

State of California

Mutual Aid Region III

Regional Infectious Disease Transportation Plan





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1. Background and Facts

Ebola is a viral infection that causes severe illness with a 50-70 percent mortality rate associated with outbreaks that have occurred in Africa. The mortality rate is anticipated to be less with early identification and higher levels of medical care. A vaccine for immunization against Ebola does not currently exist.

The Ebola outbreak in West Africa has increased the possibility of patients with Ebola traveling from the affected countries to the United States. The likelihood of contracting Ebola is extremely low unless a person has direct unprotected contact with the body fluids (like urine, saliva, vomit, sweat, and diarrhea) of a person who is sick with Ebola. The Ebola virus is not transmitted through air, water, or food.

Initial signs and symptoms of Ebola include fever, chills, fatigue, weakness, and muscle aches, followed approximately 4 – 6 days after illness onset by diarrhea, nausea, vomiting, and abdominal pain. Other symptoms such as chest pain, shortness of breath, headache, or confusion, may also develop. Signs and symptoms may become increasingly severe and may include jaundice (yellow skin), severe weight loss, mental confusion, bleeding inside and outside the body, and complications such as shock, and multi-organ failure.

Ebola virus infection can cause severe illness and extra care is needed when coming into direct contact with a recent traveler who has signs and symptoms of Ebola and has travelled from a country with an Ebola outbreak¹. The initial signs and symptoms of Ebola are similar to many other more common diseases found in West Africa (such as malaria and typhoid). Ebola should be considered in anyone with a fever who has traveled to, or lived in, an area where Ebola is present¹. The potential risk posed to first responders and EMS in the U.S. by patients with early, limited symptoms is lower than that from a patient hospitalized with severe Ebola.

The incubation period for Ebola, from exposure to when signs or symptoms appear, ranges from 2 to 21 days (most commonly 8 to 10 days). Any potential Ebola patient with signs or symptoms should be considered infectious, and key safe work practices should be followed, including avoiding:

- Unprotected exposure to blood or body fluids of infected patients through contact with skin, mucous membranes of the eyes, nose, or mouth.
- Injuries with contaminated needles or other sharp objects.
- Aerosol-generating procedures when possible.



Emergency medical services (EMS) personnel, along with other emergency services staff, have a vital role in responding to requests for help, triaging patients, and providing emergency treatment to patients. Unlike patient care in the controlled environment of a hospital or other fixed medical facility, EMS patient care is provided in an uncontrolled environment before getting to a hospital. This setting is often confined to a very small space and frequently requires rapid medical decision making and interventions with limited information. EMS personnel frequently are unable to determine the patient history before having to administer emergency care.

Prehospital providers in the region transport multiple patients each day with fever, vomiting, and diarrhea to emergency care facilities, and it is impossible to determine the exact etiology of these illnesses in the prehospital setting. Regardless of the cause of the illness, EMS providers will obtain a patient history that typically includes the onset and severity of symptoms, medications, history of travel, and potential exposures. The prehospital patient care delivery will usually include stabilization of vital signs, fluid resuscitation, and transport.

Likewise, the measures taken to prepare ourselves to deliver patient care have not changed due to the Ebola epidemic in Africa. The best avenue to protect the patient, the public, and ourselves is to consistently utilize universal precautions. EMS personnel must always don the appropriate personal protective equipment (PPE) and exercise mandatory hand washing during every patient encounter.



2. Definitions and Abbreviations

Definitions:

Communicable Disease – Any disease transmitted from one person or animal to another; also called contagious disease. Sometimes quarantine is required to prevent the spread of disease.

Ebola Risk Patient – A patient who has Ebola risk factors but is not exhibiting any Ebola signs/symptoms.

EMS Screened Possible Ebola Patient – An EMS patient presenting with both Ebola risk factors and signs/symptoms.

Person Under Investigation (PUI) – Includes both EMS Screened Possible Ebola Patients, and patients who self-present to a healthcare facility with both Ebola risk factors and signs/symptoms.

Confirmed Ebola Patient – A patient with laboratory-confirmed diagnostic evidence of Ebola virus infection.

Protected Exposure – The use of appropriate PPE during direct patient care or decontamination activities involving bodily fluid contact.

Abbreviations:

ASPR Assistant Secretary for Preparedness and Response

BCEMS Butte County Emergency Medical Services

CDC Centers for Disease Control and Prevention

CFR Code of Federal Regulations

DOT Department of Transportation

EMS Emergency Medical Services

EOM California Public Health and Medical Emergency Operations Manual

EPA Environmental Protection Agency

EVS Environmental Services

HCP Healthcare Provider

IAB Interagency Board for Equipment Standardization and interoperability

LEMSA Local Emergency Medical Services Agency



LHD Local Health Department

MHOAC Medical Health Operational Area Coordinator

MMCR Mercy Medical Center Redding

OA Operational Area

OES Office of Emergency Services

OSHA Occupational Safety & Health Administration

PAPR Powered Air-Purifying Respirator

PPE Personal Protective Equipment

PSAP Public Safety Answering Point

PUI Person Under Investigation

RDMHS Regional Disaster Medical Health Specialist

SCBA Self-Contained Breathing Apparatus

S-SV EMS Sierra-Sacramento Valley Emergency Medical Services Agency



3. Travelers Actively Monitored by Local Health Departments

With screening being done at points of entry to the U.S. on all international travelers from the high-risk countries of West Africa¹ there should be few, if any, patients who are unknown to local health departments. Local health departments notified of returning travelers with known or potential contact with Ebola patients are requested to notify the LEMSA and RDMHS if contacts are being actively monitored in their jurisdiction. Travelers being actively monitored should be advised to notify local public health officials immediately if they become symptomatic, and to identify their travel history and risk status if they call 9-1-1.

4. Region III Ebola Transport Providers

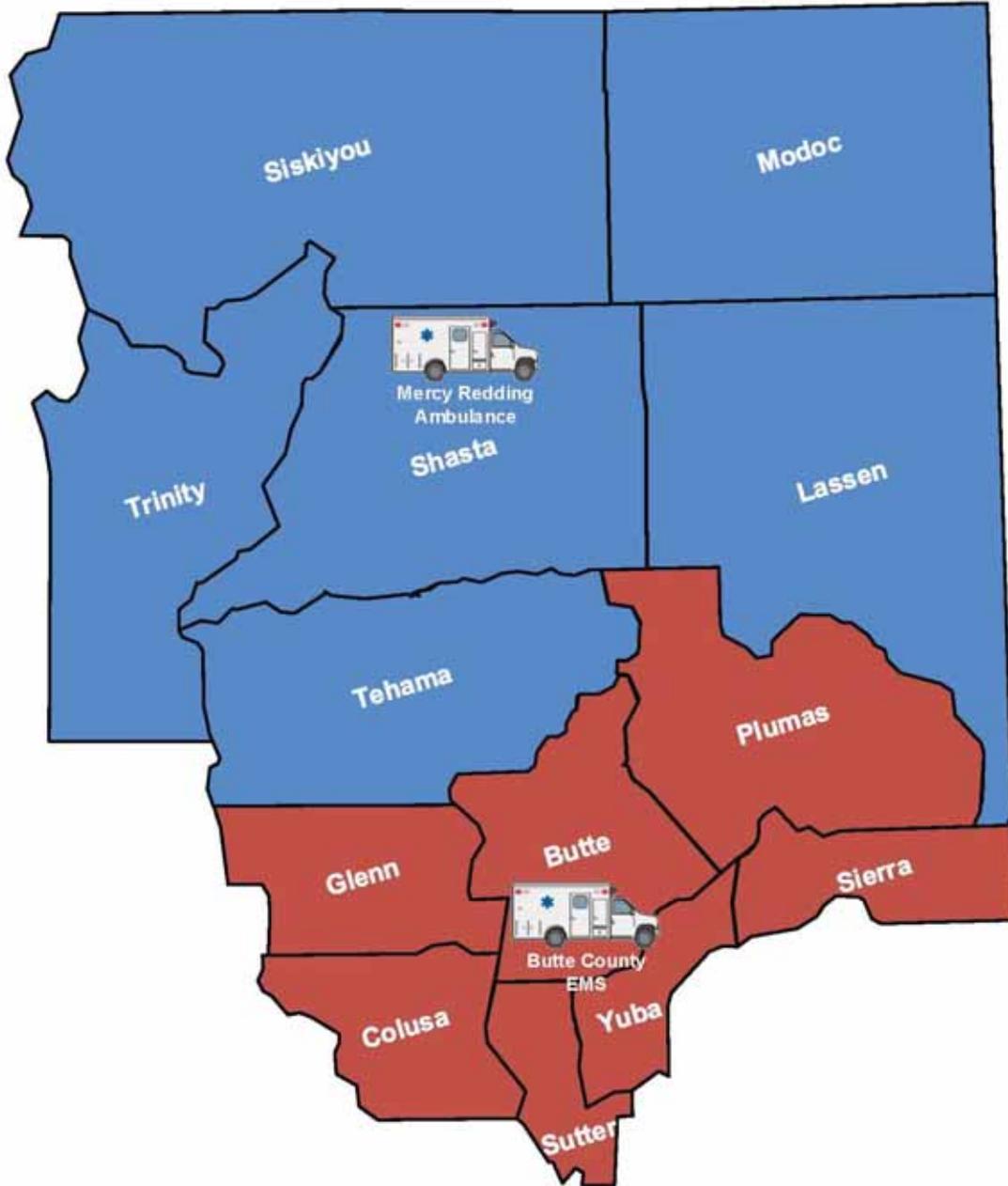
Region III and S-SV EMS have deemed 2 Regional Ebola Transport Providers to provide 24 hour, 365 day coverage to respond to and transport suspected or known Ebola virus disease (EVD) patients as needed. Patients will be transported to predetermined assessment facilities in OES Region III and/or to a treatment facility in OES Region IV. The Regional Ebola Transport Providers have an assigned primary geographical coverage area. They may also be called to cover another geographical area of OES Region III if the primary Regional Ebola Transport Provider for that area is out of service.

- Butte County EMS coverage area includes: Butte, Colusa, Glenn, Plumas, Sierra, Sutter, and Yuba Counties.
- Mercy Medical Center Redding Ambulance coverage area includes: Lassen, Modoc, Siskiyou, Shasta, Tehama, and Trinity Counties.

The 2 Regional Ebola Transport Providers are equipped with all necessary PPE, equipment, and ISO-PODs needed for the transport of a patient with a suspected or known infectious disease. In the event the 2 Regional Ebola Transport Providers are out of service and/or unable to respond, a provider may be utilized from OES Region IV.



Region III Ebola Transport Provider Primary Coverage Areas



Mercy Redding Ambulance Primary Coverage Area (Blue)

Butte County EMS Primary Coverage Area (Red)



5. Patient Assessment Criteria and Precautions

- If PSAP call takers advise that the patient is suspected of having Ebola, EMS personnel should don the PPE appropriate for suspected cases of Ebola before entering the scene.
- During patient assessment and management, EMS personnel should consider Ebola risk factors and signs/symptoms. A relevant exposure history (risk factors) should be taken including:
 - Residence in or travel to a country with widespread Ebola transmission¹ or uncertain control measures within 21 days (3 weeks) of symptom onset, and/or
 - Contact with blood or body fluids of a patient known to have or suspected to have Ebola within 21 days (3 weeks) of symptom onset

Because the signs and symptoms of Ebola may be nonspecific and are present in other infectious and noninfectious conditions which are more frequently encountered in the United States, relevant exposure history (risk factors) should be first elicited to determine whether Ebola should be considered further.

- Patients who meet the above criteria should be questioned further regarding the presence of signs/symptoms of Ebola, including:
 - Fever (subjective or $\geq 100.4^{\circ}\text{F}$), and
 - Headache, fatigue, weakness, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage
- To minimize potential exposure, only one (1) EMS provider should approach the patient and perform the initial screening from at least three (3) feet away from the patient.
- Any patient presenting with both Ebola risk factors and signs/symptoms shall be considered an “EMS Screened Possible Ebola Patient”.
- If, based on the initial screening, the EMS provider suspects the patient could have Ebola then PPE should be donned before coming into close contact with the patient. Keep the other emergency responders further away, while assuring they are still able to support the provider with primary assessment duties.
- No one should have direct contact with a patient who may have Ebola without wearing appropriate (PPE) described in this document.



6. Infection Control - Personal Protective Equipment (PPE)

PPE should be targeted to the level of risk of the patient and the risk of exposure to EMS personnel. The IAB is recognized by CDC and ASPR as a source for additional information on nationally-recognized standards on appropriate PPE for protecting first responder personnel. They have issued guidelines that outline determination of patient risk and appropriate levels of PPE, in addition to clear descriptions of types of PPE that fit the requirements for protection³.

Any confirmed or EMS Screened Possible Ebola Patient shall be presumed to be actively infectious with the Ebola virus and the appropriate level PPE shall be utilized. Based on the clinical presentation of the patient, there are two PPE options:

- If the patient is **not** exhibiting obvious bleeding, vomiting, or diarrhea and there is no concern for bleeding, vomiting, or diarrhea, then EMS personnel should at a minimum wear the following PPE⁴:
 - Face shield and surgical face mask
 - Impermeable gown
 - Two pairs of gloves
- If the patient is exhibiting obvious bleeding, vomiting, or diarrhea or there is concern for potential bleeding, vomiting, or diarrhea then EMS personnel should wear the highest level protection designed to eliminate any and all skin and mucous membrane exposure⁵. Any combination of the below to achieve this requirement is recommended for any confirmed or EMS Screened Possible Ebola Patient:
 - Level C splash protection
 - Full body suit
 - Two pairs of gloves
 - Boots and boot covers (booties)
 - Hooded Face shield or similar, covers front and sides of the face
 - N95 filtering face piece fluid resistant respirator (minimum requirement) or PAPR/SCBA respirator
- If the patient does not meet Ebola screening criteria, then standard PPE for the clinical presentation may be employed.



- PPE should be donned before entering a scene with a suspected Ebola patient and continued to be worn until providers are no longer in contact with the patient. PPE should be carefully donned and doffed under the supervision of a trained observer⁵.
- A confirmed or EMS Screened Possible Ebola Patient who exhibits obvious bleeding, vomiting, copious diarrhea or has a clinical condition that requires invasive or aerosol generating procedures (e.g., intubation, suctioning, active resuscitation) warrants maximal protection⁴. For prolonged ambulance transports of a confirmed or EMS Screened Possible Ebola Patient, a PAPR is recommended.
- If blood, body fluids, secretions, or excretions from a confirmed or EMS Screened Possible Ebola Patient come into direct contact with the EMS provider's unprotected skin or mucous membranes (including PPE breach), then the EMS provider should immediately stop working. They should wash the affected skin surfaces with a cleansing or antiseptic solution and mucous membranes (e.g., conjunctiva) should be irrigated with a large amount of water or eyewash solution, as per usual protocols. All waste should be placed in a biohazard bag. EMS providers should report exposure to an occupational health provider, supervisor or designated infection control officer for immediate care. The crew member will be monitored in coordination with the local health department.

Individual Patient Isolation/Transportation Units (ISO Pods)

Designed for use by EMS, ISO Pods isolate individuals potentially contaminated with communicable infectious diseases such as SARS, avian flu, TB, and Ebola. The ISO POD safely holds patients during EMS interfacility and emergency transport. When connected to the HEPA air filtration system, the ISO Pod creates a negative air pressure environment to protect staff, and decrease risk of transmission.



ISO Pod Features and Benefits:

- Heavy duty and puncture resistant
- Equipped with a 4 CFM blower and rechargeable Li-Ion battery and charger
- Equipped with multiple 4” wide gloved access points allowing access to the patient
- Can be easily placed and secured to a standard ambulance gurney
- Five flexible arches allowing voluminous work and patient space
- Constructed from 18 oz. reinforced FR rated PVC and 16 gauge clear vinyl material
- A zipper that extends the length of the ISO Pod system
- Includes a restraint strap system to secure the patient during transport
- Pass thru ports to allow objects into the ISO Pod
- Ports to allow IV, Oxygen, and other lines access to the patient
- Less than 1-minute setup time
- Weight: 17 lbs.





7. Donning and Doffing PPE

The following principles apply to EMS personnel caring for a confirmed or EMS Screened Possible Ebola Patient.

- Prior to working with these patients, EMS personnel must have received repeated training and have demonstrated competency in performing all Ebola-related infection control practices and procedures (specifically in donning/doffing proper PPE).
- PPE should be carefully donned under observation as specified in the CDC’s “Guidance on Personal Protective Equipment to be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing)”⁵.
- While working in highest level PPE, EMS personnel should have no skin exposed.
- Each step of the PPE donning/doffing procedure must be supervised by a trained observer to ensure proper completion of established PPE protocols. This may be as simple as having one provider don PPE and manage the patient while the other provider does not engage in patient care but serves in the role of trained observer and driver.
- EMS personnel wearing PPE who have cared for the patient must remain in the back of the ambulance and not be the driver.
- PPE should be carefully doffed while under observation, in an area designated by the receiving hospital, and following proper procedures as specified in the CDC’s guidance⁵.
 - Particular attention should be devoted to doffing as the PPE should be considered contaminated.
 - Receiving hospitals should provide a monitor for EMS personnel for doffing PPE.
 - If the hospital does not have personnel available, EMS may use their own trained personnel or request fire department HAZMAT personnel support.
- PPE related to the care of a confirmed or EMS Screened Possible Ebola Patient will be disposed of at the receiving hospital. If patient transportation is not required, local public health and LEMSA officials will provide assistance on disposal of PPE.



8. Ambulance Preparation and Configuration

Ambulance preparation and configuration will vary for each Ebola transport provider. There are general guidelines which should be followed when preparing an ambulance for the transport of a PUI or patient with a known infectious disease.

Ambulance Preparation:

- Ambulances utilized for transport will need to be outfitted to protect the patient compartment and to isolate the back from the front cabin prior to transport. If the patient compartment is isolated, the driver should not need patient care level PPE. Ideally, the ambulance should be staffed by 3 HCPs. (1) Driver, and (2) caregivers.
- Remove and keep nonessential equipment away from the patient, so as to minimize contamination, on the scene and in the ambulance.
- Avoid contamination of reusable porous surfaces that are not designated for single use.
- Use only a mattress and pillow with plastic/other covering that fluids cannot penetrate.
- Cabinetry/shelving, ceiling, seating, and floor should be covered with an impermeable barrier.
- Leave openings around ventilation ports to allow proper air flow and exchange.
- Plastic sheeting should be affixed to the bench seat, jump seat, and walls to create a slight bowl effect in an effort to channel any body fluids towards the center of the floor which will cause fluids to collect in one area.
- The gurney antlers will need to be attached through the plastic sheeting on the floor for safe transport of the gurney and patient.
- The gurney side clamp will need to protrude through the plastic sheeting for safe securement of the gurney.
- Cover rear doors with plastic sheeting and secure.
- All sheeting should overlap prior sheets by a minimum of 1 inch. All seams should be sealed completely by duct tape or another impermeable sealer.

Gurney Preparation:

- Cover mattress pad with fitted impermeable mattress cover. If no impermeable mattress cover is available then use plastic sheeting and overlap each end, sealing with duct tape.



Ambulance Cab Supplies:

- Spare PPE for HCPs.
- Impermeable Decontamination Disposal Sheet.
- Multiple DOT approved Red Biohazard Bags.
- Extra gloves and boot covers.
- Electronics and other equipment that may be positioned outside of the patient compartment.

Pictured: Prepared Ambulance for Transport of an Infectious Disease Patient





9. Patient Management and Treatment

- Use caution when approaching a patient with suspected Ebola. On rare occasions, illness can cause delirium, with erratic behavior (e.g., flailing or staggering) that can place EMS providers at additional risk of exposure.
- Keep the patient separated from other persons as much as possible.
- Conduct appropriate patient assessment according to established protocols, using minimal equipment.
- Limit the number of providers who provide care for a patient with suspected Ebola. All EMS personnel having direct contact with a suspected Ebola patient must wear PPE.
- If patient is vomiting, give them a large red biohazard bag to contain any emesis.
- If patient has profuse diarrhea, consider wrapping the patient in an impermeable sheet to reduce contamination of other surfaces.
- Prehospital treatment for Ebola is supportive. Prehospital personnel should follow their LEMSA's treatment protocols that apply to the patient's specific condition. Prehospital personnel are also encouraged to contact the closest base/modified base hospital for specific patient treatment consultation as needed.
- Only BLS procedures should be performed in the out-of-hospital setting for confirmed or EMS Screened Possible Ebola Patients unless ALS procedures are absolutely necessary based on the patient's condition.
- Limit the use of needles and other sharps as much as possible. Any needles and sharps should be handled with extreme care and disposed in puncture-proof, sealed containers that are specific to the care of this patient, in accordance with OSHA's Bloodborne Pathogens Standard, 29 CFR 1910.1030⁶. Do not dispose of used needles and sharps in containers that have sharps from other patients in them.
- Due to the significant exposure concerns related to the treatment of a known or EMS Screened Possible Ebola Patient, prehospital personnel must weigh the risk/benefit of specific types of treatments. If a known or EMS Screened Possible Ebola Patient is determined to be in cardiac arrest and does not meet the 'Obviously Dead' or 'Probable Death' criteria indicated in LEMSA Determination of Death Policy, basic life support, including defibrillation, shall continue or begin immediately and EMS personnel shall contact the base/modified base hospital for further directions.



- Prehospital resuscitation procedures such as endotracheal intubation, open suctioning of airways, and cardiopulmonary resuscitation frequently result in a large amount of body fluids, such as saliva and vomit. Performing these procedures in a less controlled environment (e.g., moving vehicle) increases risk of exposure for EMS personnel. If conducted on a confirmed or EMS Screened Possible Ebola Patient, perform these procedures under safer circumstances (e.g., stopped vehicle, hospital destination)⁵.

10. Patient Transport and Destination Considerations

Local EMS personnel shall not transport a PUI or confirmed Ebola Patient. If a local EMS unit responds to or is requested to transport a PUI or confirmed Ebola Patient, they are to immediately contact local public health, LEMSA and RDMHS officials to request the appropriate designated Ebola Transport Provider. “Ebola Risk” patients (a patient who has Ebola risk factors but is not exhibiting any Ebola signs/symptoms), may be transported by local EMS in a non-specialized unit utilizing standard PPE precautions for the clinical situation. **The receiving facility shall be notified as soon as possible (prior to transport) for any transport involving the following patients:**

- PUI or confirmed Ebola Patient(s).
- Ebola Risk Patient(s).

The LEMSA and RDMHS will coordinate transportation, in consultation with local public health and prehospital/hospital providers, of any PUI or confirmed Ebola Patient.

Law Enforcement Escort

EMS providers shall notify their local dispatch center to arrange for a law enforcement escort, if deemed necessary due to the possibility of traffic or other impedance.



A. Destination Determination/Communications

Destination determination must be made in consultation with the LHD/MHOAC, LEMSA, RDMHS, and appropriate designated Ebola Transport Provider if a PUI or patient with confirmed Ebola/infectious disease is in need of transport to an Ebola Assessment or Treatment Center. If unable to contact LHD/MHOAC, LEMSA, or RDMHS officials; contact closest base/modified base hospital for physician consultation.

Pickup location, distance and available resources will be the deciding factors in destination determination. Currently there is only (1) Ebola Assessment hospital in Region III, with the closest Ebola Treatment Hospital in neighboring Region IV, as designated by CDC/CDPH/Health Departments/Healthcare Agencies.

Region III Facilities:

- Mercy Medical Center, Redding (Assessment)

Facilities outside Region III:

- University of California, Davis – Region IV (Treatment)
- Kaiser Foundation Hospital, South Sacramento – Region IV (Treatment)
- Kaiser Foundation Hospital, Oakland – Region II (Treatment)
- University of California, San Francisco – Region II (Assessment)

**Ebola Assessment and Treatment hospitals subject to change. Consult CDC website for current list:

<http://www.cdc.gov/vhf/ebola/healthcare-us/preparing/current-treatment-centers.html>

Communications

EMS providers shall utilize cell or landline based phone communications before using over-the-air radios due to the sensitive nature of the information regarding a patient with suspected or known EVD.



External Communication Flowchart for PUI or Patient with Confirmed Ebola/Infectious Disease





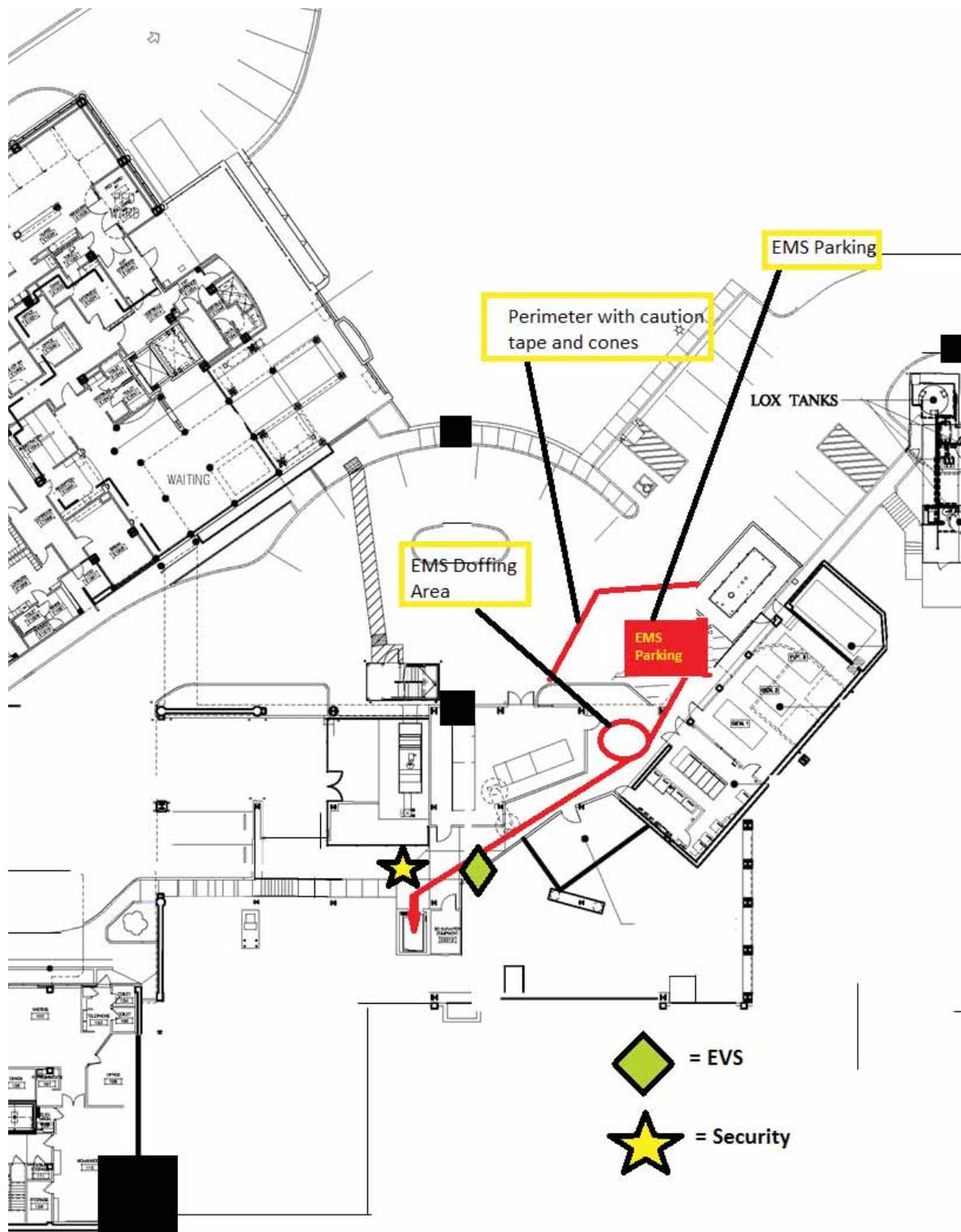
B. Arrival at Destination/Patient Handoff

Hospitals should develop specific protocols for the arrival of Ebola Risk Patients, EMS Screened Possible Ebola Patients, and confirmed Ebola patients. The objective is to develop and maintain a “field of isolation” that would minimize broader contamination of the facility, including care givers, other patients and the public. These protocols should include/address the following:

- EMS personnel should be instructed to stay with the patient in the ambulance until hospital staff are prepared to receive the patient.
- Anticipate patient handoff to hospital staff occurring at the ambulance and not inside the hospital.
- If patient handoff occurs directly in an isolation room in the hospital it may be at a location other than the emergency department.
- Anticipate EMS personnel doffing PPE at the isolation room/anteroom interface or other appropriate location chosen by the hospital staff.
- Coordinate patient handoff with any procedures the hospital may have in place.
- EMS Personnel will doff PPE at the hospital, using the hospital protocol and monitor. If no hospital monitor is available, fire department HAZMAT personnel may be available to monitor, or EMS personnel not in PPE will assist in PPE doffing.
- Hospital staff should collect and provide to the local health department, a list of all personnel in the prehospital setting (law, fire, EMS) who had direct contact with the patient (particularly the patients’ bodily fluids), and the status of appropriate PPE use during such contact, to assist with contact tracing. This information should be provided to the hospital by the EMS transport provider.
- The ambulance utilized for patient transportation shall be decontaminated according to current CDC guidelines and/or local health department instructions prior to being placed back into service.



Mercy Medical Center Redding - EMS Arrival Area Map





C. Waste

All medical waste generated in the care of PUIs or patients with a confirmed infectious disease shall be appropriately bagged and given to hospital staff for disposal according to facility medical waste protocols. Ebola-contaminated waste is considered a Category A infectious substance and must be double bagged.

- Place all waste into a red biohazard bag that meets the federal Department of Transportation (DOT) requirements for impact and tear resistance. Use plastic film bags, 175 liters or smaller (46 Gallons) that weigh no more than 22 lbs., when filled¹⁴.
- Use authorized container for sharps. Wrap sharp edges to prevent puncturing of the plastic bag.
- Do not overfill the biohazard bag. It is suggested that the biohazard bag only be filled with Ebola contaminated waste no more than half of its total volume. This will insure that there is adequate room for staff to securely close the bag with a knot or other equally effective positive means of closure that will not tear or puncture the outer bag and ensure that any liquid contents (if present) will not leak from the packaging.
- After securely tying off the bag, disinfect the exterior surface of the bag with EPA-registered disinfectant, place it into a second red biohazard bag, tie off the second biohazard bag, disinfect the exterior surface of the second bag, and place the combination package into a rigid container with a tight-fitting lid.
- Transfer care of waste to hospital staff who will then transport waste to a dedicated, locked or secure storage area that is not accessible to the public or unauthorized personnel.
- Do not store this waste in an intermediate or publicly used storage area.



D. Decontamination/Disinfection of Ambulance, Equipment, and Personnel

All non-disposable equipment used on the patient will be left at the hospital with the patient, or if not accepted by the hospital, in the ambulance after patient handoff. Medical waste should be appropriately bagged and given to hospital staff for disposal according to Ebola medical waste protocols.

The following are general guidelines for cleaning or maintaining EMS transport vehicles and equipment after transporting a patient with suspected Ebola:

- Personnel performing cleaning and disinfection where body fluids from a patient with suspected Ebola are present (vomit, diarrhea, sweat, urine or blood) should wear PPE as recommended by the CDC⁵.
- If no body fluids from an Ebola patient are present then the following minimal PPE should be worn:
 - Face Shield and surgical face mask.
 - Impermeable gown.
 - Two pairs of gloves.
- 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)^{7,8} to disinfect environmental surfaces of ambulances following transport of patients with suspected or confirmed Ebola virus infection⁹. Cleaning and decontaminating surfaces or objects soiled with blood or body fluids are addressed below. There should be the same careful attention to the safety of the EMS providers during the cleaning and disinfection of the transport vehicle as there is during the care of the patient.
- Patient-care surfaces (including stretchers, railings, door handles, medical equipment control panels, and adjacent flooring, walls and work surfaces), as well as stretcher wheels, brackets, and other areas are likely to become contaminated and should be cleaned and disinfected thoroughly after each transport.
- A blood spill or spill of other body fluid or substance (like urine, saliva, vomit, sweat, and diarrhea) should be managed by personnel wearing correct PPE⁵, and includes removal of bulk spill matter, cleaning of the soiled site, and then disinfecting the site. For large



spills, a chemical disinfectant with sufficient potency is needed to overcome the tendency of proteins in blood and other body substances to neutralize the disinfectant's active ingredient. Follow the chemical disinfectant product's labeled instructions and dispose of the potentially contaminated materials used during the cleaning and disinfecting process as recommended in CDC guidance⁹.

- Contaminated reusable patient care equipment (e.g., glucometer, blood pressure cuff) should be placed in biohazard bags and labeled for cleaning and disinfection or disposal according to agency policies and manufacturer recommendations. Reusable equipment should be cleaned and disinfected according to manufacturer's instructions by trained personnel wearing correct PPE⁵.
- To reduce exposure among staff to potentially contaminated textiles (cloth products) while laundering, discard used linens, non-fluid-impermeable pillows or mattresses as appropriate at the receiving facility.
- DOT regulations prevent an ambulance from being used to transport infectious waste, but a contaminated ambulance and equipment that can be decontaminated are not considered infectious waste.
- Local public health and LEMSA officials will provide technical assistance related to decontamination of EMS equipment as necessary.
- The US military has developed a more detailed protocol related to vehicle and equipment decontamination (Decontamination of Vehicles & Equipment Used for Transportation of Potential Ebola Virus Disease (EVD) Patients or Related Equipment: Technical Information Paper 13-031-0914)¹⁰.

E. Patient Death During Transport

In the event a PUI or patient with a confirmed infectious disease expires during transport follow local protocol regarding patient death during transport:

- For S-SV EMS BLS/ALS providers, refer to Policy No. 820: Determination of Death, Special Information.
- For NorCal EMS BLS/ALS Providers, refer to Policy No. 302: Do Not Resuscitate, Patient Transport.



F. Pediatric Considerations

The following are general guidelines for transporting a pediatric PUI or a child with a known infectious disease:

- Use the child's own car seat for transport, if available. Otherwise, use the EMS transport providers car seat or child restraint system (Pedi-Mate, a restraint that adapts a standard ambulance cot for safe pediatric transport). The car seat will be left with the receiving facility for decontamination or disposal in accordance with CDC's Waste Management Guidelines¹¹. If an EMS transport provider's car seat or Pedi-Mate is used, it will likely be left with the receiving facility and decontaminated or disposed of in accordance with CDC's Waste Management guidelines.
- Invasive procedures, including the use of needles and other sharps, should be kept to a minimum.
- Children should not be put in personal protective equipment (PPE), as it may interfere with the EMS provider's ability to adequately assess the child's clinical status and may restrict access to the child during transport.
- A caregiver may accompany the child only if the child is not exhibiting obvious bleeding, vomiting, or diarrhea. In this document, a caregiver is a child's parent or legal guardian. In the event that a parent or legal guardian cannot be present for transport, they may designate an alternative adult caregiver. The caregiver must be observed and assisted in donning and doffing the PPE as this process requires training and may introduce risk. The caregiver must use the following minimum PPE:
 - A face shield and surgical face mask
 - An impermeable gown
 - Two pairs of gloves
- Caregivers shall not accompany a child in transport if they will be exposed to the child's blood or body fluids, such as vomit or diarrhea.
- Pediatric patients should be transported to a specialty care center with a staffed Pediatric Intensive Care Unit (PICU) whenever possible, which is equipped and able to handle a patient with suspected or known EVD.



11. Post-Incident Prehospital Personnel Monitoring

- The use of appropriate PPE during direct patient care or decontamination activities involving bodily fluid contact constitutes a protected exposure.
- Hospital staff should collect and provide to the local health department, a list of all personnel in the prehospital setting (law, fire, EMS) who had direct contact with the patient (particularly the patients' bodily fluids), and the status of appropriate PPE use during such contact, to assist with contact tracing. This information should be provided to the hospital by the EMS transport provider.
- Personnel monitoring strategies and responsibilities will be determined by the local health department, in coordination with the prehospital provider agency(s), based on the nature of the incident and patient care/decontamination activities.



12. Region III Contact Information

REGION III REGIONAL DISASTER MEDICAL HEALTH COORDINATOR/SPECIALIST

Sierra-Sacramento Valley EMS Agency

Main: (916) 625-1702

On-Call Duty Officer: (916) 625-1710

Email: RDMHS.Region3@ssvems.com

REGION III LOCAL EMERGENCY MEDICAL SERVICES AGENCIES

Sierra-Sacramento Valley EMS Agency

Main: (916) 625-1702

On-Call Duty Officer: (916) 625-1710

Email: RDMHS.Region3@ssvems.com

NorCal EMS Agency

Main: (530) 229-3979

Email: mail@norcalems.org

****Contact Region III RDMHS for Official Use Only Contact List****



13. References

¹2014 Ebola Outbreak in West Africa – Outbreak Distribution Map :

<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/distribution-map.html>

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https://iab.gov/Uploads/IAB%20Ebola%20PPE%20Recommendations_10%2024%2014.pdf

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<http://www.cdc.gov/vhf/ebola/hcp/ed-management-patients-possible-ebola.html>

⁵Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing) (CDC):

<http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>

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⁷US Environmental Protection Agency Office of Pesticide Program, List G: EPA Registered Hospital Disinfectants Effective Against Norovirus (Norwalk-like virus):

http://www.epa.gov/oppad001/list_g_norovirus.pdf

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⁹Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus:

<http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>

¹⁰US Army Decontamination of Vehicles & Equipment Used for Transportation of Potential Ebola Virus Disease (EVD) Patients or Related Equipment – Technical Information Paper 13-031-0914: <http://disasterlit.nlm.nih.gov/record/9182>



¹¹Ebola Associated Waste Management (CDC): <http://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/waste-management.html>

¹²Q&A's about the Transport of Pediatric Patients (<18 years of age) Under Investigation or with Confirmed Ebola (CDC): <http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/transporting-pediatric-patients.html>

¹³Ebola Virus Disease Medical Waste Management – Interim Guidelines (CDPH): <http://www.cdph.ca.gov/certlic/medicalwaste/Documents/MedicalWaste/2013/Ebola%20medical%20waste%20management-CDPH%20interim%20guidance-28%20Oct%202014.pdf>

¹⁴Transporting Infectious Substances (DOT): <http://phmsa.dot.gov/hazmat/transporting-infectious-substances>

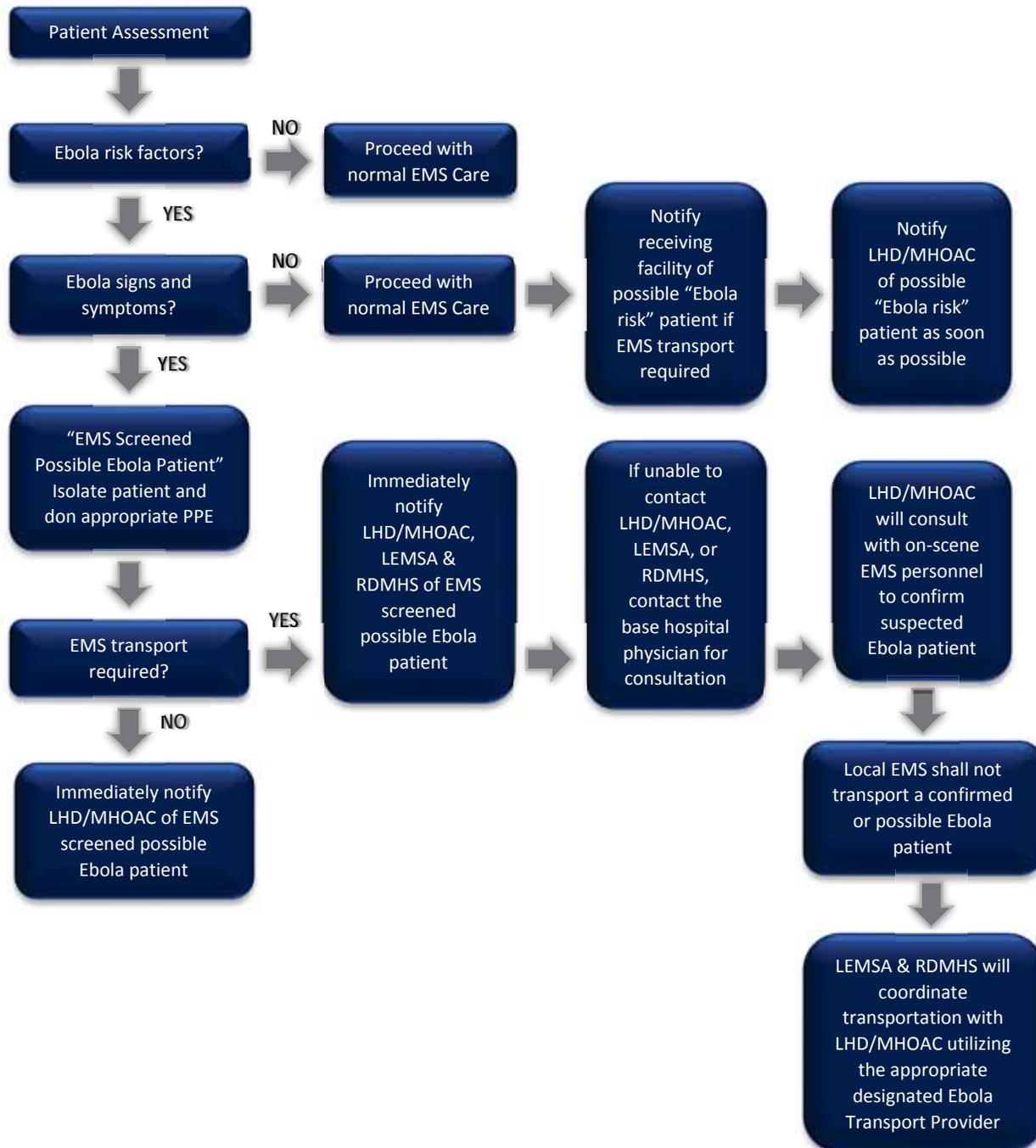
¹⁵Ebola Patient Preparation for Transport, Patient Movement, and Decontamination Procedures (American Medical Response): <https://www.amr.net/resources/ebola/community-partners/ebola-patient-transport-procedures-final-11-11>



APPENDICES



APPENDIX A. EMS Treatment, Transportation & Notification of Suspected Ebola Patients NOT Being Monitored by Local Health Department Officials



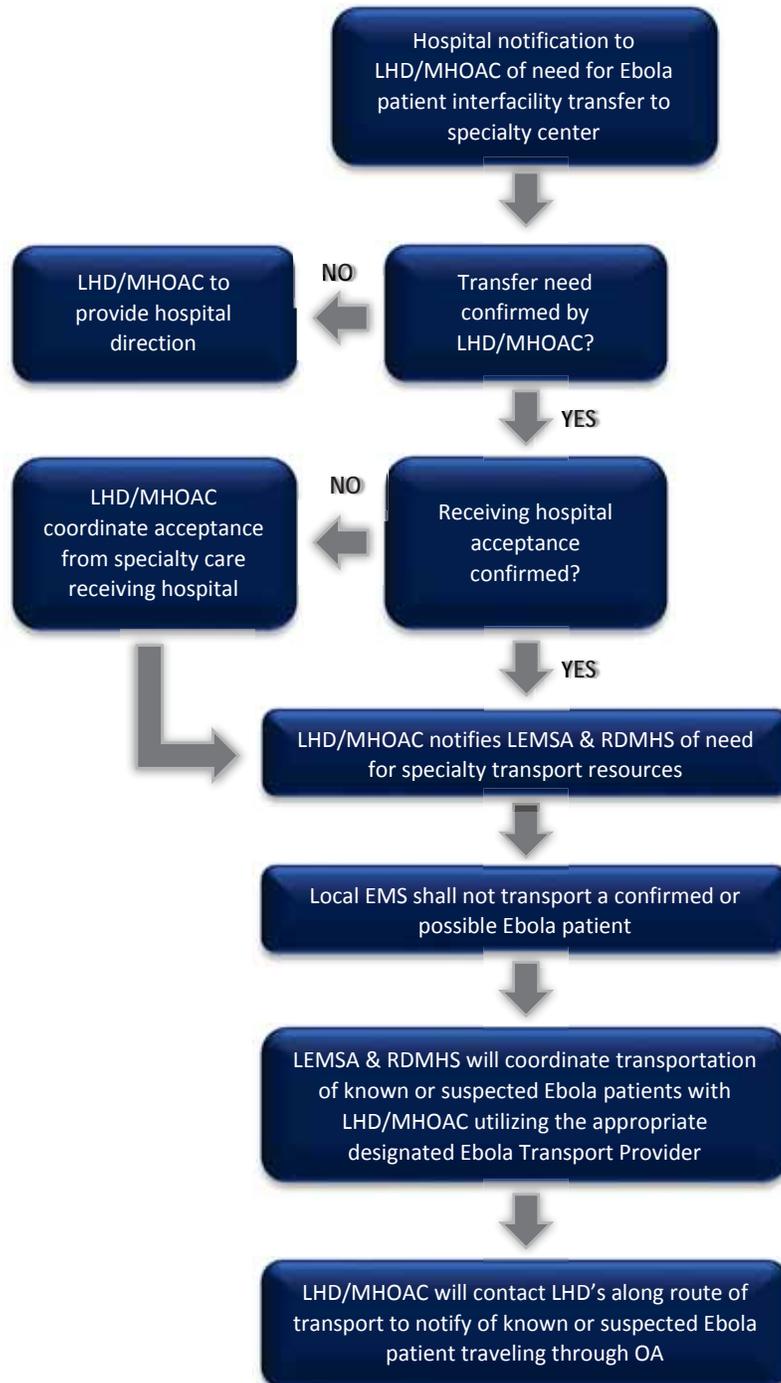


APPENDIX B. EMS Treatment, Transportation & Notification of Suspected Ebola Patients Being Monitored by Local Health Department Officials



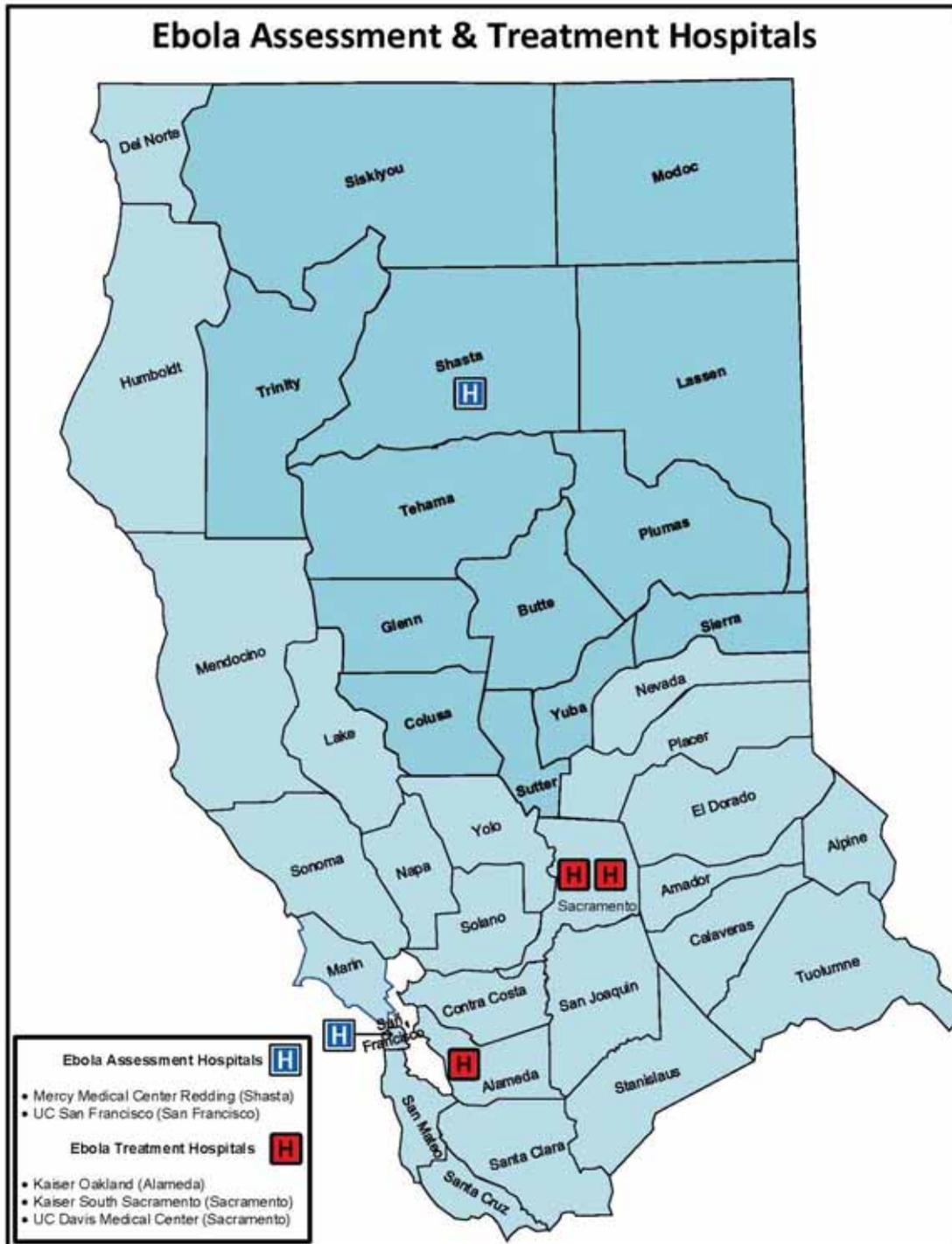


APPENDIX C. EMS Treatment, Transportation & Notification of Known or Suspected Ebola Patients Requiring Interfacility Transport to a Specialty Care Facility





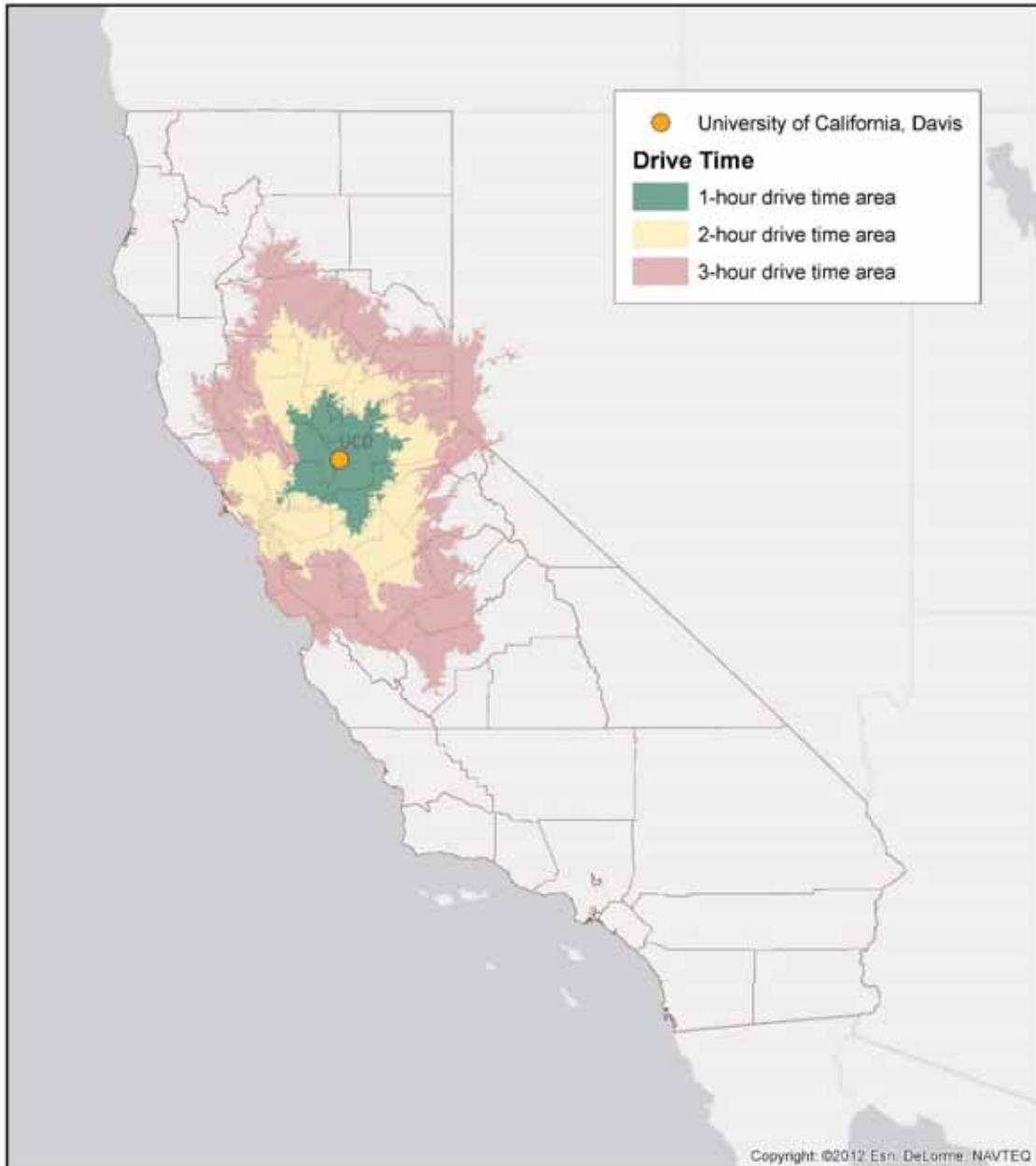
APPENDIX D. Maps of California Ebola Assessment and Treatment Hospitals





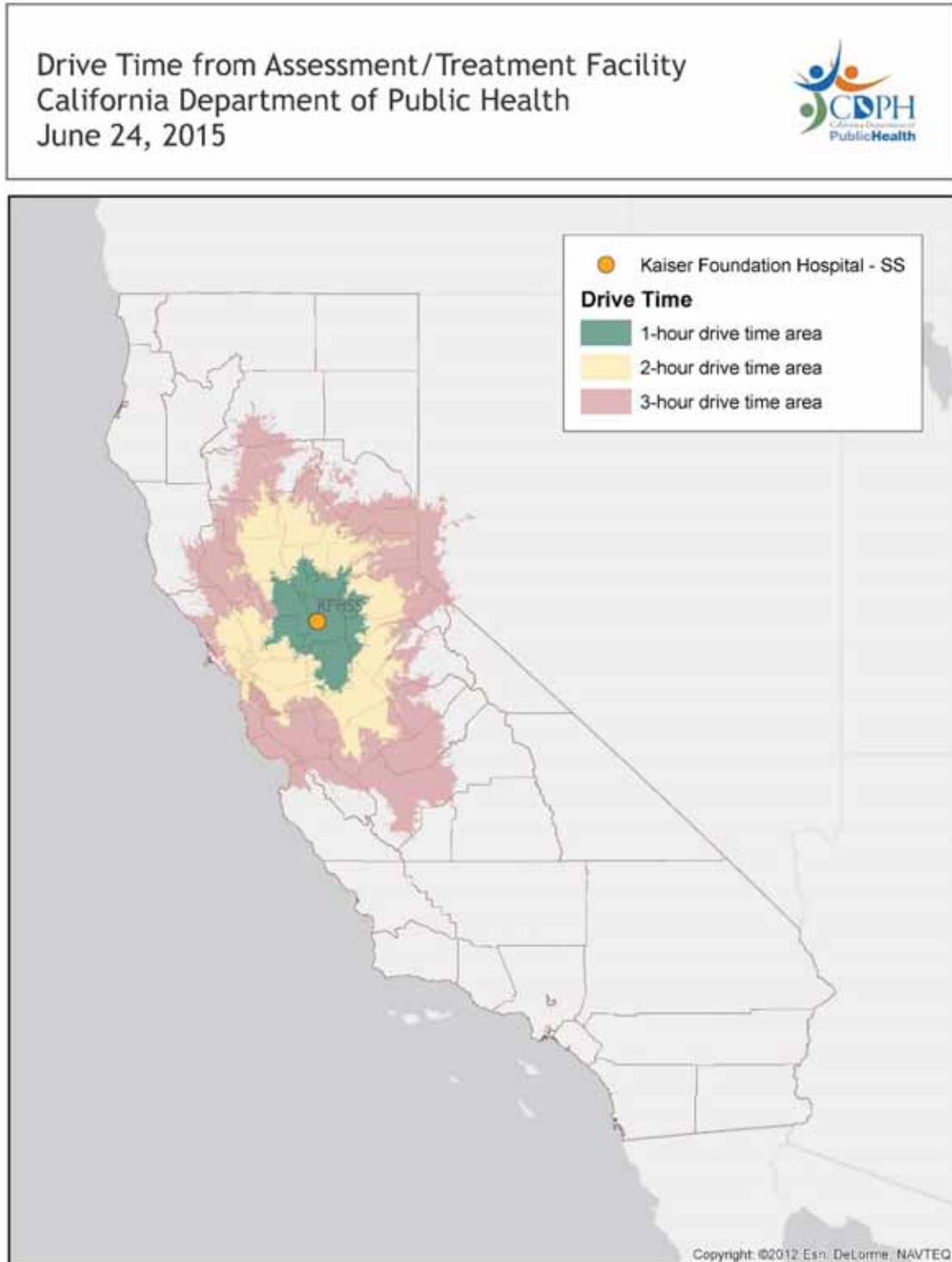
UC Davis Medical Center Drive Time Map

Drive Time from Assessment/Treatment Facility
California Department of Public Health
June 24, 2015





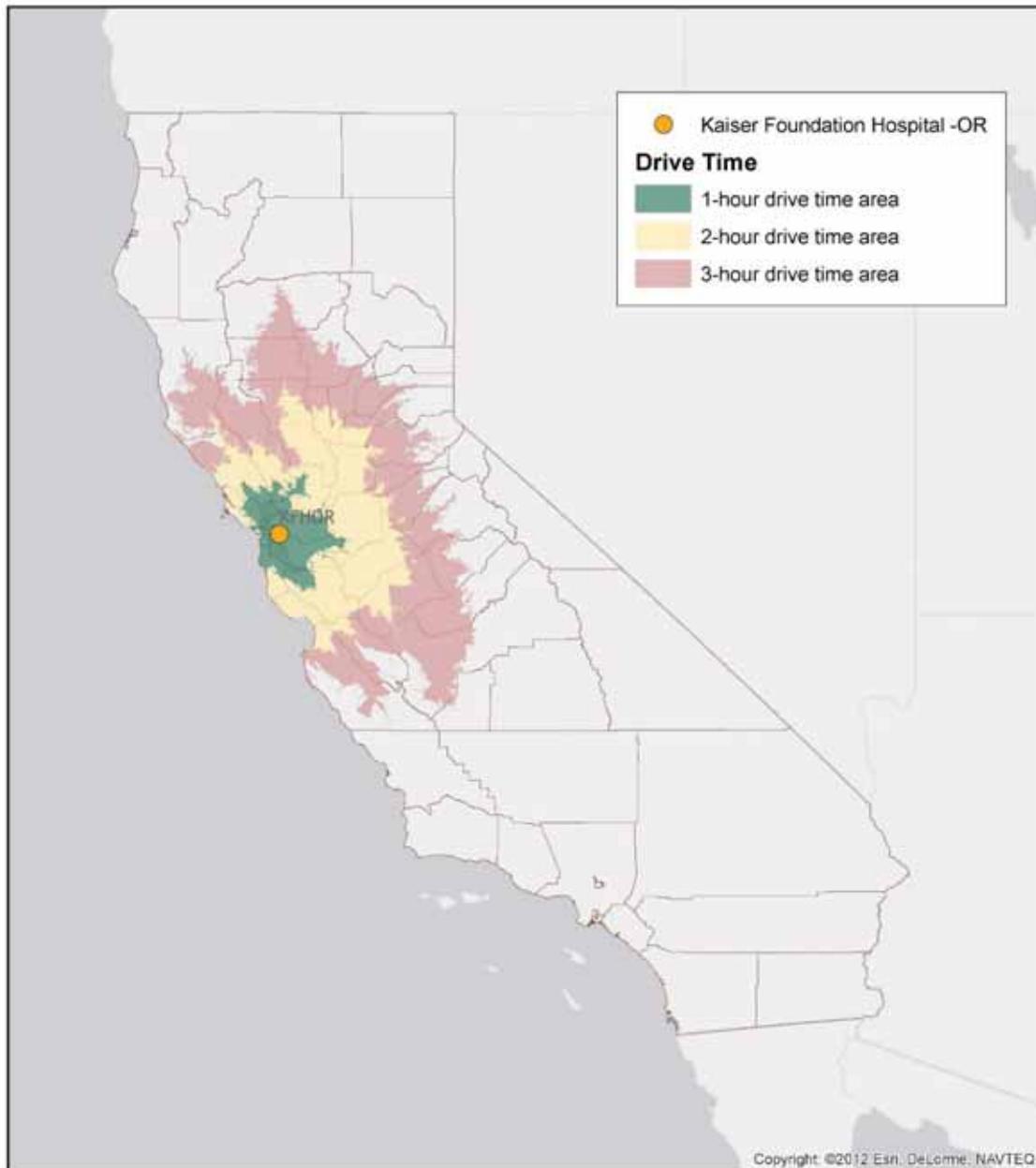
Kaiser Foundation Hospital South Sacramento Drive Time Map





Kaiser Foundation Hospital Oakland Drive Time Map

Drive Time from Assessment/Treatment Facility
California Department of Public Health
June 24, 2015





UC San Francisco Medical Center Drive Time Map

Drive Time from Assessment/Treatment Facility
California Department of Public Health
June 24, 2015

