Kansas Department of Health and Environment
Division of Health

Viral Hemorrhagic Fever (VHF) Guideline

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Attachments can be accessed through the Adobe Reader's navigation panel for attachments. Throughout this document attachment links are indicated by this symbol; when the link is activated in Adobe Reader it will open the attachments navigation panel. The link may not work when using PDF readers other than Adobe.

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Revision History

Date	Replaced	Comments
09/2011	07/2010	BEPHI replaced BSE throughout. Updated to CDC 2011 Case Definition. Updated web links. Addition of notification section.
02/2012	09/2011	Removed references to KS-EDSS.
08/2014	02/2012	Added table of contents. Minor wording edits to Case Definition and Epidemiology section. Removed Yellow Fever and Dengue from the Disease Overview's VHFs tables. Updated Laboratory Analysis, Isolation, Work and Daycare Restrictions, Data Management, and Management of Special Situations – Intentional Contamination. Reformatted Fact Sheet. Removed references for Skin Snip Biopsy that would only be used in rare instances for death investigations. Removed reference to "Interim Guidance of Managing Patients with Suspected Viral Hemorrhagic Fever in U.S. Hospitals (2005) and referred user to more recent infection control guidance. Replace references to "endemic" areas throughout with the statement "areas of VHF outbreaks or known disease occurrence."
10/2014	08/2014	Reviewed and updated to assure agreement with Ebola Response Plan. Removed references to Viral Hemorrhagic Form as it is no longer supported by CDC.
10/2017	10/2014	Addition of revised regulation 28-1-6 to Restrictions section. Updated web links.
05/2018	10/2017	Updated Notification sections and Isolation, Work and Daycare Restrictions sections with updated regulations.
03/2022	05/2018	Rearrangement of sections. Case definition: updated to 2022 CDC case definition. Assessing Risk Section: Added. Epidemiology Section: Added links to most current distribution maps and travel notifications. Disease Overview: Added Risk Factors section and Signs and Symptoms from CDC CALM algorithm. Removed table "Geographical and epidemiological characteristics of VHFs" as Infection Control for VHFs in African health Care Settings (2014) is longer available from CDC. Laboratory Analysis: Added details from www.cdc.gov/vhf/ebola/laboratory-personnel/specimens.html Notification to Public Health: Clarified CDC notification process. Investigator Responsibilities and Standard Case Investigation and Control: modified guidance to bring in alignment with Kansas Ebola Virus preparedness and Response Plan (2019). Managing Special Situations: Added "Travelers from VHF affected regions"

Viral Hemorrhagic Fever
Disease Management and Investigation Guidelines

CASE DEFINITION (CDC 2022)

Note: This is a general definition for the surveillance of Viral Hemorrhagic Fever, due to Crimean-Congo hemorrhagic fever viruse, Ebola virus, Lassa virus, Lujo virus, Marburg virus, or New world arenaviruses (Chapare, Guanarito, Junin, Machupo, Sabia). During active response efforts more specific definitions may need to be referenced and applied, including criteria for persons under investigation (PUI).

Clinical Description for Public Health Surveillance:

An illness with acute onset of:

- A fever > 38°C (100.4°F)
  AND
- One or more of the following clinical findings:
  - severe headache
  - muscle pain
  - erythematous maculopapular rash on the trunk with fine desquamation 3-4 days after rash onset
  - vomiting
  - diarrhea
  - abdominal pain
  - bleeding not related to injury
  - thrombocytopenia
  - pharyngitis (Arenavirus only)
  - proteinuria (Arenavirus only)
  - retrosternal chest pain (Arenavirus only)

Laboratory Criteria for Case Classification:

Any one of the following:

- Detection of VHF* viral antigens in blood by enzyme-linked immunosorbent assay (ELISA).
- VHF viral isolation in cell culture for blood or tissues.
- Detection of VHF-specific genetic sequence by reverse transcription polymerase chain reaction (RT-PCR) from blood or tissues.
- Detection of VHF viral antigens in tissues by immunohistochemistry.

**VHF refers to viral hemorrhagic fever caused by filoviruses (Ebola virus, Marburg virus), Old World arenaviruses (Lassa and Lujo viruses), New World arenaviruses (Guanarito, Machupo, Junin, Sabia, and Chapare viruses), or viruses in the Bunyaviridae family (Rift valley fever virus, Crimean-Congo hemorrhagic fever virus). Rift valley fever is not currently a national notifiable condition.*

Epidemiologic Linkage:

<u>One or more</u> of the following exposures **within the 3 weeks before symptom onset:**

- Contact with blood or other body fluids of a patient with VHF
- Residence in, or travel to, a VHF endemic area or area with active transmission
- Work in a laboratory that handles VHF specimens
- Work in a laboratory that handles bats, rodents, or primates from a VHF endemic area or area with active transmission
- Sexual exposure to semen from a confirmed acute or clinically recovered case of VHF

Criteria to Distinguish a New Case from an Existing Case:

A new case of VHF should be enumerated only if not previously counted as a case of VHF caused by the same virus as determined by laboratory evidence. *

**Among the VHFs included in CSTE position statement 21-ID-04, reinfection with the same virus species has not been documented. There is a theoretical possibility that a VHF (ex. Ebola) survivor could be infected by a virus that causes one of the other VHFs included in CSTE position statement 21-ID-04 (ex. Lassa fever, Crimean-Congo hemorrhagic fever, etc.).*

Case Classification:

Confirmed: Meets laboratory criteria.

Suspect: Meets clinical criteria **AND** epidemiologic linkage criteria.

Note: The above VHF case definition is used for routine surveillance for reporting cases to the National Notifiable Diseases Surveillance System (NNDSS).

During heightened response a more sensitive and less specific definition of a "Person under Investigation" allows a physician to immediately assess risk independent of the epidemiologic case classification. Medical providers and local health department investigators should refer to the most recent guidance to identify the criteria for a **Person under Investigation (PUI)**.

Assessing risk for Viral Hemorrhagic Fever

Currently, CDC has an algorithm available for use by clinicians in assessing a patient with signs, symptoms, or diagnostic findings concerning for possible VHFs. The algorithm is not a comprehensive guideline and should be used in conjunction with a hospital's established policies.

CALM:

1) **C**: Consider the…
   - Risk Factors for VHF in the past 21 days and
   - Signs and symptoms consistent with VHF
2) **A**: Act if the VHF risk is credible
   - Isolate the patient
   - Inform relevant health authorities
   - Treat the patient
3) **L**: Laboratory Examination
   - Inform your laboratory
   - Arrange for testing
4) **M**: Monitor Contacts
   - Maintain a log of those entering patient room
   - Limit visitors entering patient room
   - Establish procedures for monitoring and managing contacts

When there are no risk factors for VHF continue to assess for other causes of fever common in a returning traveler.

The CDC TOUR algorithm assists in considering diseases other than VHF, including malaria.

For other diagnoses to consider in a returning traveler with fever consider the following resource form CDC: Diagnoses for Consideration in a Returning Traveler with Fever | CDC

EPIDEMIOLOGY

Viral hemorrhagic fevers (VHFs) refer to a severe multisystem syndrome with overall vascular system damage and impairment of the body's regulatory system. Caused by four distinct families: arenaviruses, filoviruses, bunyaviruses, and flaviviruses, illness can be mild, but many of these viruses cause severe, life-threatening disease. The viruses are geographically restricted to the areas where their specific animal or insect host species live, but there is potential for imported, travel-associated cases and import of infected hosts. The first outbreaks of Marburg HF in Germany and Yugoslavia occurred when laboratory workers handled imported monkeys. If the virus can be transmitted further by person-to-person contact, a person infected in an outbreak area can travel outside of the area and infect others. Person-to-person transmission of Lassa, Ebola, Marburg and CCHF viruses can occur through direct contact with VHF-infected material. The transmission risk of VHFs in the health care and laboratory setting is well documented. During a 1995 Ebola outbreak, one-fourth of the cases were in health care workers; but, after barrier nursing practices were implemented, further transmission was controlled. Because of increasing global travel, outbreaks of VHF are an increasing threat to non-endemic areas.

Except for arenavirus cases associated to rodents in California, there are no identified VHF reservoirs in the United States or Canada. Arenavirus found in South America include Chapare virus, a severe or fatal hemorrhagic fever, found in Bolivia and Guanarito virus found in Venezuela.

To assess the current conditions associated to VHF transmission or risks, refer to:

- Distribution maps for:
  - Ebola Virus Disease
  - Marburg Hemorrhagic Fever Outbreak
  - Lassa Fever Outbreak
  - Crimean Congo Hemorrhagic Fever
- Travel notices designed to inform travelers and clinicians about current health issues related to specific destinations.
- For any questions about current outbreaks of VHFs, call the CDC's Emergency Operations Center at 770-488-7100.

DISEASE OVERVIEW

Risk Factors Associated to VHFs

- Any travel to a region endemic (see Epidemiology section) for or currently experiencing VHF outbreaks
- Close contact with sick person(s) who recently traveled to a region experiencing VHF outbreak
- Exposure to bats, rodents, livestock, or ticks in a region with a VHF outbreak or where VHF's have been
- Work in a laboratory that handles VHF specimens
- Work in a laboratory that handles bats, rodents, or primates from a VHF endemic area or area with active transmission
- Sexual exposure to semen from a confirmed acute or clinically recovered case of VHF

Signs and Symptoms of More Common VHFs

Disease	Signs and symptoms			
Ebola Virus Disease	fever	headache	myalgia	hemorrhage
	abdominal pain	vomiting	diarrhea	
	chest pain			
	conjunctival injection		fatigue	weakness
Marburg Virus Disease	fever, chills	headache	myalgia	hemorrhage
	abdominal pain	vomiting, nausea	diarrhea	
	chest pain		maculopapular rash	jaundice
				sore throat
Lassa Fever	fever	headache	myalgia	bleeding
	abdominal pain	vomiting, nausea		
	retrosternal chest pain		maculopapular rash	
	conjunctival injection		enlarged cervical lymph nodes	sore throat
Crimean-Congo Hemorrhagic Fever	fever	headache	back pain	bleeding
	abdominal pain	vomiting		
			petechial rash	jaundice
	conjunctival injection	photophobia	facial flushing	sore throat

LABORATORY ANALYSIS

Warning: A telephone report to 1-877-427-7317 within 4 hours of suspicion of a case is required by law. These are highly pathogenic viruses. Strict adherence to infection prevention recommendations reduces the risk of transmission.

Because of the hazard associated with handling specimens, **TESTING IS DONE ONLY WITH PRIOR CONSULTATION**.

- Hospitals should contact KDHE Epidemiology Hotline: 877-427-7317 for consultation for VHF testing requests before contacting the CDC.
- Consultation will occur after the KDHE Epidemiologist-on-call reports the case information to the CDC Emergency Operations Center (EOC) and arranges a conference call.
- Consultation will include instructions on specimen collection and transport.
    - VHFs are classified as Category A infectious substances and transport of samples from persons under investigation must be packaged in a triple packaging system as regulated by DOT's Hazardous Materials Regulations.
    - Persons responsible for packing and shipping any specimen for VHF testing should be trained to ship Category A infectious substances.
- **To minimize risk to personnel, a site-specific risk assessment should be performed to determine the potential for sprays, splashes, or aerosols generated during laboratory activities with controls put in place to minimize risk including the following:**
    - ***Wear protective clothing when handling suspect VHF specimens.***
    - Follow established standards compliant with the OSHA bloodborne pathogens standard. This includes proper use of appropriate personal protective equipment (PPE) and adhering to engineered safeguards, for all specimens regardless of whether they are identified as infectious.
    - For specimen collection: Full face shield or goggles, masks to cover all of nose and mouth, gloves, water-resistant gowns are recommended. **Additional PPE may be required in certain situations.**
    - For laboratory testing: use full face shield or goggles, masks to cover all of nose and mouth, gloves, water-resistant gowns AND use of a certified class II Biosafety cabinet or Plexiglass splash guard. All manufacturer-installed safety features for laboratory instruments should be used.

Other Points to keep in mind:

1. Notification must occur to the KDHE Epidemiology Hotline 1-877-427-7317.
2. Testing should only be conducted for persons who meet the signs or symptoms of VHF and have an epidemiological risk factor.
3. Stringently apply infection control practices.
4. If the person under investigation is within three days from onset, additional serological samples will need to be collected >72 hours after onset.
5. Additional guidance: Testing for Viral Hemorrhagic Fevers (VHFs) | CDC

NOTIFICATION TO PUBLIC HEALTH AUTHORITIES

Pursuant to K.A.R. 28-1-2(a)(18) any suspected case of Ebola virus is required to be reported to KDHE by telephone at 1-877-427-7317, within four (4) hours of the suspected case.

Kansas Department of Health and Environment (KDHE)
Bureau of Epidemiology and Public Health Informatics (BEPHI)
Phone: 1-877-427-7317

Suspected cases of VHF are reported within 24 hours of suspicion to the CDC EOC at 770-488-7100 by a KDHE epidemiologist.

- If the source of the VHF is suspected to be an intentional event, the call to the CDC EOC must occur immediately within 4 hours of suspicion.
- Any case status changes (i.e. Suspected to Confirmed or to Suspected to not a case) must be communicated by voice notification to the CDC program official who was established as the point of contact or to the CDC EOC.
- Further guidance on the process to provide verbal notification to the CDC Emergency Operations Center (EOC) can be referenced at Process statement 09-SI-04 for Immediately Nationally Notifiable Conditions (word document from cdc.gov)

KDHE-BEPHI will also notify the local public health jurisdiction immediately to coordinate the appropriate response to the situation.

For further guidance on notifications of travelers from VHF affected areas, refer to Managing Special Situations: Travelers from VHF affected regions.

INVESTIGATOR RESPONSIBILITIES

The local health department, as a resource for medical providers, ensures that:

1) Medical providers are aware of resources available to assist with the evaluation and risk assessment of suspect VHF patients.
2) Appropriate infection control practices, including isolation measures, are implemented in facilities evaluating the risk of VHF illness in a patient.
3) Resources are available or obtainable for laboratory specimen collection.
4) Immediate notification occurs to KDHE-BEPHI for any person under investigation for VHF.

The local health department will contact and monitor travelers from endemic areas during times of enhanced screening at ports of entry into the U.S.

After a confirmed case of VHF is identified, the local health department investigator will work with KDHE to:

1) Assist in epidemiological investigation.
   - Conduct contact investigation, tracing and surveillance to identify additional cases or contacts.
   - Conduct needed case investigation starting within 1 day of notification and completing within 3 days of notification.
   - Conduct active surveillance to identify additional cases that are classified and reported with the current case definition
2) Assist in formulating and implementing disease control and prevention activities (Case Management and Contact Management):
   - Identify and isolate VHF cases to prevent disease spread.
   - Identify and monitor contacts of cases, including making sure that basic needs of the contacts are addressed.
3) Complete and report all information requested in the Kansas electronic surveillance system and any additional forms requested by the CDC.

The local health department may also be involved in the implementation of additional measures in response to a VHF incident, based on activities described in the Kansas Biological Incident Annex (BIA), local health department standard operating guides (SOGs), or additional response plans from the KDHE.

STANDARD CASE INVESTIGATION AND CONTROL METHODS

Case Investigation

1) Obtain a pertinent medial and travel history, if it has not already been collected.
   - Specific signs and symptoms.
   - Date of illness onset
   - Laboratory testing: including testing to rule-out malaria or other diagnoses for consideration in a returning traveler with fever.
   - Travel itinerary (countries and location in the country)
     - Duration of travel
     - Date of return from travel
     - Immunizations received pre-travel.
     - Adherence to malaria prophylaxis
     - Accommodations while travelling.
     - Activities while abroad.
   - Potential exposures:
     - Insects, ticks, or animals (including scratches, bites, or handling raw meat)
     - Foods (especially seafood, raw meat, bush meat, etc.)
     - Medical care overseas and or any association to healthcare facilities
     - Sick persons
     - Attendance or assisting at funerals
     - Sexual activity.
     - Close contacts with recent travel to endemic or outbreak areas.
   - Occupation
   - Case's demographic data and contact information
2) Collect information for the Contact Investigation. (See below).
3) Investigate epi-links among cases (clusters, household, co-workers, etc).
   - For suspected outbreaks refer to Managing Special Situations section.

Contact Investigation

1) Contacts are those who have exposure. Exposure is defined as:
   - Contact with blood or other body fluids of a patient sick with VHF.
   - Residence in – or travel to – an area where VHF has occurred, or an outbreak is occurring.
   - Laboratory work handling VHF specimens.
   - Contact with primates associated with VHF transmission.
   - Exposure within the past 3 weeks to semen from a confirmed case of VHF
2) Identify all contacts and manage as instructed in Contact Management.
3) If case's travel occurred in a travel group, investigate travel companions.
4) If a blood transfusion or organ transplant is suspected, coordinate with BEPHI.

Isolation and Restrictions

K.A.R 28-1-6 for Viral hemorrhagic fevers:

Control of Cases

- For each person hospitalized with a case, droplet and contact precautions and the use of face and eye protection shall be followed for the duration of acute illness. Airborne precautions shall be followed for the duration of acute illness when performing aerosol-generating procedures.

1) A patient in a Kansas health care facility suspected or known to have VHF should be managed with enhanced standard, contact, and droplet precautions, including the following recommendations:
   - Isolate the patient: Patients should be isolated in a single patient room (containing a private bathroom whenever possible) with the door closed.
     - Patients with respiratory symptoms should wear a face mask to contain respiratory droplets prior to placement in their hospital or examination room and during transport, if tolerated and not medically contraindicated.
   - Wear appropriate PPE: Health care providers entering the patient's room should wear gloves, gown (fluid resistant or impermeable), eye protection (goggles or face shield), and a face mask. Additional protective equipment might be required in certain situations, including but not limited to double gloving, disposable shoe covers, and leg coverings. Refer to Guidance on proper use of PPE for VHF.
   - Restrict visitors. Exceptions may be considered on a case-by-case basis, but such visitors must be monitored, managed and trained in and use proper PPE. A logbook should be kept documenting all persons entering the patient room.
   - Avoid aerosol-generating procedures: If performing these procedures, PPE should include respiratory protection (N95 or higher filtering face-piece respirator) and should be performed in an airborne infection isolation room.
   - Implement environmental infection control measures: Use diligent environmental cleaning and disinfection and safe handling of potentially contaminated materials. Handle all potentially infectious materials following hospital protocols.
   - For further guidance on prevention and control measures, refer to the most current guidelines issued from CDC and KDHE, including:
     - Current CDC guidelines on infection control: Infection Prevention and Control Recommendations for Hospitalized Patients Under Investigation (PUIs) for Ebola Virus Disease (EVD) in U.S. Hospitals | CDC

2) Other measures that may be taken include:
   - Active monitoring – Individuals identified as having had high-risk or some risk or exposure to VHF would undergo active monitoring for a period following the last exposure. Active monitoring requires asymptomatic contacts to self-monitor for predetermined symptoms, to share the information with the local health department staff verbally daily, to immediately contact KDHE if symptoms consistent with VHF develop, and to contact their health care facility or provider in advance to arrange for health care.
   - Restricted movement – Persons must remain at their residence or other living location as determined by KDHE or the local health officer for a period following their last potential exposure; any movement outside the residence or other living location or visitors to the location must be approved in advance by KDHE or the local health officer.
   - Failure to comply with the provisions of active monitoring or restricted movement may result in the issuance of more restrictive quarantine orders pursuant to K.S.A. 65-119, K.S.A. 65-128, and K.A.R. 28-1-5
   - Animals exposed to VHF – Depending on the agent and type of exposure animals may need to be quarantined and monitored for potential signs of illness. Final disposition of the animal will be determined by the Kansas Animal Health Commissioner and the Secretary of KDHE.

Case Management

1) Duration of precautions to prevent disease transmission should be determined on a case-by-case basis, in conjunction with local, state, and federal health authorities.
   - Factors to consider include, but are not limited to, presence of symptoms related to EVD, date symptoms resolved, other conditions that would require specific precautions (tuberculosis, Clostridium difficile) and available laboratory information.
   - Because blood and secretions may contain virus for an undetermined amount of time after illness, recovering cases should be monitored for infectiousness (specific monitoring will be determined by an infectious disease specialist).
   - Recovering VHF cases should refrain from any activities, including sexual activity, that exposes others to blood or body fluids until considered no longer infectious based on monitoring determined by an infectious disease specialist.
2) Patients with Lassa infections are at risk of deafness and hearing loss and should be monitored during recovery.

Contact Management

1) Establish active monitoring of contacts with identifiable risks of exposure.
   - Contacts should measure their temperatures twice daily during the surveillance period which is dependent upon the maximum incubation period for the specific agent.
   - The local health department should conduct telephone or video conferencing to follow-up with exposed persons to ensure compliance with self-monitoring, assess symptoms, and discuss potential concerns. Home visits for symptom monitoring occur only if other methods are not available.
2) Health care workers potentially exposed to VHF may be excluded from direct patient care for a period up to 21 days since last exposure, as determined by the local health officer or the secretary of KDHE based on the incubation period of the virus, circumstances of exposure, and other pertinent factors.
3) If a person under medical monitoring develops a temperature ≥100.4°F [38.0 °C] or subjective history of fever or other symptoms of VHF, the person shall immediately contact the KDHE Epidemiology Hotline at 877-427-7317.
   - If such persons contact a health care provider or local health department worker first, then the health care provider or local health department worker shall have the responsibility of contacting KDHE.
   - Such a person who presents to a medical facility should be placed in isolation under standard, contact, and droplet precautions while the situation is assessed and/or testing occurs.
4) The restricted movement of asymptomatic contacts will depend on the extent of exposure and agent involved. Decisions must be made on whether a contact can continue their routine daily activities or is restricted from certain activities or travel or is ultimately restricted to their residence or other living location during the surveillance period.
5) Local health departments and other agencies should develop local plans to ensure the basic needs of those whose movement is restricted are met.

Environmental Measures

1) Environmental surfaces or inanimate objects contaminated with blood, other body fluids, secretions, or excretions should be cleaned and disinfected using standard procedures.
   - Disinfection can be accomplished using a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus or a 9:1 (water: bleach) solution.
2) Waste generated through the care of a patient with known or suspected VHF disease can include but is not limited to medical equipment, sharps, linens, and used health care products, used PPE and all absorbent or uncleanable items contaminated or potentially contaminated by a suspected VHF patient.
   - Such waste is considered contaminated or suspected of being contaminated with a Category A infectious substance and must be packaged and transported in accordance with the Hazardous Materials Regulations (HMR, 49 C.F.F., Parts 171-180).
   - Category A agent contaminated waste that has been treated (sterilized) by the generator using effective (autoclaving) procedures may be managed as other Category B Regulated Medical Waste in accordance with state and federal transportation and disposal requirements.
3) When discarding solid medical waste (e.g., needles, syringes, and tubing) contaminated with blood or other body fluids from VHF patients:
   - Package the waste with minimal agitation during handling.
   - Manage according to existing local and state regulations for medical waste treatment and disposal.
4) Liquid medical waste such as feces and vomitus can be disposed of in the sanitary sewer by following local sewage disposal requirements and these recommendations:
   - Toilet bowels should be primed with a 9:1 (water: bleach) solution prior to introduction of any wastes to ensure wastes discharged during toilet equilibrium actions are appropriately treated.
   - Collect the body fluid waste for disposal and treat with 1-part household bleach to 9-parts water for at least 10 minutes or longer prior to discharge to the sanitary sewer.
   - Body fluids expelled directly from the patient into a toilet must be treated with the 1-part of household bleach to 9-parts water for at least 10 minutes prior to discharge to the sanitary sewer; this will require consideration of the toilet bowl water volume to ensure a 9:1 (water: bleach) solution is achieved.
   - Facilities should discuss preferred concentrations and treatment time for body fluid wastes utilizing these methods with their Public Waste Water Treatment facility director and local emergency manager.
   - Avoid splashing when disposing of these materials.

3) Local health departments and other local agencies are advised to discuss and plan for how local resources will be utilized to address potential needs for environmental decontamination of a confirmed case-patient's residence or other structures.
4) Refer to the following publications for further guidance:
   - Information on waste management for suspect or confirmed VHF patients.
   - Guidance on proper use of PPE for VHF
   - Guidelines Library | Infection Control | CDC
   - WHO. Interim Infection Prevention and Control Guidance of Patients with Suspected or Confirmed Filovirus Hemorrhagic Fever in Health-care Settings, with Focus on Ebola

Education

1) Educate medical providers about: KDHE #ThinkTravelHistory
2) Households where VHF cases have been identified must receive specific information on personal hygiene, waste disposal, and limiting exposure to possibly infected materials or animals. Instructions will be specific to the agent involved. Consult with an infectious disease specialist or KDHE-BEPHI for specific instructions.
3) Instruct travelers to VHF outbreak areas on the risks and to minimize contact with potential exposures.
4) Information for travelers to outbreak areas can be found at the CDC Traveler's Health website. (Travelers' Health | CDC)

MANAGING SPECIAL SITUATIONS

Travelers from VHF affected regions

- During a time of heightened concern of VHF transmission, enhanced screenings of travelers entering the United States from affected areas will occur as managed by CDC and Customs and Border Protection.
- CDC will distribute contact information for screened passengers to state health departments based on the passenger's designation.
- KDHE will notify the local health departments with jurisdiction over the traveler's designation and recommend the LHD make initial contact with the traveler to establish communication, reinforce importance of the symptom monitoring and what to do if symptoms develop, and perform necessary monitoring to be determined by most recent guidance.
- For travelers, who move across state-borders during their 21-day observation period for symptoms, communications will occur between states affected by the movement. It is important for local health departments to communicate with KDHE when travelers leave or plan to leave the local health department jurisdiction and continue travel to another state.
- For travelers under observation who are moving within the state of Kansas, local health departments should communicate with the local jurisdiction to which the traveler is moving to allow the new jurisdiction the opportunity to contact the traveler if they are still within the 21-day observation period.

Post-mortem Practices

- If the patient dies, handling of the body should be minimized.
- Mortuaries need to be alerted to any suspect or confirmed VHF case.
- The remains should not be embalmed. Remains should be wrapped in sealed leak-proof material and cremated or buried promptly in a sealed casket.
- If an autopsy is necessary, the state health department and CDC should be consulted regarding appropriate precautions.

Outbreaks and Unusual Occurrences

One or more cases for which a known risk factor (e.g., recent travel) cannot be identified should be considered a potential outbreak and adequate resources applied to the investigation. A locally acquired case of VHF would be an unusual occurrence in the continental United States.

- Report and investigate a single diagnosed or suspected case of VHF with no travel history or occupational risk immediately.
- Contact KDHE (877-427-7317).
- It may be necessary to:
  - Inquire about potential medical exposures: blood transfusions and organ transplantations.
  - Investigate febrile illness reports or unexplained deaths in the area.
- Review recommendations for intentional contamination situations.

Intentional Contamination

VHF viruses are considered Category A bioterrorism agents. If a natural etiology cannot be established by a prompt, vigorous investigation; the situation is considered a bioterrorist act until proven otherwise.

- Contact KDHE (877-427-7317) immediately.
- Implement "Chain of Custody" procedures for all samples collected, as they will be considered evidence in a criminal investigation.
- Work to define population at risk which is essential to guide response activities. Public health authorities will play the lead role in this effort, but must consult with law enforcement, emergency response and other professionals in the process. The definition may have to be re-evaluated and redefined at various steps in the investigation and response.
- Once the mechanism and scope of delivery has been defined, the identification of the symptomatic and asymptomatic exposed individuals can be completed and recommendations for the treatment made.
- Establish and maintain a detailed line listing of all cases and contacts with accurate identifying and locating information.

Safety Considerations:

- Strict adherence to standard, contact, and droplet precautions including: the use of gowns, gloves, masks and needle precautions is mandatory.
- Persons with percutaneous or mucocutaneous exposures to blood, body fluids, secretions, or excretions from a patient with suspected VHF should immediately wash the affected skin surfaces with soap and water. Mucous membranes (e.g., conjunctiva) should be irrigated with copious amounts of water or eyewash solution. Exposed persons should receive medical evaluation and follow-up care, including fever monitoring.

Postexposure prophylaxis (PEP):

- No post-exposure prophylaxis is associated with this group of diseases; however, vaccination may be an option for some of the arboviruses.

Environmental decontamination:

- Environmental surfaces or inanimate objects contaminated with blood, other body fluids, secretions, or excretions should be cleaned and disinfected using standard procedures. Refer to Environmental Measures.
- A release in areas populated with appropriate animal host and/or appropriate arthropod vectors could initiate both an epizootic and epidemic trend. Integrated pest management at the presumed infected site, including insecticide fogging, may be reasonable.

DATA MANAGEMENT AND REPORTING TO THE KDHE

A. Accept the case assigned to the LHD and record the date the LHD investigation was started on the [Administrative] tab.

B. Organize and collect data, using appropriate data collection tools.

C. Report data collected during the course of the investigation via EpiTrax**.**

- Verify that all data requested in EpiTrax has been recorded on an appropriate EpiTrax [tab].
- Some data that cannot be reported on an EpiTrax [tab] may need to be recorded in [Notes] or scanned and attached to the record.
- Paper report forms do not need to be sent to KDHE after the information is recorded in EpiTrax. The forms should be handled as directed by local administrative practices.

D. After the requirements listed under Case Investigation have been completed, record the "Date LHD investigation completed" field located on the [Administrative] tab.

- Record the date even if the local investigator's Case or Contact Management for the contact is not "Complete".

E. Once the entire investigation is completed, the LHD investigator will click the "Complete" button on the [Administrative] tab. This will trigger an alert to the LHD Administrator so they can review the case before sending to the state.

- The LHD Administrator will then "Approve" or "Reject" the CMR.
- Once a case is "Approved" by the LHD Administrator, BEPHI staff will review the case to ensure completion before closing the case.
  (Review the EpiTrax User Guide, Case Routing for further guidance.)

ADDITIONAL INFORMATION / REFERENCES

A. Case Definitions: https://ndc.services.cdc.gov/

B. Chain of Custody: KDHE Chain of Custody Information https://www.kdhe.ks.gov/852

C. Kansas Biological Incident Annex: https://www.kdhe.ks.gov/845, including additional templates: https://www.kdhe.ks.gov/840/Template

D. Kansas Regulations/Statutes Related to Infectious Disease: https://www.kdhe.ks.gov/1517/Regulations-Related-to-Infectious-or-Con

E. Additional Information (CDC): www.cdc.gov/health/default.htm

- **VHF Site:** https://www.cdc.gov/vhf/
- **Ebola Site:** https://www.cdc.gov/vhf/ebola/clinicians/index.html
- **Testing:** https://www.cdc.gov/vhf/abroad/healthcare-workers/specimens.html

F. Additional Information KDHE: https://www.kdhe.ks.gov/1505/Ebola-Virus-Disease

- Biohazardous Waste Storage at Generating Medical Facilities Guidance (PDF)
- KDHE #ThinkTravelHistory
- Kansas Ebola Virus Preparedness and Response Plan (PDF)(Updated March 12, 2019)
- KDHE Waste Management Guidelines for Ebola Response (PDF) (Updated October 20, 2014)
- Ebola Waste Management in Kansas Flowchart (KDHE) (PDF)

ATTACHMENTS

- **Fact Sheet**