
14-0101 – Infectious Disease Control Measures

AUTHORITY:

Health and Safety Code Division 2.5, California Code of Regulations, Title 22, Division 9

Purpose

The purpose of this policy is to state the minimum standards for infection control measures that EMS providers must adhere to for every patient contact. EMS provider agencies may be more stringent on precaution standards as deemed appropriate. With the advent of new emerging infectious diseases this approach to provider safety cannot be stressed enough. Utilization of infectious disease control measures by EMS Providers is essential.

Definitions

1. **Universal/Standard Precautions:** Defined as standard personal protective equipment (PPE) for EMS providers. Universal precautions protect EMS providers from pathogens spread by contact, droplet, airborne, aerosolized, or bloodborne transmission. Universal/standard precautions include the following items that must be worn and actions that must be performed for every patient contact:
 - a. Nitrile gloves
 - b. Eye protection (safety glasses or face shields) for every patient contact.
 - c. Hand-washing after every patient contact with soap and hot water for a minimum of 20 seconds.
 - d. If hand-washing is not possible, use waterless hand sanitizer (temporizing measure) until hands are dry. After hand sanitizer, when possible utilize soap and water.
 - e. With all patients who have a respiratory component to their complaint or exhibit signs of respiratory illness the provider needs to use, at minimum, N-95 or (preferably) P-100 respirators.
2. **Contact Transmission:** Contact transmission occurs through contact with pathogens on the patient's skin or surfaces that the patient has touched, or pathogens contained in bodily fluid/substances/secretions, such as:
 - a. Vomit, feces, and urine
 - b. Draining wounds
 - c. Secretions (saliva, semen, sweat, breast milk)

Universal precautions, with the addition of an impermeable gown if indicated, should be used to prevent contact transmission. Face shield may also be used if fluid projectiles are possible. Please note: depending on the pathogen the viral or bacterial agent may remain infectious on surfaces for prolonged periods of time.

3. **Droplet Transmission:** Droplet transmission occurs through the inhalation or absorption of bodily fluid/substance droplets that contain pathogens, such as:
 - a. Respiratory viruses (e.g. influenza, coronavirus, adenovirus, rhinovirus)
 - b. Pertussis
 - c. Strep throat (*Streptococcus pneumoniae*)
- Universal precautions, with the addition of a N-95 or P-100 respirator, should be used. Face shields and impermeable gowns may also be considered if indicated. Please note: that you can only place a simple mask on these patients to decrease droplet transmission. Never apply a N-95 or P-100 respirator on a patient. This can lead to respiratory depression and cardiac/respiratory arrest.
4. **Airborne Transmission:** Airborne transmission occurs through the inhalation or absorption of air that contain pathogens, such as:
 - a. 1. Tuberculosis
 - b. 2. Measles
 - c. 3. Chickenpox

Universal precautions, with the addition of an N95 respiratory or P100 particle respirator, should be used. Face shield and impermeable gowns may also be considered if indicated. Please note only

place a simple mask on these patients to decrease the airborne pathogens transmission. Never apply a N-95 or P-100 respirator on a patient. This can lead to respiratory depression and cardiac/respiratory arrest.

5. **Aerosolized Transmission:** Aerosolized transmission may occur when bodily fluids/secretions are aerosolized during certain procedures (i.e. nebulizer treatments, CPAP, suctioning, supraglottic airway placement and intubation).

In addition to universal precautions, N95 respirators or P100 particle respirators should be worn. Face shield and impermeable gowns may also be considered if indicated, such as if there is a splash risk.

6. **High Risk Patients:** Defined in Section V, high risk patients have a known or suspected infectious communicable disease. In addition to universal precautions, EMS providers should wear impermeable gowns or suits, N-95 or P-100 respirators, and face shields as needed to limit the risk of accidental fluid/substance transmission. Invasive procedures (i.e. intubation, nebulization, intravenous access, chest compressions, and suctioning) should be limited, unless clinically indicated. If resuscitation efforts are required, EMS providers shall wear an N-95 mask (minimum) and additional PPE should be considered, which includes, but is not limited to, double gloving and wearing disposable shoe covers.

Procedure

1. EMS providers should always be aware of new and emerging diseases, in such cases the agency medical director, in consultation with county health officers will develop guidance regarding current disease profiles and recommendation for appropriate PPE.
2. Put on nitrile gloves and eye protection before every patient contact and wear them until patient transfer is complete. Double gloving is recommended to decrease contamination to the equipment and vehicle. Remove the out most gloves prior to removing other PPE and in health care facilities.
3. Attempt to isolate all high-risk patients from bystander's on-scene.
4. Consider placing a surgical mask on high risk patients if it does not affect their clinical condition and respiratory status. Use in extreme caution with patients who have an underlying pulmonary disease, so as not to increase their respiratory workload.
5. Put on a face shield if the possibility of splash risk exists.
6. Put on an N-95 or P-100 particle respirator in addition to nitrile gloves and eye protection if the patient is deemed high risk:
 - a. The patient requires resuscitation efforts, for example
 - i. LS or ALS airway management
 - ii. Suctioning
 - iii. Respiratory treatments to include : nebulizers treatments and/or CPAP
 - b. Any procedure or disease entity that poses a risk of inhalation of airborne or aerosolized particles.
 - c. The EMS provider deems it appropriate
7. Put on an impermeable gown/suit in addition to nitrile gloves and eye protection if:
 - a. The patient presents with disease pathogens, or biohazards known or suspected to be infectious and transmitted by contact with the patient secretion or bodily fluids. This includes but is not limited to:
 - i. Vomit
 - ii. Blood
 - iii. Feces/Urine
 - iv. Saliva
 - v. Sweat (If patients are suspected or confirmed to have a viral hemorrhagic fever: Ebola, Lassa, and Marburg)
 - vi. The EMS provider deems it appropriate
8. Treat the patient according to the appropriate protocol. Invasive procedures should be limited, whenever possible for patients consider to be high risk, unless clinically indicated.
9. Removal of PPE should be **carefully removed without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials** and placed in a medical waste container or red double bagged and held in a secure location.

10. EMS providers shall wash all areas of their skin that come into contact with patients with soap and hot water for at least 20 seconds. If soap and water is not available, then use hand sanitizer and rub in contaminated areas until dry. Once soap and water are accessible, EMS providers shall wash their hands.
11. After patient transfer is complete:
 - a. Properly dispose of any infectious or possibly infectious material in the appropriate red biohazard bin or bag.
 - b. Clean PPE shall be worn while cleaning and disinfecting the ambulance.
 - c. Clean all surfaces, tools, and equipment (eyewear, stethoscope, etc.) that came in contact with the patient or the patient's bodily fluids/secretions with a 0.5% bleach solution. The dwell time or contact time with the surface or equipment should be 5 to 10 minutes.
 - d. While cleaning the ambulance, tools, and equipment, the ventilation exhaust fan shall be turned on and all windows and doors shall remain open.

Removing Contaminated Personal Protective Equipment

1. To remove contaminated eye protection:
 - a. Remove by the headband (face shield) or ear piece (safety glasses) with gloved hands
 - b. Dispose of eye protection in the appropriate container
2. To remove contaminated masks:
 - a. Grasp the bottom of the mask with a gloved hand, then grab the top ties or elastics and remove.
 - b. Discard in the appropriate container
3. To remove contaminated impermeable gowns/suits:
 - a. With gloved hands, unfasten the gown ties or unzip zipper.
 - b. Pull the gown away from neck and shoulders, touching the inside of gown only.
 - c. Turn the gown inside-out and discard in the appropriate container
4. To remove contaminated gloves:
 - a. It is recommended that providers always double glove.
 - b. Grasp the outside of one glove with opposite gloved hand; peel off
 - c. Hold the removed glove in the gloved hand and slide fingers of the ungloved hand under the remaining glove at the wrist
 - d. Peel off the remaining glove and dispose of it in the appropriate container

High risk Infectious Disease Examples

Note: Many infectious diseases have more than one mode of transmission. For example, most respiratory viruses can be transmitted by both contact and droplet transmission, so both contact and droplet precautions should be utilized.

1. Contact Transmission
 - a. Drug resistant organisms (e.g. Vancomycin Resistant Enterococcus)
 - b. Clostridium difficile
 - c. MRSA
 - d. Rabies
 - e. Vaccinia
 - f. Many respiratory viruses
 - g. Viral Hemorrhagic Fevers (Ebola, Lassa, and Marburg)
2. Droplet Transmission
 - a. Diphtheria
 - b. Meningococcal Disease
 - c. Mumps
 - d. Pertussis
 - e. Plague
 - f. Rubella
 - g. SARS and MERS-CoV

h. Influenza and Influenza-Like Illness (ILI)

- i. An influenza-like illness is any illness that includes: an acute onset of fever (100°F or greater) and an acute onset of cough and/or sore throat.

Patients presenting with ILI may also have:

- Acute onset of shivering/chills
- Acute onset of general malaise
- Nausea, vomiting, and/or diarrhea

3. Airborne Transmission

- a. Measles
- b. Tuberculosis
- c. Chickenpox