

Ebola Virus Disease (EVD)
Interim Orange County EMS Response Framework
October 24, 2014

Identification of potential EVD patients

- EVD case definition for EMS:
 - Fever with or without abdominal pain, vomiting, diarrhea or bleeding AND...
 - Travel to or direct physical contact with a person from...
 - Liberia, Guinea or Sierra Leone
 - Within the past 21 days
- Secondary PSAP (Medical Dispatch Point)
 - If criteria for a potential EVD case are identified instruct responding personnel to don PPE before making patient contact
 - The CAD notification will be 'use contact precautions for travel history'
- Field
 - If a potential case is identified during initial patient history-taking, exit, don PPE and resume patient care.
 - Absent secondary PSAP information, inquiring of international travel while approaching a patient from greater than 6 feet distance may quickly determine the need for further questioning and PPE.
 - Subsequent post-incident risk assessment and personnel management decisions will be made in coordination with OC Public Health.

Positive travel history and symptoms consistent with EVD (note that positive travel history with no symptoms does not require PPE)

- Notify OC HCA Duty Officer (714-415-8980)
- Approach using a 'two-in-two-out' strategy
 - Request additional resources as needed for manpower
 - Visqueen or other water-impervious barrier material may be needed for ambulance prep
- Two in: Two personnel don enhanced contact precautions PPE for patient contact
 - Interview patient, refine history
 - Deescalate response if further history taking determines absence of EVD exposure risk in coordination with OC HCA Duty Officer
- Two out: Two personnel stay outside of door/room and make no physical contact with patient or immediate surroundings (6 feet or more and no body fluids)
 - One of those two-out personnel dons enhanced contact precautions PPE if needed to assist the patient contact team
 - Pass only essential, if any, EMS equipment to the patient contact team
 - All equipment used on the patient stays with the patient; use what you need but only what you need for symptom-directed patient care.

- Communicate with receiving hospital early in order to prepare to receive an isolation patient
- Patient care is provided at the BLS level only (no sharps around the PPE)
 - If an identified secondary PSAP EMS Call Type meets BLS dispatch criteria it will be upgraded to ALS for manpower needs
 - Fire/EMS will escort the patient to the hospital in order to provide sufficient manpower to oversee individual safety of personnel as well as provide care for the patient
 - Make base hospital contact.
- If aerosol-generating procedures are necessary in a critical patient wear a P-100 respirator (airway suctioning, BVM)
- Place patient in PPE over-garment and N-95 respirator as tolerated
- Scene turned over to local law enforcement, OC Environmental Health and OC Public Health
 - If there are asymptomatic persons in the same household as the symptomatic patient, to the extent possible keep them in the house/apartment to await OC Public Health. If limited family insists in accompanying the patient dress them in PPE (over-garment and N-95 respirator) and keep them with the patient in the patient compartment of the ambulance.

Ambulance transport

- Drape entire patient compartment with a water-impervious barrier (e.g. Visqueen)
 - Specially configured ambulances may have special-request availability
 - High-containment ambulance gurneys may become available
- All personnel making patient contact accompany the patient in the patient compartment of the ambulance
 - Although direct patient care will be at the BLS level (no sharps around PPE) ECC will dispatch the call at the ALS level for manpower needs. Fire/EMS personnel will escort the patient to the hospital.
- At the completion of the transport place the ambulance out of service for surface disinfection.
 - An ambulance or ET Unit may be kept out of service until confirmatory testing of the patient is negative (which could be hours to days).
 - The owner/operator of the ambulance may choose to use a contractor to disinfect the ambulance and provide environmental surety. Field personnel will not attempt to disinfect the ambulance post-incident.

Hospital patient handoff

- Stay with the patient in the ambulance until the hospital staff is prepared to receive the patient
- Anticipate patient handoff to hospital staff occurring at the ambulance and not inside the hospital
 - If PPE is doffed at the ambulance and biohazard-bagged in the ambulance, that vehicle may be moved off of hospital property and isolated by the transport provider. This process will be coordinated with OC Environmental Health.

- If patient handoff occurs directly in an isolation room in the hospital it may be at a location other than the emergency department
 - Anticipate doffing PPE at the isolation room/anteroom interface or a location chosen by the hospital staff
- Coordinate patient handoff with any procedures the hospital may have in place
- OCFA personnel not in PPE will read the doffing checklist step by step. Anticipate placing additional personnel in PPE to help the patient care/contact team doff PPE if necessary.
- Hospital practices could vary widely so anticipate case-by-case adaptation

Disinfection

- All durable/capital, nondisposable equipment will be disinfected using 0.5% bleach before being returned to service. Use the 1:10 diluted 5% bleach (final dilution 0.5%) provided on the fire apparatus.
- All nondisposable 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

Post-incident personnel monitoring

- The use of PPE constitutes a protected exposure
- Personnel will be identified to OC Public Health/Epidemiology
 - Keep the patient care/contact team (2-in personnel) on the hospital grounds or in the anteroom until OC Public Health has made contact with them.
- In coordination with OC Public Health body temperature will be recorded twice daily and symptoms monitored
- Specific strategies will be determined by the nature of the incident and patient care operations
- The 2-out personnel who did not make patient contact and the fire apparatus would not be considered exposed and would be able to engage in post-incident duties.

Contingencies

- AMA
 - If a patient with a suspicious travel history with or without symptoms refuses care and transport notify local law enforcement and Orange County Public Health Epidemiology at 714-834-8180
- Critically ill patient and body fluids
 - Wrap the patient and remove from the immediately contaminated environment
 - Ambulance crew drapes the patient compartment of the ambulance
- PPE breach
 - If a breach of PPE occurs during patient care the crew member will exit patient care and becomes a patient of the incident
 - Doff PPE and wash and disinfect the exposed area with 0.5% bleach

- Crew member will be transported to a hospital for evaluation and treatment planning in coordination with OC Public Health and notify the provider agency's infectious disease designated officer (OCEMS Policy 330.96).
- Deceased patient
 - Evaluate signs of life (use PPE)
 - Anticipate using ECG monitor cables to remotely observe ECG rhythm then leave the monitor cables with the patient
 - Notify local law enforcement
 - Anticipate doffing PPE at a location removed from the patient's immediate location and leaving it at the scene
- Multiple household exposed but asymptomatic persons
 - To the extent possible keep asymptomatic exposed persons in the residence/location in which they were encountered.
 - If an asymptomatic exposed contact of the patient must accompany the patient to the hospital dress them out in the hooded over-garment and N-95 respirator and transport them with the patient in the patient compartment of the ambulance.

Enhanced Contact Precautions PPE

- Components
 - Water-impervious hooded over-garment
 - Medical gloves, 2 pair
 - Goggles
 - N-95 or P-100 respirator
 - Full-face shield
- Donning
 - Dress in hooded over-garment
 - Put on N-95 or P-100 respirator
 - Pull hood over head, neck and face to cover all skin areas (tape if necessary)
 - Place goggles with straps over hood and assure that the hood, goggles and respirator cover the skin of the entire face
 - Taping may be necessary to cover all skin surfaces
 - Particular care should be taken to cover the eyes, nose and mouth
 - Put on full-face shield
 - Double glove with both sets of glove cuffs extending over the over-garment sleeves
 - Tape them if necessary to prevent skin from becoming exposed
 - Have another person check that all skin areas are covered and the double gloves are tightly over the sleeves of the over-garment with several inches of overlap
 - Under observation extend and flex neck, extend arms, flex at the waist, stoop and squat to be certain the PPE is properly fitted and that no skin becomes exposed

- Doffing
 - Critical moment in patient care provider safety and must be followed exactly under direct supervision and reading of the step-by-step procedure
 - Doffing may occur either by the individual in the PPE or by another personnel in PPE cutting the over-garment (see below)
 - As each PPE component is removed place them in a red biohazard bag
 - Wash outer gloves in 0.5% bleach
 - Remove outer gloves by inserting fingers under cuff and inverting
 - Use the cutting procedure below if tape was used
 - Wash inner gloves in 0.5% bleach
 - Remove face shield
 - Wash inner gloves in 0.5% bleach
 - Remove goggles
 - Wash inner gloves with 0.5% bleach
 - Open front zipper of over-garment
 - Defer if cutting procedure below is used
 - Wash inner gloves in 0.5% bleach
 - Remove over-garment by inverting the sleeves and legs
 - If cutting procedure is used:
 - Have person in PPE stand with feet apart and arms extended outward
 - From behind, a second person in PPE uses clean scissors to cut down the back, down each leg and out along each arm
 - Allow over-garment to fall forward and off of individual
 - Wash inner gloves in 0.5% bleach
 - Remove respirator
 - Wash inner gloves in 0.5% bleach
 - Remove inner gloves
 - Wash hands