Viral Hemorrhagic Fever (Ebola)

1. DISEASE REPORTING

A. Legal Reporting Requirements

1. Health care providers and facilities: **immediately notifiable to local health jurisdiction**

2. Laboratories: **immediately notifiable to local health jurisdiction**; specimen submission requested – positive specimens (2 business days) (Sections 3 and 4).

3. Local health jurisdictions: **immediately notifiable to Washington State Department of Health (DOH) Office of Communicable Disease Epidemiology (CDE)**.

B. Local Health Jurisdiction Investigation Responsibilities

1. Immediately recommend infection control measures if agent is transmissible.

2. Immediately report all cases, potential cases and exposed persons to CDE: 1-877-539-4344 or 206-418-5500. Conduct a rapid assessment to determine whether bioterrorism is a possibility or if there is potential healthcare facility transmission.

3. Facilitate the transport of specimens for reference testing.

4. Determine the source of infection.

5. Identify other persons exposed and recommend monitoring as indicated.


2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent:

Agents of viral hemorrhagic fever include four main families of viruses (filoviruses, arenaviruses, bunyaviruses, flaviviruses). Well-known agents are Ebola, Marburg and dengue viruses (also see Hantavirus and Yellow Fever guidelines). Ebola is enveloped and susceptible to hospital-grade disinfectants but may remain viable in organic matter (e.g., blood) on surfaces for several days.

B. Description of Illness

Abrupt onset of initial nonspecific symptoms of fever, headache, muscle or joint aches, and anorexia. After about 5 days disease progresses to watery diarrhea, vomiting and abdominal pain; there may be sore throat, desquamating rash, seizures, miscarriage or hiccups. Damage to the liver, adrenal glands and spleen results in coagulopathy, hypotension, and impaired steroid synthesis. About half of cases have unexplained hemorrhage (petechiae, bruising, bleeding from mucous membranes or small injuries). Ebola viremia peaks around 5 days from onset, and most deaths occur at about 10 days. Up to 90% of Ebola cases are fatal due to multi-organ failure and shock, and convalescence is prolonged. Mortality is high during pregnancy. Laboratory findings include platelets < 150,000; elevated hepatic transaminases (AST > ALT); elevated amylase. Differential includes malaria, typhoid, dengue, yellow fever, West Nile,
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chikungunya, other tropical infections, influenza, and non-infectious illnesses such as leukemia. Note that some medications cause bleeding (e.g., Coumadin).

C. Viral Hemorrhagic Fever in Washington

Washington has had no cases. In September 2014 Ebola was diagnosed in Texas associated with a West Africa outbreak. Two healthcare workers were infected during care of that patient. Rare cases of Ebola, Lassa and Marburg fever acquired elsewhere and imported into this country have not had subsequent transmission.

D. Reservoir:

Animals such as bats or rodents are common viral reservoirs. Outbreaks include Marburg in Democratic Republic of Congo (formerly Zaire) and Angola; Ebola in the DRC (location of the Ebola River) and southern Sudan; and dengue in various countries.

E. Modes of Transmission

Direct transmission from reservoir or secondarily infected animals occurs rarely; bush meat may be a risk. Person-to-person transmission of filoviruses such as Ebola then occurs by direct contact with body fluids or excreta (blood, urine, diarrhea, vomit, semen, milk) including percutaneous injection or mucous membrane contamination. With Ebola, viremia starts with symptom onset, peaking at day 5. Ebola has spread by contact during funerals or handling human remains. There is no evidence of airborne spread in human Ebola outbreaks described to date. The viruses are potential agents of bioterrorism.

F. Incubation period

Incubation is 2-21 days, typically 3-10 days. The infectious dose is very low.

G. Period of Communicability

Body fluids and all excreta are infected from symptom onset, with very high virus levels within a few days. Fomites have not been shown to be a source of exposure but virus may persist for days in organic debris (e.g., dried blood) including on bedding or medical equipment. Urine and semen remain infectious for weeks after recovery.

H. Treatment

Supportive care to maintain volume, electrolytes, blood pressure, and oxygenation. Antiviral and experimental medications may be used when available.

3. CASE DEFINITIONS

A. Clinical description

Fever of greater than 38.6° C (101.5° F) for Ebola or greater than 40° C (104° F) for other agents of viral hemorrhagic fever (VHF) AND additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained internal or external hemorrhage, or as applicable symptom of another suspected VHF agent (low platelets, rash, for arenavirus pharyngitis, retrosternal chest pain, or proteinuria).

B. Epidemiologic risk factors

Ebola (or other communicable VHF): Within the 21 days before the onset of symptoms, having contact (including household, sexual, healthcare, and laboratory exposures) with
blood or other body fluids or human remains of a patient known or suspected to have Ebola virus disease (EVD); residence in—or travel to—an area where EVD transmission is active; or direct handling of bats, rodents, or primates (or bush meat) from any disease-endemic area.

Other VHF: Within the 21 days before the onset of symptoms, residence in—or travel to—an area where VHF transmission is active including bite from implicated insect.

C. Laboratory criteria for diagnosis

Any positive diagnostic evidence from a reference laboratory.

D. Case classification (2014)

*Person under Investigation (PUI) or Suspect:*

A person who has both consistent signs or symptoms and risk factors as follows:

1. Elevated body temperature or subjective fever or symptoms, including severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage;
   AND
2. An epidemiologic risk factor within the 21 days before the onset of symptoms including contact with an infected person: percutaneous, mucous membrane, laboratory processing, direct dead body contact, household, patient care, close or brief contact or proximity, residence or travel in affected area, travel on aircraft (See: http://www.cdc.gov/vhf/ebola/exposure/risk-factors-when-evaluating-person-for-exposure.html)

*Confirmed:* A PUI with laboratory-confirmed diagnostic evidence of VHF infection.

4. DIAGNOSIS AND LABORATORY SERVICES

A. Laboratory Diagnosis

Clinical suspicion based on symptoms and risk of exposure is the most critical element for diagnosis of viral hemorrhagic fever. Initial presentation is nonspecific and may resemble other tropical illnesses, so testing for malaria should be considered. Hemorrhagic signs may not occur.

Commercial testing is available for dengue fever and chikungunya virus.

Early in the illness diagnostic tests for Ebola are polymerase chain reaction (PCR), antigen-capture enzyme-linked immunosorbent assay (ELISA), IgM ELISA, and viral isolation. Later in the disease course IgM and IgG antibodies can be tested. Deceased patients can be retrospectively tested by immunohistochemistry, PCR, or virus isolation.

A negative RT-PCR test result for Ebola virus from a blood specimen collected less than 72 hours after onset of symptoms does not necessarily rule out Ebola virus infection. If the patient is still symptomatic after 72 hours, the test should be repeated. If the patient has recovered from the illness that brought them to medical attention, a repeat test is not required. A negative RT-PCR test result for Ebola virus from a blood specimen collected more than 72 hours after symptom onset rules out Ebola virus infection.
Ebola laboratory testing must be performed by a reference laboratory such as the Washington State Public Health Laboratories (PHL) or Centers for Disease Control and Prevention (CDC). PHL will test for Ebola only with CDC pre-approval.

B. Tests Available at the Washington State Public Health Laboratories (PHL)

PHL offer PCR testing to detect Ebola Zaire virus (2014 outbreak strain). Negative PCR results do not preclude Ebola Zaire virus infection and should not be used as the sole basis for patient management decisions, particularly early in the illness. Presumptive positive PCR results require additional confirmatory testing by the CDC. Prior to submitting specimens, obtain approval from Office of Communicable Disease Epidemiology (206-418-5500 or 877-539-4344). To be tested, the patient should meet one of the case classifications (see Section 3D).

Note that PHL require all clinical specimens have two patient identifiers, a name and a second identifier (e.g., date of birth) both on the specimen label and on the submission form. Due to laboratory accreditation standards, specimens will be rejected for testing if not properly identified. Also include specimen source and collection date.

C. Specimen Collection

Take specimens when a symptomatic patient is seen by a healthcare facility and is suspected of having an exposure to Ebola; if symptom onset is within 3 days, a subsequent specimen may be required to completely rule out Ebola virus disease. Autopsy and prior frozen specimens from affected organs are also acceptable.

Collect duplicate specimens of whole blood or plasma (2 EDTA purple top plastic tubes ≥ 4 ml each), refrigerate, transport cold. If specimens cannot be processed with 72 hours of collection, freeze at ≤ -70°C and ship on dry ice.


All specimens should be submitted to PHL with a completed Serology/Virology form: [http://www.doh.wa.gov/Portals/1/Documents/5230/302-017-SerVirHIV.pdf](http://www.doh.wa.gov/Portals/1/Documents/5230/302-017-SerVirHIV.pdf)

It is the shipper’s responsibility to correctly package and label specimens to meet shipping regulations. WAPHL can receive priority Ebola specimens 24/7. Prior arrangements must be made with the laboratory to properly receive these specimens.

Please follow these steps:

- Check that the transport tube cap is securely closed; place tube in Biohazard Ziploc bag with a piece of super absorbent paper (bag and absorbent paper supplied with each transport Kit) and seal in rigid container. Place container in a second Biohazard Ziploc bag.
- Complete WAPHL Virology Specimen Submission Form, including submitter name, address, and telephone/FAX numbers.
- Ensure patient’s name and second identifier are on specimen tube and match information on specimen submission form.
• Place completed WAPHL Virology Specimen Submission Form in pouch of OUTER Biohazard Ziploc bag (one specimen and one submission form per bag). Do not place any paperwork in the inner bag along with the vial.

• All specimens sent for Ebola testing must be packaged and shipped Category A according to USDOT and ICAO/IATA regulations

• Currently, there are two options for submitting suspect Ebola specimens to the WAPHL, FedEx and Private Couriers. The WAPHL does not have a courier system nor does it have the ability to pick up specimens. Note that specimens CONFIRMED to be Ebola WILL NOT be accepted by FedEx. Specimens sent to the WAPHL are suspected to contain Ebola and therefore will be accepted by FedEx if packaged and labeled properly.

• When completing the Shipper’s Declaration For Dangerous Goods form, the “Proper Shipping Name” field should read as follows, “suspected Category A infectious substance”. The Authorization code is A140.

• See the CDC website for additional testing information: http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen-collection-submission-patients-suspected-infection-ebola.html

• If transporting via private couriers all category A shipping regulations still apply.

• Projected time for Ebola testing: results will be telephoned within 6-8 hours of testing initiation at WAPHL. WAPHL will finalize all negative Ebola results; all presumptive positive results must have confirmatory testing performed at CDC. These results will be available up to five business days from specimen receipt. Positive Ebola virus RT-PCR results are presumptive until confirmed by CDC.

5. ROUTINE CASE INVESTIGATION

Viral hemorrhagic fever (VHF) agents are potential agents of bioterrorism. Immediately report any suspect VHF cases to Office of Communicable Disease Epidemiology (206-418-5500 or 877-539-4344). Also notify CDE of potentially exposed persons, such as travelers from an affected region or contacts of a case.

For the most recent Ebola information from Centers for Disease Control and Prevention check: http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/whats-new.html

Immediately interview the case, suspect or confirmed, and others such as family, friends, coworkers, or employer who may be able to provide pertinent information.

A. General Approach to Assessment

During an outbreak of VHF with widespread transmission and risk of cases occurring outside the outbreak area, such as during the 2014 Ebola outbreak in West Africa, triage and evaluation processes at healthcare facilities should systematically assess patients for the possibility of disease.

Identify travel and direct exposure history: lived in or traveled from a country with widespread VHF transmission or had contact with an individual with confirmed VHF in the previous 21 days. If no, continue usual assessment and care.

If the person reports a travel or direct exposure history, identify signs and symptoms:
fever (subjective or ≥ 38°C or 100.4°F) or any compatible symptom including fatigue, headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain, or hemorrhage.

If exposure and compatible symptoms are both present in a patient being medically evaluated, the patient may meet criteria for Person Under Investigation. The healthcare facility should:

- **Isolate the patient immediately.** Place patient in a private room. Require personal protective equipment if entering the room. Avoid unnecessary direct contact.

- **Notify the local health jurisdiction.**

- Evaluate the patient. Essential personnel with designated roles should evaluate the patient using personal protective equipment and dedicated equipment.

- An ambulatory care facility should coordinate with the local health jurisdiction to arrange EMS transport to a designated emergency department or hospital on a case by case basis.

- Arrange testing. Note that a negative RT-PCR on a specimen collected less than 72 hours from onset of symptoms should be repeated if there are still consistent symptoms after 72 hours.

A PUI may be discharged by a joint decision from the healthcare provider and the health jurisdiction if:

- The RT-PCR test for Ebola virus collected more than 72 hours after symptom onset is negative OR

- Symptoms have resolved (for fever, off antipyretics) or can be accounted for by another alternative diagnosis AND There are no unexplained laboratory results consistent with Ebola AND

- Monitoring can be completed.

After being discharged the person should be told where to seek health care if symptoms recur, and should complete the full 21-day monitoring period.

**B. Details for Evaluating the Diagnosis**

Compatible symptoms are fever (> 38.6°C or 101.5°F), severe headache, muscle pain, abdominal pain, vomiting, diarrhea, and in about half of patients unexplained hemorrhage (petechiae, bruising, oozing from cuts, mucosal bleeding). Gastrointestinal symptoms start around day 5 and there may also be a diffuse erythematous maculopapular rash that desquamates. Other symptoms may include sore throat, shortness of breath, chest pain, confusion, seizures, conjunctival injection, hiccups, or miscarriage.

Supportive laboratory findings include thrombocytopenia (platelets < 150,000) and elevated hepatic transaminases (AST > ALT). If disseminated intravascular coagulation develops, prothrombin (PT) and partial thromboplastin (PTT) times are prolonged. Leukopenia, elevated amylase, and proteinuria may occur.
Consider testing a febrile patient for malaria, the most common cause of fever in travelers returning from the affected region or, if indicated, other infections such as typhoid fever, other bacterial or parasitic cause of diarrhea, meningococcemia, or pneumonia.

C. Detailed Potential Sources of Infection

Identify potential sources in the prior 21 days, including travel to currently affected countries or previous endemic areas, or contact with a person having such travel.

Relative to the 2014 Ebola outbreak in West Africa:

High risk exposures:

- Percutaneous (e.g., needle stick) or mucous membrane exposure to blood or body fluids of a person with Ebola while the person was symptomatic,
- Exposure to the blood or body fluids (including but not limited to feces, saliva, sweat, urine, vomit, and semen) of a person with Ebola while the person was symptomatic without appropriate personal protective equipment (See: http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html)
- Processing blood or body fluids of a person with Ebola while the person was symptomatic without appropriate PPE or standard biosafety precautions,
- Direct contact with a dead body without appropriate PPE in a country with widespread Ebola virus transmission
- Having lived in the immediate household and provided direct care to a person with Ebola while the person was symptomatic

Exposures with some risk:

- In country with widespread Ebola transmission: direct contact while using appropriate PPE with a person with Ebola while the person was symptomatic
- Close contact in households, health care facilities, or community settings with a person with Ebola while the person was symptomatic (prolonged period of time while not wearing appropriate PPE within approximately 3 feet)

Exposures with low risk:

- Having been in a country with widespread Ebola transmission and having had no known exposures
- Having brief direct contact (e.g., shaking hands) while not wearing appropriate PPE, with a person with Ebola while the person was in the early stage of disease
- Brief proximity, such as being in the same room for a brief period of time, with a person with Ebola while the person was symptomatic
- In countries without widespread Ebola virus transmission: direct contact while using appropriate PPE with a person symptomatic with Ebola
- Traveled on an aircraft with a person with Ebola while the person was symptomatic

Exposures with no risk:

- Contact with an asymptomatic person who had contact with person with Ebola
• Contact with a person with Ebola before the person developed symptoms
• Was in a country with widespread Ebola transmission more than 21 days before
• Having been in a country without widespread Ebola virus transmission and not having any other exposures as defined above

D. Evaluate for testing

Laboratory testing for transmissible viral hemorrhagic fever such as Ebola must be performed by a reference laboratory such as the Washington State Public Health Laboratories (PHL) after approval from CDC. Facilitate transport of specimens to PHL for confirmatory testing (see Section 4). Include a full travel history with a request.

Testing for Ebola virus disease:

Ebola testing is recommended for the patients below but also consider testing for malaria or other tropical infections as indicated; optionally other patients may be tested if there is no other consistent diagnosis. Compatible symptoms are intense weakness, muscle pain, severe headache, vomiting, diarrhea, impaired kidney and liver function, and internal or external bleeding. Supportive abnormal blood work would include platelet count < 150,000 and AST/ALT elevation (may also be prolonged AT/ATT). After approval from the local health jurisdiction and Department of Health consultation with CDC, PHL will perform Ebola testing on specimens from persons being monitored due to any risk of exposure who develops either fever or consistent symptoms:

• Fever of greater than 38°C or 100.4°F
• Compatible symptoms (fever, severe headache, diarrhea, vomiting, muscle pain, abdominal pain, other symptoms considered compatible by a healthcare provider)
• Optional testing (consultation with local health jurisdiction) may be considered for other patients.

Testing for other agents of viral hemorrhagic fever:

Test as indicated by symptoms and exposure history for dengue or other agent of VHF. See Section 6 for discharging persons under investigation for Ebola virus disease.

E. Patient Management

Medical treatment of a case includes providing intravenous fluids (IV), balancing electrolytes, maintaining oxygen status and blood pressure, addressing organ failure (e.g., providing dialysis for kidney failure) and treating other infections if they occur. Consult with Centers for Disease Control and Prevention regarding experimental medications to treat Ebola virus disease. For transmissible agents, always follow strict infection control measures.

F. Infection Control/Case Management for Transmissible VHF Agents (e.g., Ebola)

1. Emergency departments, urgent care centers, and other healthcare facilities providing primary care should take a relevant exposure history immediately or if possible in advance of entrance. Ask if during the previous 21 days the patient resided in or traveled from a country with widespread Ebola transmission, or had contact with an Ebola case. If the patient cannot give a history, ask other sources (e.g., family or
EMS). Ask patients with an exposure about signs or symptoms compatible with Ebola virus disease (fever, headache, muscle pain, vomiting, diarrhea, abdominal pain, unexplained bleeding). If exposure and symptoms are present, follow hospital guidelines below.

2. The hospital should notify the hospital infection control program, other appropriate staff, and the local health department of a suspected Ebola virus patient or exposed person regardless of symptoms.

3. Hospitalized suspected Ebola virus disease or Ebola-exposed patients should be cared for in a single patient room (with a private bathroom) with the door closed, and transport within the facility minimized. The room should have a mattress and pillow with plastic covers that are impermeable to fluids. Do not use a carpeted room. Remove upholstered furniture and decorative curtains.

4. Log all persons entering the room and minimize staff authorized to enter. Avoid entry of visitors into the patient's room. Exceptions may be considered on a case by case basis for those who are essential for the patient's wellbeing.

5. Healthcare personnel must be trained in proper donning and removing of PPE before use in a clinical setting.

6. A site monitor should supervise all clinical care and the donning and removing of PPE to minimize infection control breaches; healthcare personnel should remove PPE items in the correct order and perform hand hygiene after removal of each piece of PPE.

7. Hospital care and environmental cleaning of Ebola virus disease patients require use of full barrier precautions or the highest level that is available for all personal protective equipment (PPE) including gloves, gown (fluid resistant or impermeable), eye protection (goggles or face shield), and facemask, at a minimum. See: http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html

8. If copious amounts of body fluids or excreta are present in the environment, require use of additional PPE including but not limited to double gloving, disposable shoe covers, and leg coverings. Use dedicated medical equipment, preferably disposable, and clean and disinfect any non-disposable equipment after use.

9. Limit use of needles and other sharps, and handle used sharps with extreme care when disposing of them in puncture-proof sealed containers.

10. Minimize laboratory testing, and notify the laboratory that incoming specimens are from a suspect or confirmed VHF case.

11. Minimize aerosol-generating procedures (AGP) for the patient. Conduct AGP with minimal required staff and no visitors present in an airborne infection isolation room (AIIR), if available. During AGPs, staff should use full barrier precautions including at least a fit-tested N95 filtering facepiece respirator. The AGP procedure should be followed by environmental cleaning of the room and equipment by trained staff using appropriate PPE (see items 7 and 8 above).

12. If inadvertent exposure occurs during patient care, staff should immediately wash or irrigate the affected area, report to employee health, be assessed for all appropriate
pathogens (e.g., HIV, HBV, HCV), and initiate monitoring (See Section 6 below).

13. Move patients between healthcare facilities only by medical transport capable of safely implementing infection control for Ebola.

14. After discharge, patient should be informed that urine and semen may contain virus for up to 60 days during convalescence. The discharged patient may use toilets with routine sewer disposal of bodily fluids.

15. Only personnel trained in handling infected human remains, and wearing PPE, should touch, or move, any VHF-infected remains. Wearing PPE, experienced personnel should shroud the body in plastic, place in a zippered body bag, place in a second zippered body bag, clean and disinfect the exterior of the second bag, and transport. Minimize handling, and avoid embalming and autopsies; if an autopsy is necessary, consult with Office of Communicable Disease Epidemiology (206-418-5500 or 877-539-4344). Cremate remains or bury promptly in a hermetically sealed casket.


G. Identify Potentially Exposed Persons for Transmissible VHF Agents (e.g., Ebola)

Contact traceback and management will be done in coordination with the Centers for Disease Control and Prevention (CDC). Contact tracing for transmissible viral hemorrhagic fever cases is key for disease control. Immediately institute identification of potentially exposed persons for evaluation of level of risk and appropriate public health actions such as fever watch or home quarantine for 21 days (maximum incubation period). See: [http://www.cdc.gov/vhf/ebola/pdf/contact-tracing.pdf](http://www.cdc.gov/vhf/ebola/pdf/contact-tracing.pdf)

1. Identify persons with shared the initial exposure of a case patient, such as co-travelers or co-workers.

2. Identify contacts of a case patient during the communicable (symptomatic) period, including household members, friends, coworkers, persons sharing a travel vehicle, EMS workers, healthcare workers, and other patients being seen at the same time and location in the healthcare facility as the VHF case.

3. Identify persons who traveled within 21 days from an affected country.

4. Evaluate above persons with risk exposures for symptoms. Contact by telephone to determine their symptoms and details of potential exposures. If symptomatic, manage as a Person Under Investigation (Section 5). If asymptomatic, see Section 6 for monitoring.

H. Environmental Measures for Transmissible VHF Agents

Potentially contaminated materials include anything containing body fluids or excreta such as medical devices, syringes, laboratory testing equipment, bedpans, textiles and laundry, and utensils and dishware. Do daily environmental cleaning and disinfection of a patient room for all surfaces and reusable equipment potentially contaminated with body fluids or excreta, and high touch areas such as bed rails, tables, and counters. Use a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus (e.g., norovirus, rotavirus, adenovirus, poliovirus) to
disinfect environmental surfaces in rooms of patients with suspected or confirmed communicable VHF infection. Use other methods such as autoclaving or incineration as appropriate. To reduce exposure to potentially contaminated textiles while laundering, discard all linens, non-fluid-impermeable pillows or mattresses, and textile privacy curtains as a regulated medical waste. Dishes and cutlery should also be discarded.

Staff doing environmental cleaning and disinfection should wear appropriate PPE, including at a minimum, disposable gloves, gown (fluid resistant/impermeable), eye protection (goggles or face shield), and facemask to prevent exposure to cleaning contamination, chemicals, and splashes or spatters; consider using additional barriers (e.g., shoe and leg coverings) if needed. Use face protection (face shield or facemask with goggles) when doing tasks that can generate splashes such as liquid waste disposal. Follow standard procedures, per hospital policy and manufacturers’ instructions, for cleaning and/or disinfection. Put disposable materials in leak-proof containers and discard as regulated medical waste. To minimize contamination of the exterior of a bag, place the bag in a rigid waste receptacle designed for this use. Sanitary sewers will safely dispose of patient wastes.

6. MANAGING SPECIAL SITUATIONS

Managing persons potentially exposed to transmissible VHF agents.

Potentially exposed persons will be managed in coordination with Centers for Disease Control and Prevention recommendations. Obtain information about exposure to VHF patients and travel to affected countries, including details of exposures, date of last exposure, and exposure to healthcare settings or reservoir animals.

1. Evaluate the exposure as high risk, some risk, low risk, or no risk based on exposures for the past 21 days. For details see Section 5B and:

   a. High risk: percutaneous, mucous membrane or skin exposure to body fluids or excreta of a VHF case; processed specimens from a VHF patient without personal protective equipment (PPE); direct contact with human remains in a country with widespread transmission without appropriate PPE; lived in household and provided direct care to symptomatic case

   b. Some risk: in country with widespread transmission had direct contact with symptomatic case while using appropriate PPE; close contact (3 feet for prolonged period) with a symptomatic person such as household, healthcare facility, or community without PPE

   c. Low risk: in a country with widespread transmission and with no known exposures, briefly in a room of a symptomatic person without direct contact, brief skin contact with a symptomatic person when the person was not very contagious, travel on an airplane with a symptomatic person

   d. All other exposures are no risk

2. For persons with high risk exposures initiate restricted travel and restricted public activities (stay home for 21 days; do not attend work or school; do not leave the
3. For persons with high risk exposures with others in the household, recommend if possible they use a separate bathroom and sleeping area, wash hands frequently with soap and warm water, clean and disinfect the bathroom daily and any surface with body fluid contamination, not share dishes and eating utensils, not share linens (e.g., towels, sheets, blankets), do laundry separately, not share a toothbrush or razor, and bag anything with body fluids (e.g., tissues, used razor) and put in trash.

4. For persons with any risk exposure (high, some, low), initiate daily temperature and symptom monitoring for 21 days from last exposure. Monitoring should include initially at least an in-person visit by local health jurisdiction personnel for temperature and symptom check (direct active monitoring). Daily in-person visits should continue for persons with high or some exposure risk. Twice daily visits may be appropriate for high risk exposures. Low risk could have in-person visits or be monitored through being contacted daily or reporting in daily through electronic means (telephone, text, email, Skype).

a. If a person being monitored develops consistent symptoms including temperature greater than 38°C (100.4°F): Initiate infection control measures in a healthcare setting (including PPE for providers and environmental cleaning), evaluate the person, test for Ebola if indicated; move only by air medical transport; if medical evaluation does not support the diagnosis of Ebola, follow as an asymptomatic person with daily monitoring and travel restrictions until 21 days after last exposure.

b. The local health jurisdiction will advise the person about:

- Using long distance commercial and public transport (no travel on commercial airplanes or commercial long-distance trains, buses, ferries or ships) or local public transport taxis and local trains or buses.

- Whether to stay home from work, school, and avoid public activities as much as possible.

- Reporting any symptoms of Ebola immediately to the LHJ: fever, diarrhea, vomiting, severe headache, muscle pain, abdominal pain, or bleeding. The local health jurisdiction (LHJ) should provide a 24/7 telephone number.

- Seeking healthcare only at a pre-designated facility, contact the facility before arrival, and mention possible exposure to Ebola. The LHJ should provide the facility’s name and its 24/7 telephone number to the person being monitored.

- Traveling to the healthcare facility only by ambulance or private car.
Home restriction may be considered for an unreliable person being monitored. If home restriction is imposed, ask about support requirements including dietary needs, prescription and non-prescription medications, personal care supplies, child care supplies and pet care.

When recommending monitoring of an asymptomatic person, develop an individual plan for steps if a fever or other consistent symptoms develop, including:

- Identify a receiving healthcare facility able to evaluate person in a private room with a door
- Confirm the receiving facility has appropriate PPE for staff 24/7
- Determine a notification point of contact at the facility 24/7
- Confirm the facility’s laboratory preparation for receiving specimens and testing in a closed system
- Suggest the person develop a family plan, such as child care if person is a single parent, or pet care
- Identify a means of transport to the facility to minimize exposing others (e.g., patient to drive self; driver to wear eyewear and avoid skin contact with patient)

Considerations for discharging persons under investigation for Ebola virus disease

A Person Under Investigation (PUI) for Ebola can be discharged if there is a negative RT-PCR test result on a blood specimen collected more than 72 hours after onset of symptoms. If the test was not done or a negative specimen was collected less than 72 hours after onset of symptoms, the decision to discharge a PUI should be based on clinical and laboratory criteria and on the ability to monitor the PUI after discharge, and made by the person’s medical providers, along with local and state health authorities.

Consider these criteria when deciding to discharge a PUI:

1. In the clinical judgment of the medical providers, the PUI’s illness no longer appears consistent with Ebola.
2. The PUI is afebrile off antipyretics for 24 hours, or the fever has an alternative explanation.
3. All symptoms that are compatible with Ebola (e.g., diarrhea or vomiting) have either resolved or can be accounted for by an alternative diagnosis.
4. The PUI has no clinical laboratory results consistent with Ebola, or those that could be consistent with Ebola have been otherwise explained.
5. The PUI is able to self-monitor (or to monitor a child, if the PUI is a child) and comply fully with active monitoring and controlled movement.
6. The PUI understands where to return for medical care if symptoms recur and how to notify public health and healthcare personnel that symptoms recurred.
7. Local and state health authorities have been engaged and concur.
8. Active monitoring and controlled movement requirements still apply for persons who had exposures and are under follow-up as contacts for the full 21-day period.
7. ROUTINE PREVENTION

A. Prevention Recommendations

Except for yellow fever, there are no vaccines for viral hemorrhagic fever agents.

Meticulous attention to personal protective equipment (PPE) and environmental cleaning during patient care are essential to prevent exposure to transmissible VHF agents in healthcare settings. Particular care should be taken when removing PPE to avoid contamination.

8. RESOURCES

As of October, 2014, recommendations and guidances for Ebola virus disease are changing rapidly. Check the Department of Health and the Centers for Disease Control and Prevention websites for the most current information.

DOH: http://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/NotifiableConditions/EbolaResources


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UPDATES

Created October 6, 2014.

Updated October 29, 2014 based on new CDC recommendations for case definition, patient screening, and infection control.

Updated November 7, 2014, based on new CDC recommendations for evaluating ambulatory patients.