PURPOSE

It is the goal of the Salt River Fire Department Exposure Control Section to adequately protect all of its members from the risk of transmission of communicable diseases, not only during emergency incidents, but in all work environments.

Salt River Fire Department recognizes the potential exposure of its members to communicable diseases in the performance of their duties. In the emergency care setting, the infectious disease status of patients is frequently unknown by fire department personnel. All patients must be considered infectious. Blood and body fluid precautions must be taken with ALL patients.

To minimize the risk of exposure, the Salt River Fire Department will provide gloves, face masks, gowns and eyeglasses, and will provide necessary cleaning and disinfecting supplies. The Salt River Fire Department will also provide initial instruction and continuing education in preventative health care practices so that firefighters possess a basic awareness of infectious diseases, understand the risks and severity of various types of exposures, and exhibit proper skills in infection control.

Standard prophylactic medical treatment will be given to exposed members and necessary immunizations will be made available to protect firefighters from potentially infectious diseases.

If an exposure occurs the individual is to notify their captain and battalion chief and if the patient is transported it is imperative that the exposed employee notify the following 3 individuals at the receiving facility of the exposure:

- **The attending nurse**
- **The attending physician**
- **The charge nurse**

The captain or battalion chief shall notify the EMS Battalion Chief / exposure officer of the incident and make sure that the employee fills out an exposure incident report.

If the exposed employee requires immediate medical attention the individual shall be seen at the ER, if the incident does not require immediate medical attention the individual shall follow the necessary steps outlined by Human Resources and benefits requiring the filing of an incident report and obtaining the appropriate paperwork for Concentra. Initiation of documentation is the employee's responsibility.

If the patient is transported to SHC the exposed employee can contact the SHC's Infectious Control Officer at 480-882-4388 and Scottsdale Occupational Health Services at 480-882-4770. The exposed employee needs to follow up with occupational health; due to HIPPA they will only release information of the incident to the possible infected employee, not the fire department.

If the facility is not SHC, please speak to the charge nurse for the number for their infectious control officer for follow up.

These procedures are designed to prevent infection from occurring in both patients and Fire Department employees. This goes beyond simple protective measures, such as donning gloves or washing hands. Infection control is a comprehensive proactive approach to managing the risks associated with all communicable diseases.

INFECTIOUS DISEASE TRANSMISSION

Infectious substances are transmitted via an infected person's blood, body fluids visibly contaminated with blood or body fluids which include, but are not limited to: urine, feces, vomitus, saliva, tears, mucus, cerebrospinal fluid, semen, vaginal secretions and placental fluids.

Generally the human skin is a barrier against exposure to infectious substances. However, if the skin has open sores, cuts, or abrasions, this protective barrier becomes a route for transmitting infection. Airborne respiratory secretions from a patient's cough or sneeze also increase the risk of exposure to certain diseases.
Contact with a patient's blood or body fluids visibly contaminated with blood poses the greatest risk of transmitting certain diseases, such as Hepatitis B and C Viruses and AIDS/HIV. The following list describes some diseases that may also be considered an occupational hazard when providing pre-hospital care services.

INFECTION	MODE OF TRAMSMISSION	RISK IN EMT SETTING
AIDS/HIV	blood to blood or mucous membranes	low
HEPATITIS	A fecal to oral	low
HEPATITIS B	blood or body fluid to blood or mucous membranes	high
HEPATITIS C	blood or body fluids to blood or mucous membranes	high
MEASLES	respiratory droplets to mucous membranes	very high
MENINGITIS	respiratory secretions or fecal to oral	low (unless mouth to mouth)
TUBERCULOSIS	airborne	low (if patient is on medication)

PROTECTIVE MEASURES

This procedure outlines protective measures Fire Department personnel should take when treating patients. These protective measures should be taken even if the patient does not have symptoms of a disease. It will be the employee's responsibility to initiate protective measures.

PERSONAL PROTECTIVE MEASURES

Observe UNIVERSAL PRECAUTIONS for all patients:

- use gloves on all patients
- DO NOT re-sheath sharps with two hands
- use a SHARPS container at the site

- wear eye protection
- wash your hands immediately if contaminated with body fluids
- Contaminated waste and equipment must be placed into red bio-hazardous bags and disposed of as waste or disinfected as required by this procedure.
- Ask patients to turn their head away and cover their mouth/nose when coughing or sneezing.
- Wear a surgical mask when appropriate.
- Minimize number of treatment personnel.
- Avoid direct contact with body fluids.
- DO NOT wipe eyes, nose or mouth before washing hands.

HAND WASHING

The Center for Disease Control 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 the patients own washroom or public facilities when possible. Use the soap and alcohol dispensers mounted on ambulance and fire apparatus when other wash facilities are not available.
Salt River Fire Department recommends that hand washing take a minimum of ten (10) 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:

1. Wet hands two or three inches above wrists.
2. Apply hand-cleaning agent. Various agents and soaps are furnished for station use.
3. Rub hands to work up a lather.
4. Using a 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.
5. Holding hands downward, rinse thoroughly, allowing the water to drop off fingertips.
6. Repeat procedure.
7. Dry hands thoroughly with a paper towel.
8. Turn off faucet using a clean paper towel to avoid contaminating your hands on the dirty faucet handle.

HAND PROTECTION

Gloves must be worn when treating any patient where the possibility of coming in direct contact with the patient's body fluids exists. Spare gloves should be kept on your uniform, in the EMS box and on the rig. Grossly contaminated gloves must be discarded into red contaminated waste bags provided. After treating patients, don fresh gloves to keep from contaminating the ambulance.

CLEANING AND DISINFECTION

The procedure outlines cleaning and disinfecting procedures for emergency medical equipment, which may be contaminated with blood, body fluids and other contaminants.
According to the Center for Disease Control (CDC), 5-10 percent of all patients who enter a hospital come down with a hospital acquired infection. This means the patient caught something in the hospital that he did not have prior to admittance.

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 membrane 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, Inc. (APIC) guidelines approved in January, 1990. Cleaning is defined by APIC as the removal of all foreign materials (e.g., soil, organic material) from objects.

Equipment for invasive procedures requiring sterilization (items which will enter tissue or the vascular system or will have blood flow through them) are provided by the Fire Department or receiving hospital. This equipment is single-use only and will be disposed of as contaminated waste instead of being sterilized.

EQUIPMENT DISINFECTION

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

1. Environmental surfaces which 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). Wear gloves and use disposable paper towels to remove contaminants. After removal of visible material, decontaminate with bleach. Use clean paper towels to wipe bleach on affected area and allow to air dry. Dispose of the used paper towels as contaminated waste. Such surfaces include ambulance floors, seats and countertops.

2 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 fluids, it must be decontaminated after cleaning. Decontamination shall be accomplished by complete immersion of large contaminated items in a 1:65 solution of bleach (one quart of bleach in a 15-gallon wash tub full of water) for 10 minutes. Items too large to be immersed, such as backboards or KEDs, shall be decontaminated by spraying a 1:10 solution of bleach (one part bleach to nine parts water). After soaking for a minimum of 10 minutes, rinse with water and allow to air dry before returning to service.

3 Equipment that will contact mucous membranes or non-intact skin shall be cleaned by scrubbing with soap and hot water to remove foreign matter such as blood or body tissues. Decontamination shall be accomplished by:

a. Presoaking in hydrogen peroxide (3%) for 20 minutes in an enclosed container.
b. Soaking the equipment in isopropyl alcohol (70%) for 10-30 minutes in an enclosed container.
c. Double-rinsing with water and drying.

This 3-step process will remove all foreign material and inactivate microorganisms such as HIV, HBV, M. tuberculosis et al, thus reducing the risk of infection.

4 BLS equipment will be checked daily for cleanliness and readiness. Items that come into contact with patients shall be given special attention in order to have them as clean as possible. The following areas shall be checked:

d. Oxygen/EMS Kits - bags or boxes shall have all surfaces cleaned with soap and water. Dirt and debris shall be removed and contents shall be orderly and not overstocked.
e. Mast suits/KED boards - clean with soap and water. Follow disinfecting directions listed in this section.
f. Bag Valve Mask/Suction unit - clean with soap and water to remove blood, food or other particles. Follow disinfecting directions listed in this section.

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

5 ALS Equipment Disinfecting

Due to risk of contamination and frequent exposure to body fluids, Advanced Life Support (ALS) equipment shall be checked daily for cleanliness and function. This equipment includes monitor, drug box, Endotracheal kit and I.V. component box.

Detailed cleaning is necessary to thoroughly clean these items. Disposable brushes shall be used whenever possible. Specific areas to be checked shall be the following:

g. Monitor - Paddle handles should be intact and clean of dirt and debris. Paddle face shall be clean and disinfected. Monitor exterior should be cleaned and free from dirt and debris. Carrying case should be cleaned with soap and water.
h. IV and Drug Boxes - Inside and outside surfaces should be cleaned with soap and water in order to remove dirt and spillage from drug containers or IV solutions.
i. Endotracheal Kits - Cleaning of these items shall follow directions listed in Equipment Disinfection part 3 (hydrogen peroxide presoak and isopropyl alcohol follow-up soak). Particular attention should be given to laryngoscope blades. Handles may be cleaned with soap and water. Tools and pouches should also be cleaned.

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

UNIFORM DISINFECTION

Disinfected as follows:

a. Contaminated clothing, including turnouts, shall be changed as soon as possible and washed in detergent and hot water as recommended by the manufacturer.

b. Contaminated uniform clothing should be pre-washed at the fire station prior to taking home for laundering to reduce passing infection to household members. If not pre-washed, contaminated uniforms should be placed in a plastic bag, washed separately and the washing machine should be rinsed with a cup of bleach after clothing is removed.

c. Boots should 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.

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 insure 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) by body fluids or blood shall be treated as infectious since all patients are assumed to be infectious.

Solid contaminated waste shall be placed in a red, bio-hazardous labeled, plastic bag and disposed of into infectious waste containers located at hospital and fire stations.

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

Ambulance waste containers shall be emptied at the hospital after patient transport.

Non-contaminated waste such as packaging for such supplies as IVs, 4x4s and tubing may 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 may 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.

Extremely soiled, bloody sheets shall remain with the patient at the hospital.

Summary

The preceding procedures are designed for your health and safety. Failure to follow any of the prevention or cleaning and disinfecting procedures puts the health and safety of more than just you at future risk. It is ultimately YOUR responsibility and it is the expectation of everyone else that these are followed. Should you find that there is or has been an omission in this program please contact your supervisor or Battalion Chief immediately.