Chiefs' approval: 5/21/10; R&D recommendation for laryngoscope blades 8/15

I. **POLICY**

A. System EMS personnel shall take reasonable precautions to keep from being occupationally exposed to bloodborne pathogens and/or from acquiring infectious or communicable diseases from patients.

B. The System will consider, and, where appropriate, use effective engineering controls, including safer medical devices, in order to reduce the risk of injury from needlesticks and from other sharp medical instruments (OSHA compliance directive).

C. Patients shall be reasonably protected from acquiring nosocomial infections from the ambulance environment or equipment used on them in the course of EMS care.

D. The EMS System's Exposure Control Plan will be reviewed annually and whenever necessary by the System Advisory Board which includes non-managerial personnel responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls. This review shall reflect new or modified tasks and procedures which affect occupational exposure. The review and update shall also "(A) reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and (B) document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure." (OSHA BBP standard required under the Needlestick Safety and Prevention Act).

E. Based on state and Federal law, every hospital is required to provide notification to the Designated Infection Control Officer (DICO) of the emergency response employees (i.e. police officers, firefighters, emergency medical technicians, and ambulance personnel) who have provided or are about to provide emergency care or life support services to a patient who has been diagnosed as having a dangerous communicable or infectious disease.

F. **Supporting rationale**

1. Patients who do not appear to be infected may contaminate the ambulance by droplets or by direct contact, even though no evidence of contamination is apparent. Examples include contamination with mites (scabies), lice, herpetic lesions or fungal infections of exposed skin and infections where surface contamination of the interior of the ambulance in the immediate vicinity of the patient may have occurred.

2. Other pathogens, such as HIV, Hepatitis B or C, may be transmitted by contact with the patients' blood and/or selected body secretions.

3. According to the Centers for Disease Control and Prevention (CDC), providers of prehospital care are at no greater risk of contracting HBV or AIDS than are emergency care providers who perform their work in a hospital environment, if appropriate precautions are taken.

G. **EMS personnel are advised to treat *all* patients as potential carriers of infectious diseases and are instructed to observe Universal Blood and Body Secretion Precautions as outlined by the CDC on *all* patients.**

H. Individual employer Engineering Control Practices that address exposure procedures unique to that agency should supplement this policy.

II. **DEFINITIONS**

A. **Appropriate safer medical device**: Devices whose use, based on reasonable judgment in individual cases, will not jeopardize patient or employee safety or be medically contraindicated.

B. **Blood:** Human blood, blood components and products made from human blood. Human blood components include plasma, platelets, and serosanguinous fluids such as exudates from wounds.

C. **Bloodborne pathogen:** While HIV and HBV are identified in the OSHA standards, the term includes any pathogenic microorganism that is present in human blood and can infect and cause disease in persons who are exposed to blood containing the pathogen.

D. **Cleaning:** The physical removal of dirt and debris, which generally is accomplished with soap and water and physical scrubbing.

E. **Contaminated:** The presence or the reasonably anticipated presence of blood, body fluids, or other potentially infectious materials on an item or surface.

F. **Contaminated Sharps:** Any contaminated object that can penetrate the skin including, but not limited to, needles, lancets, scalpels, broken glass, jagged metal, or other debris.

G. **Decontamination:** The use of physical or chemical means to remove, inactivate, or destroy bloodborne, airborne, or foodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal (NFPA 1581, 2005).

H. **Disinfection** means the use of a chemical procedure that eliminates virtually all recognized pathogenic microorganisms but not necessarily all microbial forms (e.g., bacterial endospores) on inanimate objects. There are three levels of disinfection: high, intermediate, and low. High-level disinfection kills all organisms, except high levels of bacterial spores, and is effected with a chemical germicide cleared for marketing as a sterilant by the Food and Drug Administration. Intermediate-level disinfection kills mycobacteria, most viruses, and bacteria with a chemical germicide registered as a "tuberculocide" by the Environmental Protection Agency (EPA). Low-level disinfection kills some viruses and bacteria with a chemical germicide registered as a hospital disinfectant by the EPA (CDC). Reusable devices or items that touch mucous membranes should, at a minimum, receive high-level disinfection between patients. These devices include respiratory therapy equipment such as laryngoscope blades. Instruments and non-disposable respiratory devices must be disassembled, cleaned of obvious contaminants, and soaked in, an EPA and FDA approved solution, for the prescribed times per manufacturer's instructions. (e.g. Metri-cide OPA by Aseptic Control Products).

I. **Engineering controls**: All control measures (e.g. sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove a bloodborne pathogens hazard from the workplace and reduce the risk of percutaneous exposure to bloodborne pathogens.

J. **Environmental Surface:** Interior patient care areas, both stationary and in vehicles, and other surfaces not designed for intrusive contact with the patient or contact with mucosal tissue.

K. **Exposure incident:** Means a specific eye, mouth or other mucous membrane, non-intact skin, or parenteral contact with blood, body fluids, or other potentially infectious material; inhalation of airborne pathogens, or ingestion of foodborne pathogens or toxins. Non-intact skin includes skin with dermatitis, hang-nails, cuts, abrasions, chaffing, etc.

L. **Fluid-Resistant Clothing:** Clothing worn for the purpose of isolating parts of the wearer's body from contact with body fluids.

M. **Infection Control Program:** The EMS agency's formal policy and implementation of procedures relating to the control of infectious and communicable disease hazards where employees, patients, or the general public could be exposed to blood, body fluids, or other potentially infectious materials in the agency's work environment. [NFPA **1500**, 2002]

N. **Leakproof Bags:** Bags that are sufficiently sturdy to prevent tearing or breaking and can be sealed securely to prevent leakage and that are red in color or display the universal biohazard symbol.

O. **Medical Waste:** Items to be disposed of that have been contaminated with human waste, blood, or body fluids, or human waste, human tissue, blood, or body fluids for which special handling precautions are necessary.

P. **Needleless system:** A device that does not use needles for: (A) the collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established; (B) the administration of medication or fluids; or (C) any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.

Q. **Occupational Exposure:** An exposure incident that resulted from performance of a person's work-related duties.

R. **Other Potentially Infectious Materials (OPIM)**: Any body fluid that is visibly contaminated with blood; all body fluids in situations where it is difficult or impossible to differentiate between body fluids; sputum, saliva, and other respiratory secretions; and any unfixed tissue or organ from a living or dead human. These include the following: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, peritoneal fluid, amniotic fluid, pleural fluid, saliva where there has been mouth trauma. Coverage of this definition also extends to blood and tissues of animals that are deliberately infected with HIV or HBV.

S. **Patient:** An individual, living or dead, whose body fluids, tissues, or organs could be a source of exposure to the member.

T. **Post-Exposure Prophylaxis:** Administration of a medication to prevent development of an infectious disease following known or suspected exposure to that disease.

U. **Regulated Waste:** Liquid or semi-liquid blood, body fluids, or other potentially infectious materials; contaminated items that would release blood, body fluids, or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood, body fluids, or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood, body fluids, or OPIM.

V. **Sharps with engineered sharps injury protections:** A non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

W. **Sharps Containers:** Containers that are closable, puncture-resistant, disposable, and leak-proof on the sides and bottom; red in color or display the universal biohazard symbol; and designed to store sharp objects after use.

X. **Source Individual:** Any individual, living or dead, whose blood, body fluids, or other potentially infectious materials has been a source of occupational exposure.

Y. **Splash-Resistant Eyewear:** Safety glasses, prescription eyewear with protective side shields, goggles, or chin-length face shields that, when worn properly, provide limited protection against splashes, spray, spatters, or droplets of body fluids. [NFPA 1999, 2003]

Z. **Sterilization** means the use of a physical or chemical procedure to destroy all microbial life, including highly resistant bacterial endospores. The major sterilizing agents used in hospitals are a) moist heat by steam autoclaving, b) ethylene oxide gas, and c) dry heat. However, there are a variety of chemical germicides (sterilants) that have been used for purposes of reprocessing reusable heat-sensitive medical devices and appear to be effective when used appropriately, i.e., according to manufacturer's instructions. These chemicals are rarely used for sterilization, but appear to be effective for high-level disinfection of medical devices that come into contact with mucous membranes during use (e.g., flexible fiberoptic endoscopes). In general, reusable medical devices or patient-care equipment that enters normally sterile tissue or the vascular system or through which blood flows should be sterilized before each use (CDC).

III. **UNIVERSAL BLOOD AND BODY FLUID PRECAUTIONS**

A. **Universal Precautions:** An approach to infection control in which human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens (NFPA). Use of **personal protective equipment (PPE)**/body substance isolation (BSI) reduces the risk of exposure to potentially infective materials. They shall be used based on the anticipated exposure to blood or OPIM.

B. **RISKY BODY FLUIDS TO WHICH UNIVERSAL PRECAUTIONS APPLY**

1. Blood and other body fluids containing visible blood
2. OPIM: Semen and vaginal secretions, tissues and the following fluids: cerebral spinal fluid, synovial, pleural, peritoneal, pericardial, and amniotic fluids.

C. **Examples of PPE/BSI:** Single use disposable vinyl or latex-free gloves, utility gloves, fluid repellent gowns, surgical face masks, N-95 filtration masks, pocket masks, and splash-resistant eyewear with solid side shields.

D. **BSI (Body substance isolation):** Protective equipment shall be considered appropriate only if it does not permit blood or OPIM to pass through or reach the person's clothing, skin, eyes, mouth or other mucous membranes under normal conditions of use and for the duration of time in which the protective equipment shall be used.

IV. **Indications for use of PPE/BSI**

A. **PPE** (Personal protective equipment) shall be carried on all ambulances and alternate response vehicles. The size, quantity, and type of equipment provided by the employer shall be sufficient to supply all employees expected to respond to an incident where BSI is indicated.

B. All EMS responders shall use appropriate PPE/BSI to prevent skin and mucous membrane exposure when contact with blood or other body secretions is anticipated. The only exception is if they temporarily and briefly decline to use PPE when, under rare and extraordinary circumstances, it was the person's professional judgment, that in the specific instance its use would have prevented the delivery of health care, public safety services or would have posed an increased hazard to the safety of the EMT or co-worker. When the EMS responder makes this judgment, the circumstances shall be reported according to the employer's guidelines. This particular clause should not be used to circumvent the guidelines on a routine or customary basis.

C. Universal precautions are intended to supplement rather than replace recommendations for routine infection control, such as hand washing and using gloves to prevent gross microbial contamination of the hands. Because it is impractical to specify the types of barriers needed for every possible clinical situation, common sense and prudent judgment must be exercised.

D. **Gloves**

1. Gloves shall be worn for touching blood and body fluids, mucous membranes or non-intact skin of all patients, for handling items or surfaces soiled with blood or body fluids, and for performing venipuncture and other invasive procedures, i.e., intubation, cricothyrotomy, pleural decompression, etc.
2. They are not necessary for all patient contacts. Gloves are not routinely indicated in the absence of blood or body fluids or on patients for whom invasive procedures are not performed.
3. Gloves must be changed after contact with each patient.
4. Remove gloves as soon as possible after caring for a patient. Medical gloves should not be worn in elevators or public hallways after a patient has been delivered to the ED or their destination.
5. Gloves should reduce the incidence of contamination of hands, but they cannot prevent penetrating injuries due to needles or other sharp implements.

E. **Masks and splash resistant eyewear or face shields** shall be worn in the patient care compartment and when working within 6 feet of a patient who is suspected of having a disease transmitted by droplets. They shall also be worn during procedures that are likely to generate droplets or a spray of blood or release of other body fluids to prevent exposure of mucous membranes of the mouth, nose and eyes. N-95 face masks shall be worn whenever there is a possibility of TB, SARS or influenza-type illness exposure unless alternate guidelines are issued by the EMS MD.

F. **Fluid repellent gowns or aprons** shall be worn during procedures that are likely to generate splashes of blood or other body fluids.

G. Scrupulous precautions are indicated for care of the **debilitated patient** who is unable to practice good hygiene, such as the patient with profuse diarrhea, fecal incontinence, vomiting, altered behavior which may occur secondary to central nervous system infections or those patients whose social habits place them in one of the high risk behavior groups, and it is foreseeable that they may be harboring an infection, i.e., intravenous drug users.

H. **Vaginal deliveries**: Gloves, gowns, masks and protective eyewear should be worn during the delivery and when handling the placenta or the infant until all blood and amniotic fluid have been removed or covered with fluid-repellent barriers.

V. **Hand washing**

A. Hands and other skin surfaces should be washed immediately and thoroughly with soap and water if visibly dirty, or contaminated with blood or other body fluids.

B. Decontaminate hands prior to inserting peripheral vascular catheters or other invasive devices that do not require a surgical procedure.

C. Disposable gloves are not completely impermeable. Hands must be thoroughly washed or decontaminated with an approved disinfective product after gloves have been removed.

D. If hands are not visibly soiled and/or in the absence of soap and water, the CDC recommends an alcohol-based hand rub. Storage and dispenser placement of alcohol based hand rubs will be in compliance with regulations for Class I flammable agents, with NFPA 100 requirements and with all applicable codes. Use of these products should not be considered as a substitute for hand washing when available.

E. During outbreaks of communicable diseases, wash hands with soap and water immediately after removing gloves instead of only using the alcohol-based waterless sanitizer if suspected or confirmed disease.

F. For all other hand hygiene indications refer to the 2002 HICPAC Guideline for Hand Hygiene in Health-Care Settings: http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf).

G. **Hand hygiene technique**

1. When washing hands with soap and water, wet hands first with warm water, apply an amount of product recommended by the manufacturer to hands and rub together vigorously for at least 15 seconds, covering all surfaces and the hands and fingers. Rinse hands with water and dry thoroughly with a disposable towel. Use towel to turn off the faucet. Avoid using hot water, because repeated exposure to hot water may increase the risk of dermatitis.

2. When decontaminating hands with an alcohol-based hand rub, apply product to palm of one hand and rub hands together, covering all surfaces of hands and fingers, until hands are dry. Follow the manufacturer's recommendations regarding the volume of product to use.

3. EMS personnel having direct contact with patients should not wear artificial fingernails or extenders.

VI. PRECAUTIONS TO PREVENT EXPOSURES AND/OR TRANSMISSION OF DISEASE

For specific recommendations for cleaning and disinfecting EMS equipment and surfaces, see: **APIC (2013) Implementation Guide to Infection Prevention in Emergency Medical Services (www.apic.org)**

A. All EMS personnel should take precautions to prevent exposure injuries caused by needles, scalpels, and other sharp instruments or devices during procedures; when cleaning used instruments; during disposal; and when handling sharp instruments after procedures.

B. Only a System approved cleaning and germicidal solutions containing chemicals that are effective in the disinfecting of equipment contaminated with blood and body fluids will be used to clean and disinfect equipment between patient uses. All EMS personnel must be familiar with cleaners/disinfectants and their use whenever decontaminating equipment.

C. All EMS personnel responsible for cleaning and decontaminating equipment and surfaces must be properly attired and wear recommended PPE since tasks such as liquid waste disposal can generate splashes. (Refer to Agency E*xposure Control Plan.)*

D. **Potentially hazardous waste**

1. Place contaminated **reusable** patient care equipment in biohazard bags and label for cleaning and disinfection according to agency policies. Clean and disinfect reusable equipment according to manufacturer's instructions by trained personnel wearing correct PPE. Avoid contamination of reusable porous surfaces that cannot be made single use.

2. Body excretions or secretions, i.e., suction aspirate, placentas, etc. must be identified, bagged and tagged in durable bags (see below) resistant to puncture and tears. Waste may be single bagged if it can be put in the bag without contaminating the outside. Otherwise, double bagging is required.

3. **Warning labels** shall be affixed to containers of regulated waste or OPIM such as sharps containers. **Red bags** may be substituted for labels. Biohazard labels are to be fluorescent orange or orange-red or predominantly so, with lettering or symbols in a contrasting color.

4. All contaminated **disposable equipment** shall be properly discarded at the receiving hospital (facility).

5. **Nondisposable items that could release blood/OPIM in a liquid or semi-liquid state if compressed must be appropriately cleaned, disinfected, or discarded.**

a. Items that are caked with dried blood or OPIM and are capable of releasing these materials during handling must be appropriately cleaned.

b. Non-disposable patient equipment that becomes contaminated by a patient's blood or body fluids and are left at the hospital due to the on-going needs of a patient (e.g., spine boards, scoop stretchers, splints), **must have gross contaminants removed and physical cleaning completed as outlined in system policy prior to their return to the EMS Agency**. Failure to clean this equipment creates a potential medium for transmission of disease and is not consistent with the intent or purpose of this policy.

E. **Laryngoscope blades**

1. The NWC EMS MD has required the transition to disposable laryngoscope blades (approved products listed on Drug and Supply List) as the first-line tool to intubate (eff 6-1-15) with an inventory of non-disposable blades maintained as a back-up.

2. After use, medical devices that require sterilization or high-level disinfection must first be thoroughly cleaned to reduce organic material or bioburden before being exposed to the germicide or sterilization following the device manufacturer's instructions and CDC guidelines. (See section on ambulance cleaning.) They shall be stored in a sealable bag to maintain at least high-level disinfection.

3. Provider agencies are encouraged to work with their assigned hospitals to create a collaborative process to provide sterilization and/or high-level disinfection for the non-disposable blades.

4. If you have questions about **high-level disinfectants** (sterilants), or how to clean, disinfect or sterilize a particular medical device, first contact the manufacturer of the product. If you are unable to obtain sufficient information in this manner, contact the Food and Drug Administration (FDA) regional office or the FDA Center for Devices and Radiological Health at (800)-638-2041. FDA is the federal regulatory agency for safe and effective use of medical devices and is now also responsible for regulation of chemical sterilants) (CDC, 2012).

F. Disposable **bag-valve-masks** (BVMs) or non-disposable bags with disposable one-way valve inter-connects and disposable masks should be used on all patients.

G. **Needles/sharps**

1. System members are encouraged to use **sharps with engineered sharps injury protection**, such as self-sheathing IV catheters, thereby reducing the incidence of accidental needle sticks.

2. To prevent needlestick injuries, needles should not be recapped, purposefully bent or broken, removed from disposable syringes or otherwise manipulated by hand.

3. **Contaminated sharps** (disposable syringes and needles, scalpel blades) are to be placed in containers which are closable, puncture resistant, leak proof on sides and bottom, easily accessible to personnel, maintained upright throughout use, labeled or color-coded properly. Puncture-resistant containers should be located as close as possible to the use area (point of use). DO NOT **stick used needles into mattresses or bench seats.** When moving sharps containers from the area of use, they shall be closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling. All full sharps containers should be sealed and given to ED personnel for proper disposal.

4. **Broken glassware** which may be contaminated must not be picked up directly with the hands. It shall be cleaned up using mechanical means such as a brush and dust pan, tongs or forceps.

H. **Handling and/or transportation of blood specimens:** Specimens shall be obtained in a manner which complies with system procedures for venipuncture and filling blood specimen containers. They must be labeled, placed in a container which prevents leakage and placed in a secondary puncture-resistant container if the primary container is contaminated or the specimen could puncture the primary container.

I. EMS responders who have **exudative lesions or weeping dermatitis** should refrain from all direct patient care and from handling patient care equipment until the condition resolves.

J. **Pregnant health care workers** are not known to be at greater risk of contracting HIV infection than health care workers who are not pregnant; however, if a health care worker develops HIV infection during pregnancy, the infant is at risk of infection resulting from perinatal transmission. Because of this risk, pregnant health care workers should be especially familiar with and strictly adhere with precautions to minimize the risk of HIV transmission.

K. **Procedure for appropriately disposing of contaminated clothing, equipment and linen**

1. All **garments** that are penetrated by blood or OPIM shall be removed immediately or as soon thereafter as practical. Prehospital personnel shall continue treating the patient, if exposed while providing patient care. All PPE shall be removed prior to leaving the work area. System hospitals have agreed to provide "scrubs" or suitable clothing so contaminated uniforms need not be worn out of the hospital. Leak-proof bags shall be provided so a contaminated uniform may be safely returned to the ambulance station for proper laundering per the employer's engineering practices.

2. It is possible for the work area to expand to the ambulance quarters. When this occurs, OSHA suggests that EMS personnel cover up with a non-absorbent barrier and ride in the patient compartment of the ambulance to protect against contaminating the cab of the vehicle. The contaminated responder and the ambulance will remain out of service until both have been decontaminated.

3. **Contaminated linen**

a. The risk of disease transmission from soiled linens is small. Handle soiled linens as little as possible with minimum agitation. Wear gloves when bagging contaminated clothing or linen. Wrap linens that are or might be contaminated in heavy, biodegradable plastic bags provided by the hospital. Label as "Contaminated" or "Infectious Waste". These bags must be constructed in a manner that would prevent leakage.

b. When contaminated laundry is wet and presents a reasonable likelihood of soak-through or leakage from the bag or container, the laundry must be placed and transported in bags or containers which prevent soak-through and/or leakage of fluids to the exterior.

c. Do not sort or rinse contaminated laundry in the patient care area.

d. When universal precautions are used in the handling of all soiled laundry, alternative labeling or color coding is sufficient if it permits all personnel to recognize the containers as requiring compliance with universal precautions.

L. **Environmental work surfaces in EMS vehicles**

1. Clean, decontaminate and disinfect ambulance surfaces (including stretchers, mattresses, railings, medical equipment control panels, and adjacent flooring, walls, work surfaces, and hand holds) as soon as feasible when overtly contaminated with blood or OPIM according to System and employer procedures. All have the potential to transmit infectious diseases. Cleaning and disinfecting of ambulance should be done before transporting another patient.

2. A **large spill** of blood or other body fluid or substance (e.g., feces or vomit) should be managed through removal of bulk spill matter, cleaning the site, and then disinfecting the site. For large spills, a chemical disinfectant with sufficient potency is needed to overcome the tendency of proteins in blood and other body substances to neutralize the disinfectant's active ingredient.

3. When cleaning spills, wear gloves and use disposable toweling to remove the majority of the spill. Place all soiled components into a plastic bag that can be sealed/tied for appropriate disposal.

4. Remove all adhesive from surfaces prior to cleaning.

5. **Clean** (physical removal of soilage) with an approved detergent being sure to clean all cracks, crevices and hinged door openings. While hydrogen peroxide (0.3% solution) helps to loosen blood and tissue, it does not disinfect. Use a low-sudsing detergent with a neutral pH on washable surfaces, e.g., OMEGA by Airwick. Grocery store detergents do not have a neutral pH and should not be used Toothbrushes, cotton swabs or various brushes should be available to aid in the process. It is important to not soak or flood any electric and/or battery operated patient care equipment with any solutions as possible electrical shock or permanent damage can occur to devices. Do not use abrasive cleaners that may scratch surfaces.

6. After thoroughly cleaning all planes and crevices, spray all planes of equipment with System-approved disinfectant registered by the EPA with label claims for viruses (such as, norovirus, rotavirus, adenovirus, poliovirus) and TB. The System prefers Cavi-cide Disinfectant Cleaner (Aseptic Control Products), or a freshly constituted (mixed the same day) 1:100 solution of bleach. Follow manufacturer's instructions.

7. Allow cleaner / disinfectant to stand on equipment for the manufacturers recommended time to be fully effective against bacteria, viruses and Mycobacterium tuberculosis.

   General recommendation: Spray all surfaces with EPA-approved disinfectant; hold cleaning agent dispenser 10" from surface and atomize with quick short strokes, spraying evenly on (potentially) contaminated areas of equipment and affected interior patient compartment or other affected portions of vehicle until wet. Wait 30 seconds. To kill staph, strep, and other virus and bacteria strains, repeat as above, wait 10 minutes.

8. After allowing disinfectant to remain on equipment for the prescribed time by the manufacturer, wipe down with a clean towel dampened with clean water then dry thoroughly. Doing so to avoid streaking and any unsightly residue that may be left behind from disinfectant.

M. **Stretcher/cot mattresses: FDA Safety Communication - Damaged or Worn Covers Pose Risk of Contamination and Infection**

1. Use only a mattress and pillow with plastic or other covering that fluids generally cannot get through.
2. Despite precautions, medical bed mattress covers may fail to prevent blood and body fluids from leaking into the mattress (fluid ingress). Fluid ingress may occur if mattress covers become worn or damaged from small holes or rips in the cover or from incorrect cleaning or, disinfecting procedures. The zipper on the cover may also allow fluid to penetrate the mattress. If blood and body fluids from one patient penetrate a mattress, they can later leak out when another patient is placed on the stretcher. Patients are at risk for infection if they come into contact with blood and body fluids from other patients.
3. Medical literature shows that damaged and wet (soiled) mattresses can be a source of contamination during infection outbreaks. The FDA is concerned that fluid ingress from worn or damaged medical bed covers may be widespread and largely under-recognized by health care providers and caregivers.
4. Medical bed mattress covers, whether water-resistant, water-proof, or water-repellent, may lose their effectiveness over time. The duration of time that a medical bed mattress cover is expected to last (expected life) varies from manufacturer to manufacturer. In addition, the expected life of a medical bed cover may differ from that of the mattress itself.
5. Recommendations for inspection and maintenance:
   a. Regularly check each medical bed mattress cover for any visible signs of damage or wear such as cuts, tears, cracks, pinholes, snags or stains.
   b. Routinely remove the medical bed mattress cover and check its inside surface. Once the mattress cover is removed, inspect the mattress for wet spots, staining, or signs of damage or wear. Check all sides and the bottom of the mattress.
   c. Immediately replace any medical bed mattress cover with visible signs of damage or wear to reduce the risk of infection to patients.
   d. DO NOT stick needles into a medical bed mattress through the mattress cover.

N. Except on rare and special instances (as mentioned below), items that do not ordinarily touch the patient or touch only intact skin are not involved in disease transmission, and generally do not necessitate disinfection between uses on different patients. These items include, spine boards, blood pressure cuffs, and a variety of other medical accessories like stethoscopes and non-disposable pulse oximeter sensors. Consequently, depending on the particular piece of equipment or item, washing with a detergent or using a low-level disinfectant may be sufficient when decontamination is needed. If noncritical items are soiled with blood or other body fluids, follow instructions outlined in the section on cleaning and disinfection.

O. Exceptional circumstances that require noncritical items to be either dedicated to one patient or patient cohort, or subjected to low-level disinfection between patient uses are those involving:

1. Patients infected or colonized with vancomycin-resistant enterococci or other drug-resistant microorganisms judged by the infection control program, based on current state, regional, or national recommendations, to be of special or clinical or epidemiologic significance or

2. Patients infected with highly virulent microorganisms, e.g., viruses causing hemorrhagic fever (such as Ebola or Lassa).

3. If you have questions about a low- or intermediate-level disinfectant and certain sterilants, contact the Antimicrobial Program Branch, Environmental Protection Agency (EPA) hotline (703) 308-0127 or email: info_antimicrobial@epa.gov. The EPA is the federal regulatory agency for **low- or intermediate-level** disinfectants and some sterilants.

P. Transport potentially infectious patients using the minimum number of EMS personnel and without non-infected patients or passengers in the ambulance.

Q. Notify receiving facilities of the impending arrival of a potentially infectious patient prior to transport to give them adequate time to initiate appropriate infection control procedures.

VII. IMMUNIZATIONS AND OTHER PREVENTIVE TESTING

EMS personnel are urged to have all appropriate immunizations or have evidence of immunity, when possible, against influenza, tetanus-diphtheria, pertussis, rubella, measles, mumps, polio, Hepatitis B and others, as effective immunizations become available. System employers shall maintain personnel records in accordance with OSHA Guidelines relative to HBV immunization and/or declination statements. Annual TB screening is strongly recommended.

VIII. PROCEDURE FOR A SUSPECTED EXPOSURE - EMS PERSONNEL

A. Even though all safety precautions are followed, a person may still have direct contact with a patient's blood and/or body secretions or be exposed to a communicable disease. Without appropriate documentation, the exposed health care worker may not be eligible for medical care reimbursement or other long-term benefits.

B. EMS Provider Agencies are required to develop internal Bloodborne Pathogens Exposure Control Plans regarding the use of PPE, vaccinations, and follow-up of personnel if exposed in compliance with Federal Law.

C. **General guidelines**

1. All personnel who believe they have experienced an exposure event should first provide themselves with the appropriate first-aid treatment and decontamination as required. Once able, the personnel should contact their employer's **Designated Infection Control Officer (DICO)** or his/her designee as required by the Ryan White Act and NFPA 1581.

2. Once notified, the DICO shall evaluate the facts of the potential exposure and determine if there is a potential for occupational acquisition of an infectious disease, based on CDC guidelines for Risk of Occupational Exposure to HBV, HCV, and HIV and Recommendation for postexposure prophylaxis (MMWR June 29, 2001); Updated U.S. Public Health Service Guidelines for the Management of occupational Exposures to HIV and Recommendations for Postexposure prophylaxis (MMWR, Sept. 30, 2005) or updated guidelines as they are published.

3. If the DICO determines that no exposure occurred, no further follow-up is required. The personnel should document any injury or first-aid required with their employer per employer policy. No NCH EMS Report Form needs to be generated.

4. If the DICO determines that an exposure has occurred, the DICO will follow agency policy as required by the Ryan White Act.

IX. RECOMMENDED PROCEDURES FOR FOLLOW-UP – HOSPITALS

A. Hospitals are asked to collaborate with the requests of DICOs in safeguarding the wellbeing of System members and/or other professionals covered under the Ryan White Act per procedure.

B. Hospitals are asked to ensure the timely completion of lab studies and reporting of results to the DICO in compliance with the Ryan White Act and/or other Federal and State statutes.

C. **If the source patient tests NEGATIVE** for the targeted organisms and has no other evidence of infection, no further follow-up is generally required.

D. If the **source patient cannot be identified**, decisions on the method of follow-up should be based on the type of exposure and the likelihood that the patient was infected. This decision should be made jointly by the DICO in consultation with an Infection Control Consultant.

E. **If the source patient tests POSITIVE**, hospitals may only release the test results to the DICO who requested the lab draw. The exposed individual must receive counseling, confidentially and in person, about the meaning of the test results, the availability of additional confirmatory testing, the possibility of infection, methods to prevent the spread of the infection, and services available for further information and counseling.

F. Follow-up care for exposure to a positive source should be initiated as soon as feasible to ensure timely post-exposure prophylaxis.

X. Notification requirements IN THE ABSENCE OF AN EXPOSURE INCIDENT – HOSPITALS

A. According to the Illinois Hospital Licensing Act (92-363, eff. 1-1-02), and the Ryan White HIV/AIDS Extension Act of 2009, each hospital is required to establish procedures for notifying EMS personnel who have provided or are about to provide, emergency care or life support services to a patient who has been diagnosed as having a dangerous communicable or infectious disease.

1. (210 ILCS 85/6.08) (from Ch. 111 1/2, par. 147.08) Sec. 6.08.

a. Every hospital shall provide notification as required in this Section to police officers, firefighters, emergency medical technicians, and ambulance personnel who have provided or are about to provide emergency care or life support services to a patient who has been diagnosed as having a dangerous communicable or infectious disease. Such notification shall not include the name of the patient, and the emergency services provider agency and any person receiving such notification shall treat the information received as a confidential medical record.

b. The Department shall establish by regulation a list of those communicable reportable diseases and conditions for which notification shall be provided.

c. **Notification shall be required for the following diseases**: AIDS, Aids related complex (ARC), Anthrax, Chickenpox, Cholera, Diphtheria, Hepatitis B, Hepatitis C, Herpes Simplex, Human Immunodeficiency Virus (HIV), Invasive Meningococcal Infection (Meningitis or Meningococcemia), Measles, Mumps, Plague, Polio, Rabies (human Rabies), Rubella (including Congenital Rubella Syndrome), Smallpox, Tuberculosis, and Typhus (louse-borne). The EMS System also recommends notification for head and/or body lice. (Source: Amended at 15 Ill. Reg. 5328, effective May 1, 1991)

2. There is a discrepancy between the federal and state timelines for exposure notification (i.e. federal regulations state that notification should take place within 48 hours while state regulations state within 72 hours). Please contact your Risk Management or Legal Department for further guidance.

   a. The hospital shall send the letter of notification within 72 hours after a confirmed diagnosis of any of the communicable diseases listed by the Department pursuant to subsection (b), except confirmed diagnoses of Acquired Immunodeficiency Syndrome (AIDS). If there is a confirmed diagnosis of AIDS, the hospital shall send the letter of notification only if the police officers, firefighters, emergency medical technicians, or ambulance personnel have indicated on the EMS Patient Care Report (PCR) that a reasonable possibility exists that they have had blood or body fluid contact with the patient, or if hospital personnel providing the notification have reason to know of a possible exposure.

   b. Notification letters shall be sent to the designated contact at the municipal or private provider agency's DICO listed on the EMS PCR. Except in municipalities with a population over 1,000,000, the PCR must contain all municipal and private provider agency personnel who have provided any pre-hospital care immediately prior to transport. In municipalities with a population over 1,000,000, the ambulance run sheet must contain the company number or unit designation number for any fire department personnel who have provided any pre-hospital care immediately prior to transport. The letter shall state the names of crew members listed on the PCR and the name of the communicable disease diagnosed, but shall not contain the patient's name. Upon receipt of such notification letter, the applicable DICO shall contact all personnel involved in the pre-hospital or inter-hospital care and transport of the patient.

   c. Such notification letter from the hospital may, but is not required to, consist of the following format:

      (1) NOTIFICATION LETTER
      (2) (NAME OF HOSPITAL)
      (3) (ADDRESS)
      (4) TO:.(Name of Organization)
      (5) FROM: (Infection Control Coordinator)
      (6) DATE

   d. As required by Section 6.08 of the Illinois Hospital Licensing Act, (name of hospital) is hereby providing notification that the following crew members or agencies transported or provided pre-hospital care to a patient on ... (date), and the transported patient was later diagnosed as having ...(name of communicable disease): ...(list of crew members).

   e. The Hospital Licensing Act requires you to maintain this information as a confidential medical record. Disclosure of this information may therefore result in civil liability for the individual or company breaching the patient's confidentiality, or both.

   f. If you have any questions regarding this patient, please contact me at (telephone number), between (hours). Questions regarding exposure or the financial aspects of obtaining medical care should be directed to your employer.

3. Upon discharge of a patient with a communicable disease to emergency personnel, the hospital shall notify the emergency personnel of appropriate precautions against the communicable disease, but shall not identify the name of the disease in the following:

   a. Typhoid fever
   b. Giardiasis
   c. Amebiasis
   d. Hepatitis A
   e. Shigellosis
   f. Salmonellosis

4. The hospital may, in its discretion, take any measures in addition to those required in this Section to notify police officers, firefighters, and EMS personnel of possible exposure to any communicable disease. However, in all cases this information shall be maintained as a confidential medical record and shall not conflict with Federal or state confidentiality statutes or with the provisions of Section 6.08 of the Hospital Licensing Act.

5. Any person providing or failing to provide notification under the protocol required by this Section shall have immunity from any liability, either criminal or civil, that might result by reason of such action or inaction, unless such action or inaction is willful.

6. Any person who willfully fails to provide any notification required pursuant to an applicable protocol which has been adopted and approved pursuant to this Section commits a petty offense, and shall be subject to a fine of $200 for the first offense, and $500 for a second or subsequent offense.

7. Nothing in this Section shall preclude a civil action by a firefighter or EMS personnel against an emergency services provider agency, municipal fire department, or fire protection district that fails to inform the member in a timely fashion of the receipt of a notification letter. (Source: P.A. 92-363, eff. 1-1-02.)

References:

Association for Professionals in Infection Control and Epidemiology, Inc. (APIC). (2013). Implementation guide: Guide to infection prevention in emergency medical services. www.apic.org/implementationguides

OSHA Bloodborne Pathogens standard 20 CFR 1910.1030; OMB Number 1218-0180 revised in conformance with the Needlestick Safety and Prevention Act (PL 106-430, Nov. 6, 2000).

Occupational Exposure to Bloodborne Pathogens; Needlestick and Other Sharps Injuries; final rule (2001, Jan 18) Illinois Control of Communicable Disease Code and the Illinois Control of Sexually Transmissible Disease Code (April 1, 2001)

NFPA (2005) 1581 *Standard on Fire Department Infection Control Program.*

Ryan White HIV/AIDS Treatment Extension Act of 2009 (Public Law 101-381) (Part G, Section 2695). For more information see http://www.cdc.gov/niosh/topics/ryanwhite/

CDC (Updated 12-21-13). Sterilization of disinfection of medical devices. Excerpted from Guidelines for Infection Control in Healthcare Personnel, 1998.

Centers for Disease Control (CDC) MMWR **June 29, 2001 / 50(RR11); 1-42;** Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Post-exposure Prophylaxis

Illinois Hospital Licensing Act (210 ILCS 85/6.08) (from Ch.111 1/2, par. 147.08)*

Contact references

OSHA: Bloodborne Pathogens and Needlestick Prevention; www.osha.gov/SLTC/bloodbornepathogens/index.html

CDC: NIOSH Bloodborne Pathogens Topic Page: www.cdc.gov/niosh/topics/bbp

Protecting Healthcare workers from Bloodborne Pathogens: www.cdc.gov/ncidod/dhqp/wrkrProtect_bp.html

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APPENDIX - Guidelines for follow up of HIV exposure (2013)

The U.S. Public Health Service has updated management and prophylaxis recommendations for healthcare providers with occupational exposure to HIV. The revised guidelines specify those exposed to HIV should immediately start four weeks of post-exposure prophylaxis (PEP) with three antiretroviral drugs, instead of basing the number of PEP drugs prescribed on risk for infection as the previous 2005 recommendations stated.

The earlier recommendations were challenging to apply in practice, because it is often difficult to determine the level of risk for infection in any given incident, David T. Kuhar, MD, of the CDC, and colleagues reported in *Infection Control and Hospital Epidemiology*.

Other changes include shortening the recommended period for follow-up HIV testing from six months to four, if newer fourth-generation tests are used because these detect both the HIV p24 antigen and antibodies to the virus, and are considered more reliable than earlier tests. If a newer testing platform is not available, follow-up HIV testing is generally concluded six months after exposure.

When occupational exposures to blood and/or other bodily fluids that might contain HIV occur -- ranging from needlesticks to contact between a cut and potentially infectious fluids -- post-exposure prophylaxis (PEP) is recommended, the guidelines state.

If possible, the HIV status of the exposure source patient should be determined. After exposure to HIV, PEP medication regimens should be started as soon as possible, and should be continued for four weeks.

For all occupational exposures to HIV, PEP medication regimens should contain three or more antiretroviral drugs.The preferred initial regimen consists of a combination of tenofovir and emtricitabine (Truvada) with raltegravir (Isentress) due to " a favorable side effect profile as well as a convenient dosing schedule," the researchers wrote.

However, expert consultation should be undertaken to tailor regimens to exposed individuals, particularly in cases involving an exposed person who is pregnant, if HIV drug resistance is suspected in the source contact, if the the initial regimen is poorly tolerated or toxic or if the exposed individual has a serious underlying illness, such as renal disease.

Exposed personnel should be provided with close follow-up, which should begin within 72 hours of exposure and should include counseling, baseline and follow-up HIV testing, and monitoring for drug toxicity.

HIV testing may be concluded four months after exposure if a newer generation combination HIV p24 antigen-HIV antibody test is used. Follow-up HIV testing is generally concluded six months after exposure if a newer testing platform is not available.

"As new antiretroviral agents for treatment of HIV infection and additional information concerning early HIV infection and prevention of HIV transmission become available, the interagency Public Health

Kuhar DT et al. *Infect Control Hosp Epidemiol.* 2013; 34(9):875-892.

FDA approves first rapid test for HIV (Aug. 2013)

HealthDay News -- The FDA has approved the first rapid diagnostic test to detect the HIV-1 antigen, as well as blood antibodies for the HIV-1 and HIV-2 strains, to aid healthcare providers in identifying people with HIV who might not be able to be tested in traditional health setting.

The Alere Determine HIV-1/2 Ag/Ab Combo test can detect these markers for the virus in human serum, plasma and blood specimens, the agency said in a press release. Detection of the HIV-1 antigen may allow doctors to diagnose the viral infection earlier than detection of the antibodies alone.

The new test is produced by Orgenics Ltd., whose parent, Alere Inc., is based in Yavne, Israel