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## 101 – Infectious Disease Control Measures

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### Purpose

This policy delineates the minimum standards for infection control measures that EMS providers must adhere to for every patient contact. EMS provider agencies may adopt more stringent infection control standards as deemed appropriate.

### Notes:

All providers need to train on the proper methods of donning and doffing PPE. In certain high risk diseases it may involve trained observers. It is the responsibility of the appropriate provider agency to ensure the education and training of their providers. All training should take place while an observer is present. Please note that these are the minimal level required. It should be noted that OSHA and Cal-OSHA, and CDC requirements may exceed these minimal requirements. It is the provider agency responsibility to keep abreast of changes in these standards by regulatory agencies.

The required bleach solution can be commercially available liquid and/or wipes. The minimal concentration is 0.5% to a maximum of 1%. The dwell (contact time) is between 5 and 10 minutes. Commercially virucidals and bactericidal agents can be used if they are appropriate for the suspected agent(s).

### Definitions

1. **Standard (new term)/Universal (old term) Precautions:** Defined as standard personal protective equipment (PPE) for EMS providers. Universal/standard precautions protect EMS providers from pathogens spread by contact, droplet, airborne, aerosolized, or blood borne 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)
  - 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 until hands are dry. After hand sanitizer, when possible utilize soap and water.
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)Standard/Universal precautions, with the addition of an impermeable gown if indicated, should be used to prevent contact transmission. Face shield and safety glasses may also be used if fluid projectiles are possible.
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 (Group A Streptococcus)  
Standard/Universal precautions, with the addition of a surgical mask, should be used. Face shields and safety glasses and impermeable gowns may also be considered if indicated.
4. **Airborne Transmission:** Airborne transmission occurs through the inhalation or absorption of air that contain pathogens, such as:
- a. Tuberculosis
  - b. Measles
  - c. Chickenpox  
Standard/Universal precautions, with the addition of an N95 respirator or P100 particle respirator, should be used. Face shield and safety glasses and impermeable gowns may also be considered if indicated.
5. **Aerosolized Transmission:** Aerosolized transmission may occur when bodily fluids/secretions are aerosolized during certain procedures (i.e. nebulizer treatments, suctioning, and intubation). In addition to standard/universal precautions, N95 respirators or P100 particle respirators should be worn. Face shield and safety glasses or goggles, and impermeable gowns may also be considered if indicated, especially where 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 standard/universal precautions, EMS providers should wear impermeable gowns, impermeable booties, impermeable leg guards, impermeable head covering or impermeable suits, surgical masks, and face shields and safety glasses as needed to limit the risk of accidental fluid/substance transmission. Impermeable suits may be worn instead of the gown ensemble (gowns, booties, leg guards, and head covering. Surgical masks or N-95 particle or P-100 particle respirators must be worn in addition to the face shield and safety eye equipment. 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 or powered air purifying respirator (PAPR) and additional PPE should be considered.

## 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 (preferably safety glasses before every patient contact and wear them until patient transfer is complete.
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 and safety glasses if the possibility of splash risk exists.
6. Put on a N95 or P100 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. BLS or ALS airway management
    - ii. Suctioning
    - iii. Respiratory treatments

- 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 and additions as outlined earlier /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. Ideally an observer should be present always to help ensure no contamination occurs. For certain disease it may be necessary to decontaminate the PPE prior to removing. This may be accomplished if needed with the aide of hospital personnel.
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 including N-95 mask or PAPR due to higher incidence of aerosolization 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 (range is from 0.5% to 1% and can include the commercially available products. The dwell time or contact time with the surface or equipment should be 5 to 10 minutes.  
The appropriate virucidal or bactericidal solution can be used depending on the infectious disease agent.
  - d. While cleaning the ambulance, tools, and equipment, the ventilation exhaust fan shall be turned on and all windows and doors shall remain open.
12. Removing Contaminated Personal Protective Equipment
- The provider agency should train their personnel following either the Centers for Disease Control (CDC), World Health Organization (WHO), OSHA, or CAL-OSHA guidelines. The CAL-OSHA is the legal standard to which provider agencies will be held to.
13. 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.

**a. Contact Transmission**

- i.** Drug resistant organisms (e.g. VRE)
- ii.** Clostridium difficile
- iii.** MRSA
- iv.** Rabies
- v.** Vaccina
- vi.** Many respiratory viruses
- vii.** Viral Hemorrhagic Fevers (Ebola, Lassa, and Marburg) see specific prevention guidance

**b. Droplet Transmission**

- i.** Diphtheria
- ii.** Meningococcal Disease
- iii.** Mumps
- iv.** Pertussis
- v.** Plague
- vi.** Rubella
- vii.** SARS and MERS-CoV
- viii.** Influenza and Influenza-Like Illness (ILI)

- 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

**c. Airborne Transmission**

- i.** Measles
- ii.** Tuberculosis
- iii.** Chickenpox