

Tempe Fire Department Policies and Procedures
Disinfection and Decontamination Procedures
210.08D
Rev 01-23-09

PURPOSE

This policy addresses and describes decontamination procedures of equipment and clothing. Following these procedures will decrease the risk of cross contamination between equipment, EMS providers and patients.

This procedure outlines cleaning and disinfecting procedures for emergency medical equipment that may be contaminated with blood, body fluids, and other contaminants.

According to the CDC, 5-10 percent of all patients that enter a hospital will develop an iatrogenic (hospital acquired) infection. It is imperative that EMS personnel properly clean and disinfect reusable equipment to minimize the possibility of infection during emergency treatment.

Cleaning and disinfecting reduces the likelihood of infections by reducing the amount of disease causing organisms from equipment and is deemed adequate by the CDC for semi-critical items: equipment that will contact mucous membranes or non-intact skin. Disinfecting is a process that eliminates many or all pathogenic microorganisms on inanimate objects, with the exception of bacterial spores, according to the Association for Practitioners in Infection Control (APIC Guidelines August 1996). Cleaning is defined by APIC as the removal of all foreign materials from objects.

Equipment for invasive procedures that require sterilization (items that will enter tissue or the vascular system or will have blood flow through them) will not be used. In its place the department will provide comparable equipment that is single-use only. These items will be disposed of as contaminated waste after each use instead of being sterilized.

PROCEDURE

All fire stations shall have a designated decontamination area. This area will be used to disinfect contaminated equipment. Cleaning infected equipment in this area will assure isolation of potential infectious agents. Stations will be provided cleaning solutions and necessary cleaning tools.

Before transporting infected items from a scene or hospital to a designated cleaning area, these items shall be placed in a red biohazard bag.

When cleaning contaminated items, proper PPE shall be worn. Appropriate PPE includes those PPE items that will protect against direct or indirect splash exposure (See Policy 210.08B Exposure Precautions Matrix for recommended PPE).

Equipment Disinfecting

Equipment that has been contaminated by a patient's blood or body fluids shall be decontaminated through cleaning and disinfecting or disposed of as contaminated waste.

- Environmental surfaces that have become soiled with blood or body fluids must be cleaned and disinfected using a 1:10 solution of bleach (one part bleach to nine parts water) or approved disinfectant/decontaminant cleaner (Enviroid). If using the bleach solution do not mix the bleach with any other type of cleaning/disinfecting agent. Wear gloves and use disposable paper towels to remove contaminants. After removal of visible material, decontaminate

with bleach solution. Use clean paper towels to wipe bleach from affected area and allow to air dry. Dispose of the used paper towels as contaminated waste. If using the department approved "Surface Disinfectant/Decontaminant Cleaner" (Envirocide), follow the directions on the container for disinfection/decontamination procedures.

- Reusable medical equipment, which does not enter the body or contact non-intact skin, must be cleaned with soap and hot water to remove all foreign materials after patient contact. If the equipment is contaminated with a patient's blood or body fluid, it must be decontaminated after use. Decontamination shall be accomplished by spraying a 1:10 solution of bleach (one part bleach to nine parts water) or by using an approved disinfectant/decontaminant cleaner (Envirocide). This process will inactivate microorganisms such as HIV, HBV, M. Tuberculosis et al. After allowing to soak for a minimum of 10 minutes, rinse with water and allow to air dry before returning to service.
- Equipment that will contact mucous membranes or non-intact skin will be cleaned by scrubbing with soap and hot water to remove foreign matter such as blood or body tissue. Decontamination will be accomplished by:
 - Soaking the equipment in isopropyl alcohol (70%) for 10-30 minutes in an enclosed container or by using an approved disinfectant/decontaminant cleaner (Envirocide).
 - Rinsing with water and drying

This process will remove all foreign material and inactivate microorganisms such as HIV, HBV, and M. tuberculosis ET al., thus reducing the risk of infection.

- BLS equipment will be checked daily for cleanliness and readiness. Items that come into contact with patients will be given special attention in order to have them as clean as possible. The following areas will be checked:
 - Oxygen/EMS Kits - Bags or boxes shall have all surfaces cleaned with soap and water. Dirt and debris will be removed and contents will be orderly and not overstocked.
 - Spine Boards/Keds Boards - Clean with soap and water. Follow disinfecting directions listed above.
 - Suction Unit - Clean with soap and water to remove blood, food, or other particles. Follow disinfecting directions listed above.

Firefighters assigned to the unit will be responsible for cleaning and checking these items on a daily basis.

Company officers will inspect EMS equipment on scheduled rig maintenance days (monthly's).

- Due to the risk of contamination and frequent exposure to body fluids, advanced life support (ALS) equipment will be checked daily for cleanliness and function. This equipment includes monitor, drug box, endotracheal kit, ATV and IV component box. Detailed cleaning is necessary to thoroughly clean these items. Specific areas to be checked will be as follows:
 - Monitor - Paddle handles should be intact and clean of dirt and debris. Paddle face will be clean and disinfected. Contaminated cables should be cleaned after each use. Monitor exterior should be cleaned and free from contaminants, dirt, and debris. Carrying case should be cleaned with soap and water.
 - IV and Drug Boxes - Inside and outside surfaces will be cleaned with soap and water in order to remove dirt and spillage from drug containers or IV solutions.
 - Endotracheal Kits - Cleaning of these items will follow directions listed in this section (isopropyl alcohol soak). Particular attention should be given to laryngoscope blades. Handles may be cleaned with soap and water. Pouches should also be cleaned.

- ATV - Clean external case only using an approved disinfectant/decontaminate cleaner. Do not immerse the ATV in the cleaning solution.

The responsibility for cleaning and disinfecting ALS equipment on a daily basis will be that of the unit's assigned paramedics.

- Disinfection products available from Support Services include:
 - Envirocide surface Disinfectant/Decontaminate Cleaner
 - Isopropyl alcohol (70%)
 - Sodium hypochlorite/bleach (5.25%)
 - Sani-Cloth HB Germicidal Disposable Wipe
 - Opaque spray bottle
 - Scrub brush.
 - Equipment soaking tray
 - Paper towels

Disposable Equipment

Medical equipment identified below that requires sterilization will be disposed of as contaminated waste. The following list includes some of the equipment available that are disposable due to their relatively low cost and difficulty of decontamination required:

- Suction canisters/catheters/tubing - Yankauer/hard, French/soft
- Head immobilizer/C-collars
- Blanket
- Oxygen masks, cannulas, nebulizers, BVM's
- Cric Kits
- OB Kits
- Gloves, masks, sleeves
- Intubation tubes, Tubecheck, Endo lock, OPA's, NPA's
- **Intubation blades**
- IV Catheters, IO Catheters, IV Tubing, IV Fluids
- Bandaging materials, burn sheets
- Armboards, wire splints, air splints

Uniform Disinfection

Clothing that has been contaminated with a patient's blood or body fluids will be disinfected as follows:

- Contaminated clothing, including turnouts, will be changed as soon as possible and washed in detergent and hot water as recommended by the manufacturer.
- Contaminated uniform clothing will be washed at the fire station. Contaminated uniforms will be placed in a plastic bag to prevent any cross contamination of other uniforms, washed separately, and the washing machine should be rinsed with a cup of bleach after clothing is removed from machine. The Department does not recommend the laundering of contaminated clothing at home.
- Boots will be scrubbed with soap and hot water to remove contaminants. Wash the soles of footwear at the medical incident or as soon as possible, if contaminated with blood, body fluids, or other foreign material.

Hand Washing

The CDC states that "hand washing before and after contact with patients is the single most important means of preventing the spread of infection."

Washing your hands after each patient is a must. Use soap and alcohol dispenser or approved waterless hand sanitizer (Preventx) mounted on fire apparatus when other wash facilities are not available.

The Tempe Fire Department recommends that hand washing take a minimum of 30 seconds to properly rid the hands of protein matter, blood, secretions, and other contaminants picked up while handling patients. Vigorous scrubbing is essential.

The following is one suggested method to wash hands:

- Wet hands up to 2-3" above wrists
- Apply hand-cleaning agent. Various agents and soaps are furnished for station use
- Rub hands vigorously to work up lather
- Using rotating motion, apply friction to all surfaces of hands and wrists, including backs of hands, between fingers, and around and under nails. Interlace fingers and rub up and down; continue for 15 seconds.
- Holding hands downward, rinse thoroughly, allowing the water to drop off fingertips.
- Repeat procedure
- Dry hands thoroughly with a paper towel
- Turn off faucet using a clean paper towel so as not to re-contaminate your hands on the dirty faucet handle.

Hand Sanitizer and Antiseptic Skin Protectant

The CDC recommends utilizing "Hand Hygiene". Hand Hygiene is the use of an alcohol based hand rub for routinely decontaminating hands. It is recommended that personnel utilize the approved hand sanitizer and skin protectant (Preventx) to kill germs on their skin and to provide additional protection against disease causing germs. Prophylactic use of this product can provide a protective barrier on the skin prior to coming in contact with a potentially infectious person. Follow manufacturer guidelines for use.

Medical Waste

EMS operations produce medical waste. Medical waste is defined as any waste generated at an EMS scene. Proper disposal depends on whether such waste is contaminated, liquid, solid, or sharp. The purpose of this procedure is to ensure our members' and the public's safety by identifying hazardous medical waste and how to deal with it in a safe manner.

Medical waste contaminated (or suspected of contamination) with blood or other potentially infectious material (OPIM) shall be treated as infectious as all patients are assumed to be infectious.

Solid contaminated waste shall be placed in a red, biohazardous-labeled plastic bag and disposed of into infectious waste containers located in the transporting ambulance or at the receiving hospital. If this is not possible, the biohazard containers at the fire stations should be used.

Disposable equipment shall be disposed of as contaminated waste after patient use.

Non-contaminated waste such as packaging for such supplies as IVs, 4x4s, and tubing should be disposed of in any available garbage/container.

Liquid waste shall be poured into the sewer system through the toilet. DO NOT pour into station sinks. Body fluids in public areas will be flushed with water into a sewer or storm drain.

Extremely soiled, bloody blankets shall be disposed of as contaminated waste, preferably at the hospital.

Sharp medical waste shall be placed in a Sharp Shuttle or container located at the scene. Recapping of contaminated sharps should only occur if there is no Sharp Shuttle or container available. If recapping is the only option, please use the one handed technique as described below:

- Hold IV with one hand
- Place sheath on the ground or flat surface
- Keep second hand clear and manipulate IV into sheath. Mechanical resheathing devices (Point Lok) may also be used.

Blood Cleanup/Washdown on EMS Incidents

Blood at private residences and businesses resulting from the injury will be the responsibility of the homeowner, resident or business owner. TFD crews are to clean and disinfect small amounts of blood relating to paramedic treatment (IV start etc.).

Blood remaining on scene at an EMS incident in public or in public right of ways will be decontaminated with bleach mixture or approved disinfectant/decontaminate and flushed with water.