



MARBURG (MARBURG VIRUS DISEASE)

1. **Agent:** Marburg Virus Disease is caused by infection with a Marburg virus of the family *Filoviridae*.

2. **Identification:**

a. **Symptoms:** After an incubation period of 2-21 days, symptom onset is sudden and marked by fever, chills, headache, and myalgia. Around the fifth day after the onset of symptoms, a maculopapular rash, most prominent on the trunk (chest, back, stomach), may occur. Nausea, vomiting, chest pain, a sore throat, abdominal pain, and diarrhea may appear. Symptoms become increasingly severe and can include jaundice, inflammation of the pancreas, severe weight loss, delirium, shock, liver failure, massive hemorrhaging, and multi-organ dysfunction.

See CDC website for the latest information:

<https://www.cdc.gov/vhf/marburg/symptoms/index.html>

b. **Differential Diagnosis:** Due to these nonspecific symptoms particularly early in the course, MVD can often be confused with other more common infectious diseases such as malaria, typhoid fever, dengue fever, influenza, meningococemia, other bacterial infections (e.g., pneumonia), or viral hemorrhagic fevers (such as Lassa fever or Ebola).

c. **Diagnosis:** Antigen-capture enzyme-linked immunosorbent assay (ELISA) or polymerase chain reaction (PCR) and IgM-capture ELISA can be used to confirm a case of MVD.

<https://www.cdc.gov/vhf/marburg/diagnoses/index.html>

3. **Incubation:** Typically 5 -10 days (range 2 to 21 days).

4. **Reservoir:** The reservoir host of Marburg virus is a type of fruit bat native to Africa called the Egyptian rousette

bat, or *Rousettus aegyptiacus*. Fruit bats infected with Marburg virus do not show obvious signs of illness.

The virus is not known to be native to North America.

5. **Source:** Blood, sweat, vomit, saliva, urine, feces, semen, tears, amniotic fluid, vaginal secretions, or breast milk of MVD cases. Infected bats or primates from disease-endemic areas.

3. **Transmission:** Initial transmission to humans is most likely associated with contact with *Rousettus* bat colonies or another intermediate host (Nonhuman primate, bushmeat). Transmission to humans occurs through contact with infected bat urine or feces. Contact with the virus may also occur when a person inhales tiny particles in the air contaminated with infected bat excretions. Handling infected nonhuman primates or direct contact with their body fluids can lead to infection.

Person-to-person transmission may occur after exposure to virus in the blood or body fluids such as feces, saliva, sweat, urine, vomit, breast milk, and semen of a person who is sick with or dies from Marburg virus disease. Objects contaminated with body fluids from a person who is sick with or has died from MVD (such as clothes, bedding, needles, and medical equipment) can also cause infection. Transmission via infected semen can occur up to seven weeks after clinical recovery.

6. **Communicability:** Although it is not completely understood, contagious period likely begins at the onset of signs and symptoms.

7. **Treatment:** Currently there are no licensed treatments available for MVD. Treatment is limited to supportive care and treatment of symptoms as they occur.

See CDC website for the latest information:

<https://www.cdc.gov/vhf/marburg/treatment/index.html>



8. **Immunity:** Unknown at this time, pending more research data.

REPORTING PROCEDURES

1. **Report any case or suspected cases by telephone immediately (Title 17, Section 2500. California Code of Regulations) to:**
 - a. Los Angeles County Department of Public Health (LAC DPH) Acute Communicable Disease Control Program (ACDC) at (213) 240-7941. Physicians at ACDC are available 24 hours/day for consultation. Ask for Physician on Call (AOD) during after business hours at (213) 974-1234.
2. **ACDC will notify the:**
 - a. CDC Emergency Operations Center at (770) 488-7100.
 - b. California Department of Public Health Division of Communicable Disease Control (CDPH DCDC) by calling the Duty Officer at (916) 328-3605 (available 24 hours)
 - c. Appropriate ACDC staff.
 - d. LAC DPH Public Health Lab (PHL) at (562) 658-1360.
3. **Report Forms:**
 - A. [Suspect Viral Hemorrhagic Fever \(VHF\) Intake and Checklist](#)
 - B. [Marburg Contact Investigation Worksheet](#)
 - C. [Viral Hemorrhagic Fever Case Report \(For ACDC use\)](#)
 - D. [Marburg Virus Disease Exposure Daily Symptom Monitoring Log](#)
 - E. **VHF REDCap Traveler Interview Form** – See REDCap link in IRIS in the “Daily Monitor” tab under CFS Contact Activities section (For CFS use).

Upon consultation with the reporting clinician, the AOD or a designated staff is to complete:

- [Suspect Viral Hemorrhagic Fever \(VHF\) Intake and Checklist](#)

If received on weekend/holidays, the AOD or a designated staff to complete the following additional forms:

- [Suspect Viral Hemorrhagic Fever \(VHF\) Intake and Checklist](#), and
- [Marburg Contact Investigation Worksheet](#)

4. Epidemiological Data:

Travel to endemic regions (refer to CDC website for the list:

<https://www.cdc.gov/vhf/marburg/outbreaks/distribution-map.html>)

Contact with blood or bodily fluids (including contaminated objects) of acutely ill or dead persons with suspected or known MVD (such as providing care in home or healthcare setting) without wearing appropriate PPE).

Working in a laboratory where human MVD specimens are handled without wearing appropriate PPE.

Contact with semen from a man who has recovered for MVD (e.g., oral, vaginal, or anal sex).

Experiencing a breach in infection control precautions resulting in percutaneous, mucus membrane, or skin contact with the blood or body fluids of a patient with known or suspected MVD.

Living in the same household as a person with symptomatic known or suspected Marburg

Contact with African fruit bats, or their urine and/or excretions in last 21 days.

Direct handling of wild animals or carcasses that may be infected with MVD (such as fruit bats or nonhuman primates).

CONTROL OF CASES & MONITORING OF PERSONS WHO MAY HAVE BEEN EXPOSED TO MVD

Investigate on the Day of Report:

CASE (Suspect and Confirmed):



1. Interview Suspect/Case by phone (**[Suspect Viral Hemorrhagic Fever \(VHF\) Intake and Checklist](#)**):

- Travel during exposure period to an endemic region in Africa.
- Contact with fruit bats or enter caves or mines inhabited by these bats.
- Household exposure to suspect or known MVD patient.
- Attend funeral of known or suspect MVD patient.
- Other direct exposure to suspect or known MVD patient.
- Healthcare exposure as provider, laboratorian, or patient to suspect or known MVD patient.
- Symptoms and onset date.

2. Obtain Contacts to Suspect or Case:

- Detailed name and contact information for all persons that had exposure to blood or body fluids such as feces, saliva, sweat, urine, vomit, breast milk, amniotic fluid, and semen of the suspect/confirmed case during the infectious period (household, sexual, healthcare facilities, public transportation, work, school, social events, bars/clubs, friends/relatives, community centers, religious services, other activities, places, or people).
- Obtain name, address, phone number, email, DOB, gender, and relationship to case/suspect.
- Nature of exposure should be obtained to determine risk classification. (**[Marburg Contact Investigation Worksheet](#)**)

3. Provide Education to Healthcare Provider if Suspect/Case is currently at a Healthcare Facility.

- Isolate the patient in a negative pressure room. If not available, isolate in a single room (with a private bathroom) with the door closed.
- Follow standard, contact, droplet, and airborne precautions, including the use of appropriate PPE.
- PPE used for MVD patient management is similar to that recommended for Ebola. Refer to CDC EVD PPE guidance for

details:

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/CDPH-PPE-Guidance-EVD.aspx>

- Obtain the names of all persons who may have had close, direct, and unprotected (not wearing protective clothing) contact during the course of their illness and prior to the implementation of isolation precautions (e.g., emergency medical services, admitting staff, emergency room personnel, family/household members, and other patient contacts).
- Maintain a log of all staff and visitors entering the patient room. Limit healthcare personnel who enter the patient room. Keep log of all staff and visitors (with contact numbers) that may have had interaction/contact with the case prior to proper isolation of patient.
- Maintain a log of all staff collecting and handling specimens from the suspected MVD patient. Healthcare and laboratory personnel should follow established standards and protocols compliant with the Occupational Safety and Health Administration (OSHA) blood-borne pathogen standard for blood and other potentially infectious material including proper PPE use.
- Prior to discharge: contact ACDC at (213) 240-7941. Physicians at ACDC are available 24 hours/day for consultation. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.

CONTACTS AND EXPOSURE RISK LEVELS:

Contact identification and follow-up should occur for all suspect cases where there is a high index of suspicion of MVD and diagnostic testing is indicated, as well as for all confirmed MVD cases (both alive and dead). If laboratory testing determines that a case is ruled out (“not a case”), contact identification and follow-up can cease.

The CDC may also recommend public health risk assessment and post-arrival management of travelers from countries with MVD outbreaks.

The CDC will provide guidelines for classifying contacts based on their level of risk exposure (See CDC website for the latest guidelines):



<https://www.cdc.gov/quarantine/interim-guidance-risk-assessment-ebola.html>

Each contact should be located and interviewed to confirm exposure risk and determine presence or absence of symptoms. (Form E: **Marburg Virus Disease REDCap Traveler Interview Form – See REDCap link in IRIS in the “Daily Monitor” tab under CFS Contact Activities section (For CFS use)**)

1. High Risk –

High-Risk Exposures

- Percutaneous (i.e., piercing the skin), mucous membrane (e.g., eye, nose, or mouth), or skin contact with blood or body fluids (including but not limited to feces, saliva, sweat, urine, vomit, sputum, breast milk, tears, vaginal fluid, and semen) of a person with known or suspected MVD.
- Direct physical contact with a person with MVD (alive or dead) or with objects contaminated with the body fluids of a person with MVD (alive or dead) while not wearing recommended PPE.
- Providing health care to a patient with known or suspected MVD without use of recommended PPE or experiencing a breach in infection control precautions that results in the potential for percutaneous, mucous membrane, or skin contact with the blood or other body fluids of a patient with MVD while working in a Marburg treatment unit or associated facility (e.g., laboratory) or while taking care of a patient with MVD.
- Direct contact with or the occurrence of a breach in infection control precautions while handling a dead body in a Marburg outbreak area, the body of a person who died of MVD or had an illness compatible with MVD, or who died of unknown cause after any potential exposure to MVD.
- Living in the same household as a person with symptomatic known or suspected MVD.

a. Symptomatic:

- Clinical criteria, which includes fever of $\geq 100.4^{\circ}\text{F}/38.0^{\circ}\text{C}$, OR any of the

following symptoms: severe headache, muscle pain, joint pain, sore throat, nausea, vomiting, diarrhea, abdominal pain, jaundice, unexplained bruising or bleeding, skin rash, inflammation of the pancreas, severe weight loss, delirium, shock, liver failure, or multi-organ dysfunction.

- Call ACDC doctor on call (AOD) at 213-240-7941 immediately for consultation and to arrange safe transport to a healthcare facility for MVD evaluation. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.
- Admit and isolate patient for medical examination, perform MVD testing by contacting PHL with prior approval of testing by ACDC, and conduct contact tracing.
- Health Officer Order of Isolation may be considered if suspect case tests positive for MVD and if necessary to ensure compliance.

b. Asymptomatic:

- Health Officer Order of Quarantine in accordance with CDC guidelines is required.
- DPH will conduct daily monitoring via text message, email, or phone for fever and symptom assessment for 21 days from the date of last exposure with MVD. Daily monitoring log ([Form D](#)) is available as a resource for contact if needed.
- Travel restrictions: travel is not permitted for high-risk contact, even if not showing symptoms.
- Exclusion from workplaces for the duration of the public health order.
- Exclusion from public places (e.g., shopping centers, movie theatres) and congregate gatherings.
- Notify ACDC immediately if fever or other symptoms develop at 213-240-7941. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.
- For life threatening emergency, call 911 and inform travel history, risk exposure, current symptoms, and being monitored by DPH.



2. Medium Risk – Present in Designated Marburg Outbreak Area and Report Situations with Additional Exposure Potential, but no High-Risk Exposures:

- Reports no High-Risk exposures: [CDC Interim Guidance High Risk Exposures](#) (see Box 2.) **and**
- Reports [situations with additional exposure potential](#) **and**
- Having been in a designated Marburg outbreak area within the previous 21 days [CDC Interim Guidance High Risk Exposures](#) (See Box 1.)

a. Symptomatic:

- Clinical criteria, which includes fever of $\geq 100.4^{\circ}\text{F}/38.0^{\circ}\text{C}$, OR any of the following symptoms: severe headache, muscle pain, joint pain, sore throat, nausea, vomiting, diarrhea, abdominal pain, jaundice, unexplained bruising or bleeding, skin rash, inflammation of the pancreas, severe weight loss, delirium, shock, liver failure, or multi-organ dysfunction.
- Call ACDC doctor on call (AOD) at 213-240-7941 immediately for consultation. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.
- ACDC will assess the situation and determine if need to admit and isolate patient for medical examination, perform Marburg virus testing, and conduct contact tracing.
- Health Officer Order of Isolation may be considered if necessary to ensure compliance.

b. Asymptomatic:

- DPH will conduct midway through and at the end of 21-day monitoring via text message, email, or phone if contact had any of the following:
 - Visiting a health care facility or traditional healer in an outbreak area.
 - Burial work or attending a funeral or burial in an outbreak area.
 - Providing health care or environmental cleaning in a MVD treatment unit (MTU).

- Providing environmental cleaning in a non-MTU health facility in an outbreak area.
- Entry into a patient care area of a MTU for any other reason.
- Providing health care in an outbreak area to acutely ill patients not known to have Marburg.
- Clinical laboratory work associated with a MTU or other health care setting in an outbreak area.
- Visiting a cave in the outbreak area.
- Exposed to bats or non-human primates in the outbreak area.
- Consuming bushmeat in the outbreak area.
- Travel restrictions: advance notification to DPH is required. DPH to notify destination and dates of travel to health department.
- Notify ACDC immediately if fever or other symptoms develop at 213-240-7941. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.
- For life threatening emergency, call 911 and inform travel history and being monitored by DPH.
- Daily monitoring log ([Form D](#)) is available as a resource for contact if needed.

3. Some Risk – Present in Designated Marburg Outbreak Area and Reports NO Situations with Additional Exposure Potential, and no High-Risk Exposures,:

- Reports no High-Risk exposures: [CDC Interim Guidance High Risk Exposures](#) (see Box 2.) **and**
- Reports no [situation with Additional Exposure Potential](#) **and**
- Having been in a designated Marburg outbreak area within the previous 21 days [CDC Interim Guidance High Risk Exposures](#) (See Box 1.)

a. Symptomatic:

- Clinical criteria, which includes fever of $\geq 100.4^{\circ}\text{F}/38.0^{\circ}\text{C}$, OR any of the following symptoms: severe headache, muscle pain, joint pain, sore throat, nausea, vomiting,



- diarrhea, abdominal pain, jaundice, unexplained bruising or bleeding, skin rash, inflammation of the pancreas, severe weight loss, delirium, shock, liver failure, or multi-organ dysfunction.
 - Call ACDC doctor on call (AOD) at 213-240-7941 immediately for consultation. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.
 - ACDC will assess the situation and determine if need to admit and isolate patient for medical examination, perform Marburg virus testing, and conduct contact tracing.
 - Health Officer Order of Isolation may be considered if necessary to ensure compliance.
- b. Asymptomatic:
- Instruct contact to self-monitor for fever and MVD symptoms until 21 days after departure from OB area. Daily monitoring log ([Form D](#)) is available as a resource for contact if needed.
 - DPH will conduct symptom monitoring at the end of the 21-day period.
 - Travel restrictions: advance notification to DPH is required. DPH to notify destination and dates of travel to health department.
 - Notify ACDC immediately if fever or other symptoms develop at 213-240-7941. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.
 - For life threatening emergency, call 911 and inform travel history and being monitored by DPH.
4. **Low risk (but not zero) – Presence in Country with Marburg Outbreak but not in a Designated Marburg Outbreak Area:**
- Having been in a country with widespread Marburg transmission within the previous 21 days and reports no High-Risk Exposures and no additional exposure potentials.
- a. Symptomatic:
- Clinical criteria, which includes fever of $\geq 100.4^{\circ}\text{F}/38.0^{\circ}\text{C}$, OR any of the following symptoms: severe headache, muscle pain, joint pain, sore throat, nausea, vomiting, diarrhea, abdominal pain, jaundice, unexplained bruising or bleeding, skin rash, inflammation of the pancreas, severe weight loss, delirium, shock, liver failure, or multi-organ dysfunction.
 - Instruct the contact to call their PCP for medical evaluation and inform of their travel history and being monitored by DPH.
 - For life threatening emergency, call 911 and inform travel history and being monitored by DPH.
 -
- b. Asymptomatic:
- Instruct contact to self-monitor for fever and MVD symptoms until 21 days after departure from OB country. Daily monitoring log ([Form D](#)) is available as a resource for contact if needed.
 - Travel restrictions: none.
 - Instruct the contact to call their PCP for medical evaluation and inform of their travel history and being monitored by DPH.
 - For life threatening emergency, call 911 and inform travel history and being monitored by DPH.
- For Healthcare Workers in US exposed to Marburg patient:**
- Healthcare facility should conduct daily monitoring of all personnel exposed to the case or suspect case.
 - Notify ACDC immediately if fever or other symptoms develop at 213-240-7941. Ask for Physician on Call (AOD) after business hours at (213) 974-1234.
 - If a healthcare worker in a U.S. healthcare facility who was believed to be wearing recommended PPE correctly is diagnosed with Marburg, and no known breach was identified, then all other healthcare workers taking care of the Marburg patient in that facility will be considered in the **High Risk** category.



Isolation and Quarantine

DPH will implement isolation and quarantine measures as needed to assure the public's health. ACDC Director or authorized designee may assume responsibility for initiation of H-455 Request for Legal Intervention and contact Chief, Public Health Investigation (PHI). DPH AOD will determine if legal orders are necessary, coordinate with the DPH Health Officer if available, and contact LAC DPH Chief PHI for execution. Refer to the LAC DPH Legal Order Manual, page 15, 7f, for full guidance.

DIAGNOSTIC PROCEDURES

Marburgvirus testing will be performed only after consultation and approval with ACDC and CDC to determine if the individual meets criteria for testing as a suspect case of MVD. These criteria include:

- Symptoms including measured ($\geq 100.4^{\circ}\text{F}/38.0^{\circ}\text{C}$) or subjective fever, severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage.
- An epidemiological risk factor within the 21 days preceding the onset of symptoms.

Notify the LAC DPH Public Health Laboratory Director prior to collection and transport of any testing for MVD (562-658-1330). Prior approval for testing must be obtained before specimen collection. After hours, weekends, or holidays contact the County Operator and ask for the Public Health Laboratory Director at 213-974-1234.

The LAC DPH Public Health Laboratory (PHL) is authorized to perform molecular testing for MVD. PHL staff will assist in proper Category A specimen packaging and transport of specimens to PHL for testing. All molecular results are confirmed by CDC. Specimens should be collected within > 72 hours after the patient first developed symptoms.

Required specimens for molecular testing are:

- Two (2) whole blood samples collected in plastic lavender top (EDTA) vacutainer tubes. Each tube must contain a minimum of 4 mL blood.

- For pediatric patients, collect 2 tubes of whole blood with a minimum of 1 mL whole blood in a pediatric-sized collection tube preserved with EDTA.

Wear appropriate PPE when collecting clinical specimens from suspect or confirmed cases. Depending on the patient's stage of illness, refer to PPE guidance for healthcare workers during management of clinically stable or clinically unstable patients with suspect or confirmed MVD.

Standard labeling of specimens with a minimum of two patient identifiers and collection date should be followed. Forms required for Marburg diagnostic testing at the LAC DPH Public Health Laboratory include:

- 1) [Public Health Laboratory Test Request Form](#)
- 2) [CDC Form 50.34](#)
- 3) [CDC Viral Special Pathogens Branch Test Request Form](#)

Do not submit specimens in glass containers or attempt to aliquot (separate and remove serum or plasma from the primary collection container). Each whole blood sample should separately be double bagged, stored at $2-8^{\circ}\text{C}$ (do not freeze), and transported on cold packed in separate Category A packaging. PHL staff will assist in packaging of specimen. (One specimen per Category A packaging) Courier should not be used for transport of suspected Marburg specimens. The LAC DPH Public Health Lab will arrange for transport.

Refer to CDC website for the Guidance for Collection, Transport and Submission of Specimens for Marburg Virus Testing (03/31/2023):

<https://www.cdc.gov/vhf/marburg/clinicians/specimens.html>

Consultation for collecting and submitting any additional and/or other specimens (e.g., tissue samples) for MVD testing must be made with PHL Director (562-658-1300). Approval for testing must be made with CDC.

If a patient is determined to meet criteria for marburgvirus testing, the patient is considered a suspect case of MVD and should be managed under isolation precautions until receiving a negative marburgvirus test result on a sample



collected > 72 hours after the patient first developed symptoms.

If the specimen test result is negative and the patient's symptoms have been present for less than three days, a second sample should be collected 72 hours after symptoms and in consultation with ACDC, CDC and PHL.

ROUTINE DIAGNOSTIC (NON-MARBURGVIRUS) TESTING PROCEDURES

Routine testing to monitor the patient's clinical status and diagnostic testing for other potential causes of the patient's illness should be pursued while marburgvirus testing is underway with consultation with ACDC and CDC. If a hospital facility is unable to provide appropriate clinical care and laboratory diagnostic testing for a suspect case of MVD, the patient should be transferred to a facility that is able to provide appropriate management until marburgvirus testing is completed.

Additionally, patients with a marburgvirus infection may present with concurrent infections (e.g. co-infection with malaria). Responsible patient care requires hospitals and laboratories to evaluate patients for other causes of illness, regardless of whether or not marburgvirus testing is indicated.

Laboratories should adhere to protocols compliant with the Occupational Safety and Health Administration (OSHA) blood-borne pathogen standard for blood and other potentially infectious material including proper PPE use to minimize workplace exposure of personnel to bloodborne pathogens. CDC considers the risk of laboratory personnel contracting a marburgvirus or other viral causes of hemorrhagic fevers during routine clinical testing to be low if the laboratory adheres to the safety procedures consistent with the Bloodborne Pathogens Standard.

- a. Clinical Laboratory Testing
 - o Complete blood count (CBC), including differential and platelet count
 - o Sodium, potassium, bicarbonate, blood urea nitrogen, creatinine, and glucose concentrations
 - o Liver function tests

- o Coagulation testing, specifically prothrombin time (PT), expressed as an international normalized ratio (INR)
- o Chemical urinalysis (dipstick)
- o Blood culture for bacterial pathogens. The early initiation of blood cultures may be important, even if the patient will be transported prior to culture results, as blood cultures may be an essential component of the ultimate diagnosis.

Based on clinical evaluation, diagnostic testing for other common causes of acute febrile illness in returning travelers may be indicated, including malaria and common causes of respiratory and gastrointestinal illnesses. If warranted based on presenting symptoms, consider use of multiplex PCR panels that detect common respiratory or gastrointestinal pathogens in addition to evaluation for the following:

- b. Differential Diagnostic may Include but Not Limited to:
 - o Malaria
 - o SAR-CoV-2
 - o Influenza
 - o Respiratory Syncytial Virus
 - o Typhoid Fever

For full guidance, refer to Guidance for U.S. Hospitals and Clinical Laboratories on Performing Routine Diagnostic Testing for Patients with Suspected Marburg Virus Disease website (03/31/2023):

<https://www.cdc.gov/vhf/marburg/clinicians/safe-specimen-management.html>

PREVENTION-EDUCATION

1. Reinforce the importance of ensuring strict infection control practices in healthcare facilities and among healthcare and other ancillary personnel.
2. Regarding Environmental Infection Control for hospitals taking care of patients with suspected or confirmed MVD:
 - a. Environmental services staff (EVS) must wear recommended PPE to protect against direct skin and mucous membrane exposure of cleaning chemicals, contamination, and splashes or spatters during



- environmental cleaning and disinfection activities.
<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/CDPH-PPE-Guidance-MVD.aspx>
- b. Use a [U.S. Environmental Protection Agency \(EPA\)-registered hospital disinfectant](#) with a label claim for an enveloped virus (e.g., Ebola virus) to disinfect environmental surfaces in rooms of patients with suspected or confirmed Marburg virus infection.
 - c. Avoid contamination of reusable porous surfaces that cannot be made single use.
 - d. To reduce exposure among staff to potentially contaminated textiles (cloth products) while laundering, discard all linens, non-fluid-impermeable pillows or mattresses, and textile privacy curtains as a regulated medical waste.
 - e. For full guidance, refer to Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus on the CDC website (10/06/2022):
<https://www.cdc.gov/vhf/ebola/clinicians/cleaning/hospitals.html>
3. Educate healthcare staff on the importance of strict adherence to proper use of standard, contact, droplet, and airborne precautions.

Utilize proper PPE at all times. Healthcare facilities should be providing ongoing training on correct use of recommended PPE for their healthcare workers (including but not limited to: EVS, laboratory staff, or ancillary personnel who may be involved with MVD patient care) with special emphasis on careful and meticulous doffing procedures. This should include a trained observer to monitor for strict infection control practices, and eliminate any possible contamination, self-inoculation, and potential secondary cases of Marburg in healthcare workers.

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/CDPH-PPE-Guidance-EVD.aspx>

4. Educate healthcare workers on the safe specimen handling for routine laboratory diagnostics.
 - a. Minimize routine blood specimen draws and specimen handling.

- b. Clean equipment according to manufacturer's instructions.

Printable Fact sheet:

<https://www.cdc.gov/vhf/marburg/pdf/factsheet.pdf>

5. General Education for Marburg Prevention:
 - a. Wash hands often with soap and water or use an alcohol-based hand sanitizer.
 - b. Avoid close physical contact with suspect or confirmed Marburg patients.
 - c. Gloves and appropriate personal protective equipment should be worn if taking care of suspect case at home.
 - d. Avoid touching items that may have come in contact with a sick person's blood or body fluids, such as clothes, personal items, high touch surfaces, bedding, needles, or medical equipment.
 - e. Avoid touching the body of someone who has died of MVD unless wearing proper personal protective equipment.
 - f. Avoid visiting endemic areas where fruit bats are known to roost, if conducting work or research activities or tourist visits in mines or caves inhabited by fruit bats, wear gloves and other protective clothing (including masks)

<https://www.cdc.gov/vhf/ebola/prevention/index.html>

OTHER RESOURCES:

Guidance for Collection, Transport and Submission of Specimens for Marburgvirus Testing

<https://www.cdc.gov/vhf/marburg/clinicians/specimens.html>

Guidance for U.S. Hospitals and Clinical Laboratories on Performing Routine Diagnostic Testing for Patients with Suspected Marburg Virus Disease*

<https://www.cdc.gov/vhf/marburg/clinicians/safe-specimen-management.html>



Appendix 1. Summary of Management for Contacts/Travelers by Exposure Category

	High Risk	Medium Risk	Some Risk	Low Risk
Symptom monitoring frequency	2x/day self-monitoring DPH conducts daily monitoring	2x/day self-monitoring DPH conducts monitoring midway through and at the end	2x/day self-monitoring DPH conducts monitoring at the end	2x/day self-monitoring
Health education	- Signs and symptoms - When to self-isolate - How to notify ACDC if sx	- Signs and symptoms - When to self-isolate - How to notify ACDC if sx	- Signs and symptoms - When to self-isolate - How to notify ACDC if sx	- Signs and symptoms - When to self-isolate - When to notify PCP
Movement restriction	Quarantine	None	None	None
Travel	Not permitted	Advance notification to ACDC	Advance notification to ACDC	None
If symptomatic during initial interview	Isolate and notify AMD and PHNS	Isolate and notify AMD and PHNS	Isolate and notify AMD and PHNS	Contact/traveler to call PCP for evaluation
If develop symptoms during monitoring period	Contact/traveler to call ACDC	Contact/traveler to call ACDC	Contact/traveler to call ACDC	Contact/traveler to call PCP for evaluation

* Refer to CONTACTS AND EXPOSURE RISK LEVELS above for details