** Wear mask if patient is coughing or sneezing. Standard precautions.

**Exposure / Travel History**
• In the last 21 days prior to illness onset did the patient travel to an area or have contact with someone who traveled to an area documented or suspected viral hemorrhagic fever (i.e. Ebola)
• **High risk exposure:** Contact with blood (mucous membranes, percutaneous or intact skin) of a patient with suspected VHF, processing blood from suspect patients or contact with a dead body.
• **Low risk exposure:** household members or a patient with suspect VHF or healthcare workers at a facility with VHF

**Isolation Precautions**

Special Precautions for Emerging Pathogens
1. Place patient in single room with private bathroom and close door to the hallway
2. **Isolation precautions**
   - Standard: Hand Hygiene for Staff and Patients
   - Airborne: Staff wear N-95 respirator
   - Contact: Gowns, gloves and eye protection
   - Implement additional precautions per CDC recommendations (see appendix 2-2)
3. Notify health department

**For stable persons under investigation without bleeding, vomiting or diarrheas see:**

**For confirmed cases or PUI with vomiting, bleeding and diarrhea (Appendix 2-2B) see:**

**Immediate Notification To:**

1. **Internal – Infection Control POC:**
2. **Internal - Infectious Disease POC:**
3. **Hospital Administration:**
4. **Other:**
   - Infection Control Department will notify MEDCOM who will notify the Reporting Authority of suspect case.
   - Internal Communications need to connect to MEDCOM for coordination directions.
   - External Agency: MEDCOM 210-233-5815

**Initiate Diagnostic Evaluation:**
Blood and laboratory testing should be obtained by clinicians caring for the patient, and should be limited to those immediately necessary (i.e. CBC, chemistry, cultures, malaria testing), and should be performed at least under a certified class 2 BSC. CDC laboratory testing guidance: https://www.cdc.gov/vhf/ebola/healthcare-us/laboratories/safe-specimen-management.html

**Alternate Diagnosis Been Made?**
- **YES** - Airborne Precautions may be downgraded to Droplet Precautions or discontinued. Treat as indicated for disease process.
- **NO** - Continue Special Precautions as a presumptive VHF Case. Use Negative Airflow/Isolation Room as available.

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For the latest PPE and isolation guidelines, refer to the CDC website at www.cdc.gov
Appendix 2-2 Donning and Removing PPE

*(information sheet)*

Appendix 2-2A

PPE for stable persons under investigation without vomiting, diarrhea or bleeding.

Appendix 2-2B

PPE to be used for caring for Unstable persons under investigation or who have bleeding, vomiting or diarrhea, or confirmed Ebola cases.
Appendix 2-2A.

PPE for stable persons under investigation without vomiting, diarrhea or bleeding.


Providers should wear:

• Single-use (disposable) fluid-resistant gown that extends to at least mid-calf or single-use (disposable) fluid-resistant coveralls without integrated hood
• Single-use (disposable) full face shield
• Single-use (disposable) facemask
• Single-use (disposable) gloves with extended cuffs. Two pairs of gloves should be worn. At a minimum, outer gloves should have extended cuffs.


Donning PPE

This donning procedure applies to PPE recommended for evaluating and managing PUIs who are clinically stable and do not have bleeding, vomiting, or diarrhea. There is a lower risk of splashes and contamination in these situations. An established protocol, combined with proper training of the healthcare worker (HCW), helps to facilitate compliance with PPE guidance.

1. **Remove Personal Clothing and Items:** The HCW should wear surgical scrubs. No personal items (e.g., jewelry [including rings], watches, cell phones, pagers, pens) should be worn under PPE or brought into the patient room. Long hair should be tied back. Eye glasses should be secured with a tie.
2. **Inspect PPE Prior to Donning:** Visually inspect the PPE ensemble to ensure that it is in serviceable condition (e.g., not torn or ripped), that all required PPE and supplies are available, and that the sizes selected are correct for the HCW.
3. **Perform Hand Hygiene:** Perform hand hygiene with alcohol-based hand rub (ABHR). When using ABHR, allow hands to dry before moving to next step.
4. **Put on Inner Gloves**: Put on first pair of gloves.

5. **Put on Gown or Coverall**: Put on gown or coverall. Ensure gown or coverall is large enough to allow unrestricted movement. Ensure cuffs of inner gloves are tucked under the sleeve of the gown or coverall.

6. **Put on Facemask**: Put on face mask.

7. **Put on Outer Gloves**: Put on second pair of gloves (with extended cuffs). Ensure the cuffs are pulled over the sleeves of the gown or coverall.

8. **Put on Face Shield**: Put on full face shield over the surgical facemask to protect the eyes, as well as the front and sides of the face.

9. **Verify**: After completing the donning process, the integrity of the ensemble should be verified by the HCW (e.g., there should be no cuts or tears in the PPE). The HCW should be comfortable and able to extend the arms, bend at the waist, and go through a range of motions to ensure there is sufficient range of movement while all areas of the body remain covered. A mirror in the room can be useful for the HCW while donning PPE.

**Doffing**

**Doffing PPE** – PPE is doffed in the designated PPE removal area in the healthcare facility. As with all PPE doffing, meticulous care should be taken to avoid self-contamination. Place all PPE waste in a leak-proof infectious waste container([https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html](https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html)). (Accessed 10/20/17)

**Inspect**: Inspect the PPE for visible contamination, cuts, or tears before starting to remove. If any PPE is visibly contaminated, disinfect by using an *EPA-registered disinfectant wipe*. (Accessed 10/20/17) If the facility conditions permit and appropriate regulations are followed, an *EPA-registered disinfectant spray can be used, particularly on contaminated areas.*


2. **Inspect and Disinfect Inner Gloves**: Inspect the inner gloves’ outer surfaces for visible contamination, cuts, or tears. If an inner glove is visibly soiled, then disinfect the glove with either an *EPA-registered disinfectant wipe or ABHR*, remove the inner gloves, perform hand hygiene with ABHR on bare hands, and don a new pair of gloves. If a cut or tear is seen on an inner glove, immediately review occupational exposure risk per hospital protocol. If there is no visible contamination and no cuts or tears on the inner gloves, then disinfect the inner-gloved hands with either an *EPA-registered disinfectant wipe or ABHR.*
3. **Remove Face Shield**: Remove the full face shield by tilting the head slightly forward, grabbing the rear strap and pulling it over the head, gently allowing the face shield to fall forward. Avoid touching the front surface of the face shield. Discard the face shield into the designated leak-proof infectious waste container.

4. **Disinfect Inner Gloves**: Disinfect inner gloves with either an *EPA-registered disinfectant wipe or ABHR.

5. **Remove Gown or Coverall**: Remove and discard.
   a. Depending on gown design and location of fasteners, the HCW can either untie fasteners or gently break fasteners. Avoid contact of scrubs or disposable garments with outer surface of gown during removal. Pull gown away from body, rolling inside out and touching only the inside of the gown.
   b. To remove coverall, tilt head back to reach zipper or fasteners. Unzip or unfasten coverall completely before rolling down while turning inside out. Avoid contact of scrubs with outer surface of coverall during removal, touching only the inside of the coverall. Dispose of gown or coverall into the designated leak-proof infectious waste container(https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html). (Accessed 10/20/17)

6. **Disinfect and Change Inner Gloves**: Disinfect inner gloves with either an *EPA-registered disinfectant wipe or ABHR.
   a. Remove and discard gloves, taking care not to contaminate bare hands during removal process.
   b. Perform hand hygiene with ABHR.
   c. Don a new pair of inner gloves.

7. **Remove Surgical Facemask**: Remove the surgical facemask by tilting the head slightly forward, grasping first the bottom tie or elastic strap, then the top tie or elastic strap, and remove the front of the surgical facemask without touching it. Discard the surgical face mask into the designated leak-proof infectious waste container(https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html). (Accessed 10/20/17)

8. **Disinfect and Remove Inner Gloves**: Disinfect inner-gloved hands with either an *EPA-registered disinfectant wipe or ABHR. Remove and discard gloves, taking care not to contaminate bare hands during removal process. Dispose of inner gloves into the designated leak-proof infectious waste container(https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html). (Accessed 10/20/17)

9. **Perform Hand Hygiene**: Perform hand hygiene with ABHR.

10. **Inspect**: The HCW should inspect for any contamination of the surgical scrubs or disposable garments. If there is contamination, shower immediately, and then immediately inform the infection preventionist or occupational safety and health coordinator or their designee.

For the latest PPE and isolation guidelines, refer to the CDC website at [www.cdc.gov](http://www.cdc.gov)
Appendix 2-2B.

PPE to be used for caring for Unstable persons under investigation or who have bleeding, vomiting or diarrhea, or confirmed Ebola cases.

Information obtained from: CDC. Guidance on Personal Protective Equipment (PPE) To Be Used By Healthcare Workers during Management of Patients with Confirmed Ebola or Persons under Investigation (PUIs) for Ebola who are Clinically Unstable or Have Bleeding, Vomiting, or Diarrhea in U.S. Hospitals, Including Procedures for Donning and Doffing PPE.

Available at: https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html%20(Accessed 10/20/17)

The care of the patient with Ebola or VHF and infection prevention.

Healthcare workers caring for Ebola patients should have appropriate training, and infection control procedures. PPE covering all mucous membranes and skin is recommended, and should be supervised at all times by an onsite manager. They should be supervised when donning and doffing PPE to ensure compliance with the protocol. Those unwilling or unable to follow the infection control procedures should not care for these patients.

**Recommended PPE When Caring for a Patient with Confirmed Ebola or Unstable PUI**

- **Impermeable garment:**
  - Single-use (disposable) impermeable gown extending to at least mid-calf.
  - OR
  - Single-use (disposable) impermeable coverall. Coveralls without integrated hoods are preferred; coveralls with or without integrated socks are acceptable. Coveralls and gowns should be available in appropriate sizes so people with long arms are able to cover their forearms without gaps between gloves and sleeves when extending their arms to perform normal duties. Consider selecting gowns or coveralls with thumb hooks to the secure sleeves over the inner glove. Facilities that choose to tape gloves will need to ensure that the tape does not tear the gloves or gown/coverall during doffing and that sharp implements, such as scissors, are not needed to remove the tape. Experience in some facilities suggests that taping can increase risk by making the doffing process more difficult and cumbersome; however, other facilities have identified ways to optimize the use of tape and other adherent materials to anchor sleeves over inner gloves. **Scissors should never be used to remove tape or any other part of PPE.**

- **Respiratory Protection:** Either a PAPR or disposable, NIOSH-certified N95 respirator should be worn in case a potentially aerosol-generating procedure needs to performed emergently. PAPRs with a full-face...
covering and head-shroud make accidental self-contamination during care more difficult (e.g., while adjusting eyeglasses); disposable N95 face piece respirators are less cumbersome and can be easier to doff safely. Any respirator must be used in the context of a comprehensive, written respiratory protection program as required under OSHA Respiratory Protection Standard. (Accessed 10/20/17) 29 CFR 1910.134. This standard includes a hazard assessment to ensure appropriate respirator protection, fit testing, medical evaluation, and training of the worker. When required in the occupational setting, tight-fitting respirators cannot be used by people with facial hair that interferes with the face seal.

- **PAPR**: A hooded respirator with a full face shield, helmet, or headpiece. Any reusable helmet or headpiece must be covered with a single-use (disposable) hood that extends to the shoulders and fully covers the neck and is compatible with the selected PAPR. If a hood is used over the PAPR, it must not interfere with the function of the PAPR. The facility should follow manufacturer’s instructions for decontaminating reusable components and, on the basis of those instructions, develop facility protocols that include designating responsible personnel who ensure that the equipment is safely and appropriately reprocessed and that batteries are fully charged before reuse.
  - A PAPR with a self-contained filter and blower unit integrated inside the helmet can facilitate doffing.
  - A PAPR with external belt-mounted blower unit requires an additional doffing step, as described below.

- **N95 Respirator**: Single-use (disposable) N95 respirator or higher in combination with single-use (disposable) Surgical hood extending to shoulders and single-use (disposable) full face shield. If N95 respirators are used instead of PAPR, healthcare workers should be carefully observed to ensure that they do not inadvertently touch their faces under the face shield during patient care.

- **Single-use (disposable) examination gloves with extended cuffs**: Two pairs of gloves should be worn so that a heavily soiled outer glove can be safely removed and replaced during care. At a minimum, outer gloves should have extended cuffs. Double-gloving also allows potentially contaminated outer gloves to be removed during doffing to avoid self-contamination.

- **Single-use (disposable) boot covers** that extend to at least mid-calf. In addition, single-use (disposable) ankle-high shoe covers (“surgical booties”) worn over boot covers may be considered to facilitate the doffing process, reducing contamination of the floor in the doffing area thereby reducing contamination of underlying shoes. Although the use of shoe covers over boot covers may be analogous to using double gloves to ensure safe doffing, the risk of significant contamination to underlying shoes from the floor during the doffing process is very low relative to the risk of gloved hand contamination. Thus, facilities may consider methods other than shoe covers worn over boot covers to facilitate doffing of footwear including, most importantly,
frequent cleaning of the floor in the doffing area. Boot and shoe covers (if the latter are used) should allow for ease of movement and must not present a slip hazard to the wearer.

- **Single-use (disposable) shoe covers** are acceptable only if they will be used in combination with a coverall with integrated socks.

- **Single-use (disposable) apron** that covers the torso to the level of the mid-calf should be used over the gown or coveralls if patients with Ebola are vomiting or have diarrhea, and should be used routinely if the facility is using a coverall that has an exposed, unprotected zipper in the front. An apron provides additional protection, reducing the contamination of gowns or coveralls by body fluids and providing a way to quickly remove a soiled outer layer during patient care. Select an apron with a neck strap that can be easily broken or untied to avoid having to pull the strap over the head, which makes it easier to remove without self-contamination when exchanging a soiled apron during care or when removing the apron during the doffing procedure.

### Minimal requirements for PPE in unstable PUI, patients with diarrhea, vomiting or bleeding or confirmed Ebola cases.

- **Impermeable garment:** Single-use (disposable) impermeable gown extending to at least mid-calf.
  OR Single-use (disposable) impermeable coverall

- **Respiratory Protection:** Either a PAPR or disposable, NIOSH-certified N95 respirator

- **Single-use (disposable) examination gloves with extended cuffs (2 pairs)**

- **Single-use (disposable) boot covers**

- **Single-use (disposable) apron** that covers the torso to the level of the mid-calf should be used over the gown or coveralls if patients with Ebola are vomiting or have diarrhea, and should be used routinely if the facility is using a coverall that has an exposed, unprotected zipper in the front.

### Recommended Sequences for Donning and Doffing PPE

#### Donning PPE, PAPR Option

**Donning PPE, PAPR Option** – This donning procedure assumes the facility has elected to use PAPRs. An established protocol facilitates training and compliance. A trained observer should verify compliance with the protocol.

1. **Engage Trained Observer:** The donning process is guided and supervised by a trained observer, who confirms visually that all PPE is serviceable and has been donned successfully. The trained observer should
use a written checklist to guide and confirm each step in donning PPE and can verify the integrity of the ensemble. No exposed clothing, skin or hair of the healthcare worker should be visible at the conclusion of the donning process.

2. **Remove Personal Clothing and Items:** Change into surgical scrubs (or disposable garments) and dedicated washable (plastic or rubber) footwear in a suitable clean area. No personal items (e.g., jewelry including rings, watches, cell phones, pagers, pens) should be brought into the patient room. Long hair should be tied back. Eye glasses should be secured with a tie.

3. **Inspect PPE Before Donning:** Visually inspect the PPE ensemble to be worn to ensure that it is in serviceable condition, all required PPE and supplies are available, and the sizes selected are correct for the healthcare worker. The trained observer should review the donning sequence with the healthcare worker before the donning process and read it aloud to the healthcare worker in a step-by-step fashion.

4. **Put on Boot Covers:** If a coverall without integrated socks is worn, the upper band of the boot cover will be worn UNDER the pants leg of the coverall to prevent pooling of liquids between the coverall pants leg and upper band of boot cover. This step can be omitted if wearing a coverall with integrated socks.

5. **Put on Inner Gloves:** Put on first pair of gloves.

6. **Put on Gown or Coverall:** Put on gown or coverall. Ensure gown or coverall is large enough to allow unrestricted freedom of movement. Ensure cuffs of inner gloves are tucked under the sleeve of the gown or coverall.
   a. If a PAPR with a self-contained filter and blower unit that is integrated inside the helmet is used, then the belt and battery unit must be put on before donning the impermeable gown or coverall so that the belt and battery unit are contained under the gown or coverall.
   b. If a PAPR with external belt-mounted blower is used, then the blower and tubing must be on the outside of gown or coverall to ensure proper airflow.

7. **Put on Outer Gloves:** Put on second pair of gloves (with extended cuffs). Ensure the cuffs are pulled over the sleeves of the gown or coverall.

8. **Put on Respirator:** Put on PAPR with a full face-shield, helmet, or headpiece.
   a. If a PAPR with a self-contained filter and blower unit integrated inside the helmet is used, then a single-use (disposable) hood that extends to the shoulders and fully covers the neck must also be used. Be sure that the hood covers all of the hair and the ears, and that it extends past the neck to the shoulders.
   b. If a PAPR with external belt-mounted blower unit and attached reusable headpiece is used, then a single-use (disposable) hood that extends to the shoulders and fully covers the neck must also be used. Ensure that the hood covers all of the hair and the ears and it extends past the neck to the shoulders.

9. **Put on Outer Apron (if used):** Put on a disposable apron to provide an additional layer for the front of the body.

For the latest PPE and isolation guidelines, refer to the CDC website at [www.cdc.gov](http://www.cdc.gov)
10. **Verify**: After completing the donning process, the trained observer should verify the integrity of the ensemble. The healthcare worker should be able to extend the arms, bend at the waist, and go through a range of motion sufficient for patient care delivery while all remaining correctly covered. A mirror in the room can be useful for the healthcare worker while donning PPE.

**Doffing PPE, PAPR Option**

**Doffing PPE, PAPR Option** – PPE should be doffed in the designated PPE removal area. Place all PPE waste in a leak-proof infectious waste container ([https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html](https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html)).

(Accessed 10/20/17)

1. **Engage Trained Observer**: The doffing process should be supervised by the trained observer, who reads aloud each step of the procedure and confirms visually that the PPE is removed properly. Before the healthcare worker doffs PPE, the trained observer should coach and remind the healthcare worker to avoid reflexive actions that may put them at risk, such as touching their face. Post this instruction and repeat it verbally during doffing.

2. **Inspect**: Inspect the PPE to assess for visible contamination, cuts, or tears before starting to remove. If any PPE is visibly contaminated, then clean and disinfect using an [EPA-registered disinfectant wipe](https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/hospitals.html). (Accessed 10/20/17)

3. **Disinfect Outer Gloves**: Disinfect outer-gloved hands with either an *EPA-registered disinfectant wipe* or ABHR, and allow to dry.

4. **Remove Apron (if used)**: Remove (e.g., by breaking or untying neck strap and releasing waist ties) and roll the apron away from you, containing the soiled outer surface as you roll; discard apron taking care to avoid contaminating gloves or other surfaces.

5. **Inspect**: After removing the apron, inspect the PPE ensemble for visible contamination or cuts or tears. If visibly contaminated, then clean and disinfect affected areas using an *EPA-registered disinfectant wipe*.

6. **Disinfect and Remove Outer Gloves**: Disinfect outer-gloved hands with either an *EPA-registered disinfectant wipe* or ABHR. Remove and discard outer gloves, taking care not to contaminate inner glove during removal process.

7. **Inspect and Disinfect Inner Gloves**: Inspect the inner gloves’ outer surfaces for visible contamination, cuts, or tears. If an inner glove is visibly soiled, then disinfect the glove with either an *EPA-registered disinfectant wipe* or ABHR, remove the inner gloves, perform hand hygiene with ABHR on bare hands, and don a new pair of gloves. If no visible contamination is identified on the inner gloves, then disinfect the inner-gloves
with either an *EPA-registered disinfectant wipe or ABHR. If a cut or tear is detected on an inner glove, immediately review occupational exposure risk per hospital protocol.

8. **Remove Respirator with External Belt-Mounted Blower:** Remove the headpiece. The healthcare worker may need help removing the headpiece while still connected to the belt-mounted blower and filter unit. (Note: If a PAPR with a self-contained blower in the helmet is used, wait until step 14 to remove components.)
   a. Remove the belt-mounted blower unit and place all reusable PAPR components in an area or container designated for the collection of PAPR components for disinfection.
   b. Disinfect inner gloves with either an *EPA-registered disinfectant wipe or ABHR.

9. **Remove Gown or Coverall:** Remove and discard.
   a. Depending on gown design and location of fasteners, the healthcare worker can either untie fasteners, have the doffing assistant or “buddy” unfasten the gown, or gently break fasteners. Avoid contact of scrubs or disposable garments with outer surface of gown during removal. Pull gown away from body, rolling inside out and touching only the inside of the gown.
   b. To remove coverall, tilt head back and reach zipper or fasteners. Use a mirror to avoid contaminating skin or inner garments. Unzip or unfasten coverall completely before rolling down and turning inside out. Avoid contact of scrubs with outer surface of coverall during removal, touching only the inside of the coverall.

10. **Disinfect Inner Gloves:** Disinfect inner gloves with either an *EPA-registered disinfectant wipe or ABHR.

11. **Remove Boot Covers:** Sitting on a new clean surface (e.g., second clean chair, clean side of a bench) pull off boot covers, taking care not to contaminate pants legs.

12. **Disinfect Washable Shoes:** Use an *EPA-registered disinfectant wipe to wipe down every external surface of the washable shoes.

13. **Disinfect Inner Gloves:** Disinfect inner gloves with either an *EPA-registered disinfectant wipe or ABHR.

14. **Remove Respirator (if not already removed):** If a PAPR with a self-contained blower in the helmet is used, remove all remaining components here.
   a. Remove and discard disposable hood.
   b. Disinfect inner gloves with either an *EPA-registered disinfectant wipe or ABHR.
   c. Remove helmet and the belt and battery unit. The healthcare worker may need help removing the PAPR.
   d. Place all reusable PAPR components in an area or container designated to collect PAPR components for disinfection.

15. **Disinfect and Remove Inner Gloves:** Disinfect inner-gloved hands with either an *EPA-registered disinfectant wipe or ABHR. Remove and discard gloves, taking care not to contaminate bare hands during removal process.

16. **Perform Hand Hygiene:** Perform hand hygiene with ABHR.
17. **Inspect**: Both the trained observer and the healthcare worker perform a final inspection of the healthcare worker for contamination of surgical scrubs or disposable garments. If contamination is identified, the garments should be carefully removed and the wearer should shower immediately. The trained observer should immediately inform the infection preventionist or occupational safety and health coordinator or their designee for appropriate occupational health follow-up.

18. **Scrubs**: Healthcare worker can leave the PPE removal area wearing dedicated washable footwear and surgical scrubs or disposable garments, proceeding directly to showering area where these are removed.

19. **Protocol Evaluation/Medical Assessment**: Either the infection preventionist or occupational safety and health coordinator or their designee should meet with each healthcare worker on a regular basis to review the patient care activities performed, identify any concerns about care protocols and record the healthcare worker’s level of fatigue.

### Donning PPE, N95 Respirator Option

**Donning PPE, N95 Respirator Option** – This donning procedure assumes the facility has elected to use N95 respirators. An established protocol facilitates training and compliance. Use a trained observer to verify successful compliance with the protocol.

1. **Engage Trained Observer**: The donning process is guided and supervised by a trained observer who confirms visually that all PPE is serviceable and has been donned successfully. The trained observer should use a written checklist to confirm each step in donning PPE and verify the integrity of the ensemble. No exposed clothing, skin or hair of the healthcare worker should be visible at the end of the donning process.

2. **Remove Personal Clothing and Items**: Change into surgical scrubs (or disposable garments) and dedicated washable (plastic or rubber) footwear in a suitable, clean area. No personal items (e.g., jewelry including rings, watches, cell phones, pagers, pens) should be brought into patient room. Long hair should be tied back. Eye glasses should be secured with a tie.

3. **Inspect PPE Before Donning**: Visually inspect the PPE ensemble to be worn to ensure it is in serviceable condition, all required PPE and supplies are available, and the sizes selected are correct for the healthcare worker. The trained observer should review the donning sequence with the healthcare worker before donning begins and read it aloud during donning in a step-by-step fashion.

4. **Put on Boot Covers**: If a coverall without integrated socks is worn, the upper band of the boot cover will be worn UNDER the pants leg of the coverall to prevent pooling of liquids between the coverall pants leg and upper band of boot cover. This step can be omitted if wearing a coverall with integrated socks.

5. **Put on Inner Gloves**: Put on first pair of gloves.
6. **Put on Gown or Coverall:** Put on gown or coverall. Ensure gown or coverall is large enough to allow unrestricted freedom of movement. Ensure cuffs of inner gloves are tucked under the sleeve of the gown or coverall.

7. **Put on N95 Respirator:** Put on N95 respirator. Complete a user seal check.

8. **Put on Surgical Hood:** Over the N95 respirator, place a surgical hood that covers all of the hair and the ears, and extends past the neck to the shoulders. Ensure that hood completely covers the ears and neck.

9. **Put on Outer Apron (if used):** Put on a disposable apron to provide an additional layer for the front of the body.

10. **Put on Outer Gloves:** Put on second pair of gloves (with extended cuffs). Ensure the cuffs are pulled over the sleeves of the gown or coverall.

11. **Put on Face Shield:** Put on full face shield over the N95 respirator and surgical hood to protect the eyes, as well as front and sides of the face.

12. **Verify:** After completing the donning process, the trained observer should verify the integrity of the ensemble. The healthcare worker should be able to extend the arms, bend at the waist, and go through a range of motion sufficient for patient care delivery while all remaining correctly covered. A mirror in the room can be useful for the healthcare worker while donning PPE.

### Doffing PPE, N95 Respirator Option

**Doffing PPE, N95 Respirator Option** – PPE should be doffed in the designated PPE removal area. Place all PPE waste in a leak-proof infectious waste container([https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/waste-management.html](https://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/waste-management.html)). (Accessed 10/20/17)

1. **Engage Trained Observer:** The doffing process should be supervised by the trained observer, who reads aloud each step of the procedure and confirms visually that the PPE has been removed properly. Before doffing PPE, the trained observer must remind healthcare workers to avoid reflexive actions that may put them at risk, such as touching their face. Post this instruction and repeat it verbally during doffing.

2. **Inspect:** Inspect the PPE to assess for visible contamination, cuts, or tears before starting to remove. If any PPE is visibly contaminated, then disinfect using an *EPA-registered disinfectant wipe*.

3. **Disinfect Outer Gloves:** Disinfect outer-gloved hands with either an *EPA-registered disinfectant wipe* or ABHR.

4. **Remove Apron (if used):** Remove (e.g., by breaking or untying neck strap and releasing waist ties) and roll the apron away from you, containing the soiled outer surface as you roll; discard apron taking care to avoid contaminating gloves or other surfaces.
5. **Inspect**: After removing the apron, inspect the PPE ensemble for visible contamination or cuts or tears. If visibly contaminated, then clean and disinfect any affected areas by using an *EPA-registered disinfectant wipe*.

6. **Disinfect and Remove Outer Gloves**: Disinfect outer-gloved hands with either an *EPA-registered disinfectant wipe* or ABHR. Remove and discard outer gloves, taking care not to contaminate inner gloves during removal process.

7. **Inspect and Disinfect Inner Gloves**: Inspect the inner gloves’ outer surfaces for visible contamination, cuts, or tears. If an inner glove is visibly soiled, then disinfect the glove with either an *EPA-registered disinfectant wipe* or ABHR, remove the inner gloves, perform hand hygiene with ABHR on bare hands, and don a new pair of gloves. If no visible contamination is identified on the inner gloves, then disinfect the inner-gloved hands with either an *EPA-registered disinfectant wipe* or ABHR. If a cut or tear is detected on an inner glove, immediately review occupational exposure risk per hospital protocol.

8. **Remove Face Shield**: Remove the full-face shield by tilting the head slightly forward, grasping the rear strap and pulling it gently over the head and allowing the face shield to fall forward, then discard. Care must be taken not to touch the face when removing the face shield. Avoid touching the front surface of the face shield.

9. **Disinfect Inner Gloves**: Disinfect inner gloves with either an *EPA-registered disinfectant wipe* or ABHR.

10. **Remove Surgical Hood**: Unfasten (if applicable) surgical hood, gently remove, and discard. The doffing assistant or “buddy” can assist with unfastening hood.

11. **Disinfect Inner Gloves**: Disinfect inner gloves with either an *EPA-registered disinfectant wipe* or ABHR.

12. **Remove Gown or Coverall**: Remove and discard.
   a. Depending on gown design and location of fasteners, the healthcare worker can untie fasteners, have the doffing assistant or “buddy” unfasten the gown, or gently break fasteners. Avoid contact of scrubs or disposable garments with outer surface of gown during removal. Pull gown away from body, rolling inside out and touching only the inside of the gown.
   b. To remove coverall, tilt head back to reach zipper or fasteners. Unzip or unfasten coverall completely before rolling down and turning inside out. Avoid contact of scrubs with outer surface of coverall during removal, touching only the inside of the coverall.

13. **Disinfect Inner Gloves**: Disinfect inner gloves with either an *EPA-registered disinfectant wipe* or ABHR.

14. **Remove Boot Covers**: Sitting on a clean surface (e.g., second clean chair or clean side of a bench) pull off boot covers, taking care not to contaminate scrubs pants legs.

15. **Disinfect and Change Inner Gloves**: Disinfect inner gloves with either an *EPA-registered disinfectant wipe* or ABHR.
   a. Remove and discard gloves taking care not to contaminate bare hands during removal process.
   b. Perform hand hygiene with ABHR.
c. Don a new pair of inner gloves.

16. **Remove N95 Respirator:** Remove the N95 respirator by tilting the head slightly forward, grasping first the bottom tie or elastic strap, then the top tie or elastic strap, and remove without touching the front of the N95 respirator. Discard N95 respirator.

17. **Disinfect Inner Gloves:** Disinfect inner gloves with either an [*EPA-registered disinfectant wipe*](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/equipment.html) or ABHR.

18. **Disinfect Washable Shoes:** Use an [*EPA-registered disinfectant wipe*](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/equipment.html) to wipe down every external surface of the washable shoes.

19. **Disinfect and Remove Inner Gloves:** Disinfect inner-gloved hands with either an [*EPA-registered disinfectant wipe*](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/equipment.html) or ABHR. Remove and discard gloves taking care not to contaminate bare hands during removal process.

20. **Perform Hand Hygiene:** Perform hand hygiene with ABHR.

21. **Inspect:** Both the trained observer and the healthcare worker perform a final inspection of healthcare worker for contamination of the surgical scrubs or disposable garments. If contamination is identified, the garments should be carefully removed and the wearer should shower immediately. The trained observer should immediately inform infection preventionist or occupational safety and health coordinator or their designee.

22. **Scrubs:** Healthcare worker can leave PPE removal area wearing dedicated washable footwear and surgical scrubs or disposable garments, proceeding directly to showering area where these are removed.

23. **Protocol Evaluation/Medical Assessment:** Either the infection preventionist or occupational health safety and health coordinator or their designee should meet with the healthcare worker on a regular basis to review the patient care activities performed, identify any concerns about care protocols, and record healthcare worker’s level of fatigue.

*For additional or higher grade guidelines, refer to [www.cdc.gov](http://www.cdc.gov) for the most current CDC Guidelines for PPE; [http://www.cdc.gov/vhf/ebola/hcp/ppe-training/equipment.html](http://www.cdc.gov/vhf/ebola/hcp/ppe-training/equipment.html). (Accessed 10/20/17)*
Preparing for Doffing

The purpose of this step is to prepare for the removal of PPE.

1. Verify that the trained observer is available in the PPE removal area before entering and beginning the removal process. Some facilities, especially those using PAPRs, might find it helpful to have a designated assistant to help with doffing. An assistant who is only assisting in doffing should wear the same PPE as the trained observer. If the doffing assistant is entering the patient’s room (e.g., as a clinician), the assistant should wear the same PPE as other personnel entering the patient’s room. The observer should not touch the person who is doffing and should not serve as the doffing assistant or “buddy.” A mirror in the room can be useful for the healthcare worker while doffing PPE.

2. The doffing area should be separated into areas where early and later steps of doffing are conducted (e.g., separate chairs or ends of a bench).

3. Before entering the PPE removal area, look for, clean, and disinfect (using an *EPA-registered disinfectant wipe) visible contamination on the PPE.

4. As a final step before doffing, disinfect outer-gloved hands with either an *EPA-registered disinfectant wipe or ABHR, and allow to dry.
Appendix 2-3: Screening Tool (Questionnaire pg. 1)

Ebola Virus Disease Screening Questionnaire Template as of 09NOV2014

Name: ______________________ Date of Birth: ______________________
Email: ______________________ Phone: ______________________

Privacy Act Statement on reverse side

1. In the previous 21 days, has the individual resided or traveled to any of the following countries in West Africa: Liberia, Sierra Leone, Guinea, or any region where Ebola Virus Disease (EVD) transmission is active?  ☐ Yes ☐ No  If yes, location: ______________________ Dates of travel: ______________________

2. In the previous 21 days, has the individual had contact with a patient known or suspected to have EVD?  ☐ Yes ☐ No

If the answer to question 1 AND 2 is NO, the individual has No Identifiable Risk of EVD

If the answer to question 1 OR 2 is YES, answer the following questions to assess Risk of Exposure:

<table>
<thead>
<tr>
<th>SOME RISK OF EXPOSURE: within the past 21 days, has the individual:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Had close contact* with an EVD patient?  ☐ Yes ☐ No</td>
</tr>
<tr>
<td>4. Provided patient care or close contact without high-risk exposure with EVD patients in healthcare facilities in EVD outbreak affected countries?  ☐ Yes ☐ No</td>
</tr>
<tr>
<td>5. Handled, butchered, or consumed dead primates, bats, rodents, or other wild animals in the previous 21 days where EVD transmission is active?  ☐ Yes ☐ No</td>
</tr>
<tr>
<td>6. Has the individual worked or spent time in a mine/cave inhabited by bat colonies in the previous 21 days where EVD transmission is active?  ☐ Yes ☐ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HIGH RISK OF EXPOSURE: within the past 21 days, has the individual:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Had a percutaneous, e.g. needle stick, or mucous membrane exposure to body fluids of an EVD patient?  ☐ Yes ☐ No</td>
</tr>
<tr>
<td>8. Provided direct care of an EVD patient or exposure to body fluids without appropriate personal protective equipment (PPE) or with a breach in PPE?  ☐ Yes ☐ No</td>
</tr>
<tr>
<td>9. Performed laboratory work processing body fluids of confirmed EVD patients without appropriate PPE or standard biosafety precautions or with a breach in PPE?  ☐ Yes ☐ No</td>
</tr>
<tr>
<td>10. Participated in funeral rites or had other direct exposure to human remains in the geographic area where EVD transmission is active without appropriate PPE?  ☐ Yes ☐ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CLINICAL SYMPTOMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Does the patient show any of the following symptoms? Mark all that apply.  ☐ Yes ☐ No</td>
</tr>
<tr>
<td>☐ Fever ≥100.4°F or subjective fever  Temp: _____°F/C  (Inquire about recent use of Tylenol, NSAIDs or other fever reducing meds)</td>
</tr>
</tbody>
</table>

Symptoms:
- Headache
- Joint and muscle ache
- Abdominal pain
- Weakness
- Diarrhea
- Vomiting
- Lack of appetite
- Rash
- Red eyes
- Bleeding
- Hiccups
- Cough
- Chest pain
- Difficulty breathing
- Difficulty swallowing
# Appendix 2-3: Screening Tool (Questionnaire pg. 2)

## Ebola Virus Disease Screening Questionnaire Template as of 09NOV2014

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Asymptomatic:</th>
<th>Symptomatic = Person Under Investigation with no known exposure</th>
</tr>
</thead>
</table>
| No known exposure (yes to question 1 or 2 only) | - Provide individual with EVD advisory  
- No commercial travel and controlled movement for 21 days after leaving Ebola area  
- Voluntary self-monitoring for fever and other symptoms for 21 days after leaving EVD-affected country | - Isolate and implement infection control precautions (droplet and contact)  
- Contact Infectious Disease or Preventive Medicine at MTF or Region, if not available at MTF  
- Admit to MTF or civilian hospital all patients with fever using infection control precautions until a diagnosis is determined, consider admitting patients without fever, but who have other symptoms that could be consistent with EVD |

<table>
<thead>
<tr>
<th>Some risk of exposure (yes to ≥1 of questions 3-5)</th>
<th>Asymptomatic:</th>
<th>Symptomatic = Person Under Investigation with Low Risk Exposure</th>
</tr>
</thead>
</table>
| - Provide individual with EVD advisory and thermometer and instruct to monitor twice daily for fever and other symptoms for 21 days after leaving EVD-affected country  
- No commercial travel and controlled movement for 21 days after leaving Ebola area | - Isolate and implement infection control precautions (droplet and contact)  
- Immediately contact Infectious Disease and Preventive Medicine at your MTF or Region, if not available locally  
- Admit to MTF or civilian hospital all patients with fever using infection control precautions until diagnosis is determined, consider admitting patients without fever, but who have other symptoms that could be consistent with EVD |

<table>
<thead>
<tr>
<th>High risk of exposure (yes to ≥1 of questions 7-10)</th>
<th>Asymptomatic:</th>
<th>Symptomatic = Person Under Investigation with High Risk Exposure</th>
</tr>
</thead>
</table>
| - Contact Infectious Diseases and Preventive Medicine immediately  
- Admit to a CDC EVD treatment facility or DoD MTF EVD treatment facility* | - Isolate and implement infection control precautions (droplet and contact)  
- Contact Infectious Disease and Preventive Medicine immediately  
- Admit to a CDC EVD treatment facility or DoD MTF EVD treatment facility |

### Reviewed By:
Provider Name (print): ____________________________  
Provider Signature: ____________________________

### Contact numbers:
- Public Health Nursing (PHN): __________________
- Preventive Medicine (PM): __________________
- Infectious Disease (ID): __________________

### Asymptomatic contacts of EVD cases:
MEDCOM recommends that asymptomatic individuals with high risk for exposure be admitted for observation at a CDC EVD treatment facility or DoD MTF designated as an EVD treatment facility (TBD pending NORTHCOM EXORD). Other asymptomatic contacts of EVD cases, should only be conditionally released, which includes self-monitoring of temperature twice daily and monitoring by the public health authority. Travel is permitted, but only with controlled movement for 21 days after last exposure to an EVD case.

### PRIVACY ACT STATEMENT

**AUTHORITY:** 10 U.S.C. Section 3013, Secretary of the Army; 10 U.S.C. 5013, Secretary of the Navy; 10 U.S.C. 8013, Secretary of the Air Force; DoD Directive 6490.02E, Comprehensive Health Surveillance; AR 40-5, Preventive Medicine.

**PRINCIPAL PURPOSE(S):** Used by medical authorities and others with a requirement to conduct screening to record the travel history, potential exposures and any symptoms of illness in a person who has possibly been exposed to Ebola, and to determine exposure risk category.

**ROUTINE USE(S):** The DoD “Blanket Routine Uses” that appear at the beginning of the Army’s compilation of systems of records apply to this system. Information may be disclosed to aid in preventive health and communicable disease control programs and report medical conditions to Federal, state and local agencies, required by law.

**DISCLOSURE:** Voluntary. However, failure to provide all the requested information may result in the improper treatment and care being administered to the patient.


(Accessed 10/26/17)
Appendix 2-4: Contact Information - VHF

Contact Information – VHF

1. Facility
   - Infection Prevention & Control Department and/or professional:
   ________________________________________________________________
   - Hospital Epidemiologist (if provided):
   ________________________________________________________________
   Infectious Disease Physician(s) on staff at facility:
   ________________________________________________________________
   - Chief of Staff / Medical Executive/ CMO/ Chief of Staff:
   ________________________________________________________________
   - After-hours administrative contact number:
   ________________________________________________________________

2. Health Department
   - San Antonio Metropolitan Health District: Emergency #: 210-207-8876
   - Region: 8; emergency # 210-949-2121 (24/7)
   - State: 512-776-7676

3. Lab
   - Local director: ________________________________________________
   - If no local lab, reference lab #: _________________________________

4. Communications/Public Relations/Marketing:
   ________________________________________________________________

Contact information is current as of October 20, 2017.