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Aerospace Medicine

***PREVENTION AND MANAGEMENT OF
OCCUPATIONAL BLOODBORNE PATHOGEN
EXPOSURE AND INFECTION***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Air Force Police Directive (AFPD) 48-1, *Aerospace Medical Program*. This instruction provides guidelines for prevention and/or control of occupational exposures to blood or potentially infectious materials. This applies to all personnel assigned, attached and associated units to the 8th Fighter Wing, Kunsan Air Base, Korea.

SUMMARY OF REVISIONS

This instruction is revised to include the most current terms associated with infection control and it is reviewed to ensure it meets all requirements in 29 CFR 1910.1030, *Occupational Exposure to Bloodborne Pathogens*. A bar (|) indicates revision from the previous edition.

1. General Information.

1.1. **Responsibilities:** This instruction applies to any worker who is potentially at-risk of exposure to bloodborne pathogens (e.g., Hepatitis B and Human Immunodeficiency Virus), whose job description requires them to be trained in first aid and is designated to provide first-response medical care, including first-aid and CPR, as a collateral duty. Air Force Specialty Codes (AFSC) included are: 8th Civil Engineer Squadron, Fire Protection (8 CES/DEF) when performing emergency medical care, Special Investigations when conducting crime scene searches, 8th Security Forces as first responders to accident and disaster scenes, all Services personnel who have potential exposure to bloodborne pathogens, all personnel appointed to the Search and Recover Team, and all medical AFSCs that have potential exposure to bloodborne pathogens.

1.2. Each organization will be responsible for providing an operating instruction that lists job classifications, duty titles, task/procedures that may result in potential exposures, methods of compliance specific to duty section, training program, and record keeping.

1.3. **References:** 29 CFR 1910.1030, *Occupational Exposure to Bloodborne Pathogens*.

1.4. **Definitions:**

1.4.1. **Bloodborne Pathogens:** Disease-causing microorganisms that are present in human blood and other Potentially Infectious Materials (PIMs) that can cause disease in humans. Examples include (but are not limited to) the Hepatitis B Virus, Hepatitis C Virus, and the Human Immunodeficiency Virus.

1.4.2. **Contaminated:** Presence or the reasonably anticipated presence of PIMs on an item or surface.

1.4.3. **Decontamination:** Use of physical or chemical means to remove, inactivate, or destroy bloodborne 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.

1.4.4. **Engineering Controls:** Controls that isolate or remove the bloodborne pathogens hazard from the workplace (e.g., sharps disposal containers, self-sheathing needles).

1.4.5. **Exposure Incident:** Specific eye, mouth, other mucous membrane, non-intact skin (skin with cuts, abrasions, chafing, dermatitis, hang-nails, etc.), or potential contact with PIMs that results from the performance of an employee's duties. Includes any incident where a potentially contaminated item (e.g., knife, scalpel, needle) penetrates the skin or human bites.

1.4.6. **HBV:** Hepatitis B Virus.

1.4.7. **HIV:** Human Immunodeficiency Virus.

1.4.8. **HCV:** Hepatitis C Virus.

1.4.9. **Occupational Exposure:** Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with PIMs that may result from the performance of an employee's duties.

1.4.10. **Parenteral:** Piercing of the mucous membrane or skin barrier through such events as needlesticks, human bites, cuts, abrasions or via other sharp objects.

1.4.11. **Personal Protective Equipment (PPE):** Specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts, or blouses) not intended to function as protection against a hazard are not considered PPE.

1.4.12. **Potentially Infectious Materials (PIMs):** Includes blood and human body fluids that should be handled with standard precautions as recommended by Center for Disease Control and Prevention (CDC). (**NOTE:** PIMs of human body fluid origin include semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.)

1.4.13. **Regulated Waste:** Liquid or semi-liquid PIMs; contaminated items that would release PIMs in a liquid/semi-liquid state if compressed; items caked with dried PIMs and capable of releasing these materials during handling; or contaminated sharps.

1.4.14. **Source Individual:** Any individual, alive or dead, whose PIMs may be a source of occupational exposure to the employee.

1.4.15. Sterilize: Use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

1.4.16. Standard Precautions: An approach to infection control in which all human blood and certain human body fluids (See PIMs) are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens. The approach includes the use of barriers between the PIMs of the patient and the skin or mucous membranes of the responder.

1.4.17. Victim or Exposed Patient: Worker exposed to PIMs.

1.4.18. Work Practice Controls: Measures that reduce the likelihood of exposure by altering the manner in which a task is performed.

2. Methods of Compliance.

2.1. **Standard Precautions:** Practices shall be observed to prevent contact with PIMs, to include the use of barriers between the patient's body fluids and the health care worker. Barriers generally include use of personal protective equipment such as gloves, mask, safety glasses or goggles, gowns, or aprons.

2.2. **Work Practice Controls:** Prevention of exposure will consist primarily of the following work practice methods/controls:

2.2.1. Personal hygiene, to include hand washing.

2.2.2. Standard precautions.

2.2.3. Sanitizing or disposal procedures for contaminated equipment, clothing, and supplies.

2.2.4. Procedures following an emergency response or in case of an exposure to PIMs.

2.3. **Handwashing:** Handwashing is considered one of the most important work practices that will prevent infection.

2.3.1. Handwashing will consist of the following procedures:

2.3.1.1. Personnel will wash their hands after any possible contact with PIMs handling contaminated objects, and removal of protective gloves.

2.3.1.2. Personnel shall clean their hands in a lavatory that is properly equipped with warm, running potable water, soap, and paper towels (no multi-use towels).

2.3.1.3. When washing hands with soap and water, wet hands first with water, apply an amount of product recommended by the manufacturer to hands, and rub hands together vigorously for at least 15 seconds, covering all surfaces of 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.

2.3.2. Antiseptic towelettes and other similar hand disinfectants can be used as a supplement to handwashing but not as a replacement. Hand disinfectants can be placed with emergency response kits for use when provisions for handwashing are not feasible. When such agents are used, hands shall be washed with soap and running water as soon as possible.

2.4. **Food and Drink:** Food and drink will not be stored together with emergency response equipment or supplies. Personnel will not eat, drink, and put on/take off make-up or contact lenses, at any time when PIMs may be present or before the hands are properly washed as stated above.

2.5. **Personal Protective Equipment (PPE):**

2.5.1. Personnel are required to use “appropriate” PPE to prevent exposure to PIMs.

2.5.2. PPE will be considered “appropriate” if it does not permit PIMs to pass through to or reach the member’s work clothes, street clothes, undergarments, skin, eyes, mouth, or mucous membranes of the nose under normal conditions of use and for the duration of time, which the PPE will be used.

2.5.2.1. Military uniforms are not considered PPE and must be supplemented with appropriate PPE when exposure to PIMs is “reasonably” anticipated. If uniforms become contaminated with blood or body fluids during the course of duties, the items must be removed as soon as possible and laundered by the organization.

2.5.2.2. Decisions for the type of PPE to be worn must be based on the degree of reasonably anticipated exposure, and not maximal protection for any possible potential exposure. Impermeable protective barriers may not be necessary in all cases.

2.5.3. Section supervisors will:

2.5.3.1. Ensure that potentially exposed employees are provided, without cost, appropriate equipment including any of the following: Gloves, aprons, lab coats, face shields, masks, eye protection, mouth pieces for resuscitation bags, and pocket masks or other ventilation devices as appropriate.

2.5.3.2. Enforce safe work practices by ensuring employees use the protective clothing and equipment, unless there are rare and extraordinary circumstances in which the member believes that the use of the barriers would prevent the delivery of care or increase the risk to the worker or a coworker.

2.5.3.3. Conduct monthly inspections of unit PPE to ensure it is readily available and accessible for workers, of proper size and quantity, and in good repair. Special care should be taken to store eye protection in a manner that prevents scratching of the lenses.

2.5.4. Employees will notify section supervisors and/or supply custodians of disposal, repair, or replacement needs.

2.5.5. The organization is responsible for cleaning, laundering, disposal, repair, and/or replacement of PPE to maintain its effectiveness.

2.5.6. All PPE shall be removed prior to leaving work area.

2.5.7. Gloves:

2.5.7.1. Shall be worn when it can be “reasonably” anticipated that the employee may have hand contact with PIMs, mucous membranes, non-intact skin, or must handle or touch contaminated items or surfaces.

2.5.7.2. Disposable Gloves: Disposable gloves shall not be washed or decontaminated for reuse and are to be replaced as soon as practical when they become contaminated or as soon as feasible if torn, punctured or barrier ability is compromised.

2.5.7.3. Utility Gloves: Utility gloves may be decontaminated for reuse if the integrity of the gloves is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

2.5.7.4. Allergies: Hypoallergenic gloves shall be provided to those employees who are allergic to latex gloves. Cotton glove liners will also be provided.

2.5.7.5. Hands will always be washed after glove removal.

2.5.8. Masks in combination with eye protection:

2.5.8.1. Shall be worn when splashes, sprays, splatter, or droplets of PIMs may be generated and when eye, nose, or mouth contamination can be reasonably anticipated.

2.5.8.2. Masks should be changed between patients and when visibly soiled or saturated with liquids.

2.5.8.3. Eye protection must provide peripheral, as well as direct protection from exposure, and will consist of one of the following:

2.5.8.3.1. Safety glasses, plain or prescription, that have shatterproof lenses and side shields. (Safety glasses can be purchased through medical supply channels. Prescription safety glasses can be obtained through Managed Care Flight at the hospital.)

2.5.8.3.2. Goggles.

2.5.8.3.3. Chin length face shield.

2.5.8.3.4. Prescription glasses may be used as protective eyewear as long as they are equipped with solid side shields that are permanently affixed or of the "add-on" type.

2.5.8.3.5. Eye protection should be cleaned with antiseptic soap or disinfected with an intermediate level disinfectant between patients or between used by staff members when the eyewear is shared.

2.5.8.3.6. Government procured eye protection should not be removed from the organization.

2.5.9. Gowns, aprons, etc.:

2.5.9.1. Appropriate protective clothing such as gowns or aprons shall be worn in potential exposure situations.

2.5.9.2. If a garment is penetrated by PIMs, the garment shall be removed immediately, or as soon as feasible, and placed in a plastic bag marked for Biohazard.

2.5.10. Resuscitation devices are to be readily available and accessible to employees who can be reasonably expected to resuscitate patients. Devices with one-way valves to prevent the patient's saliva or vomitus from entering the caregiver's mouth are preferred.

2.6. **Housekeeping:** All equipment, supplies, and surfaces shall be cleaned and disinfected after use or if possibly contaminated with PIMs.

2.6.1. All personnel will understand the need for and how to safely and effectively contain PIM contaminated equipment and the environment.

2.6.2. Regulated Waste (Disposable Items):

2.6.2.1. Sharps must not be recapped, bent, removed, sheared, or purposely separated by hand. There is one exception to this rule. Recapping and reusing of needles is allowed only in the Dental Clinic, where a mechanical device or a one-handed technique is used to recap or remove all needles.

2.6.2.2. All used sharps containers are located as close to the point of use as is logistically possible. These containers must be puncture resistant, labeled with a biohazard label or color coded, and is leak proof. Sharps containers are emptied when 3/4 full. **NOTE:** The location of sharps containers must be stated in exposure control plans.

2.6.2.3. All other regulated wastes must be double bagged in a red biohazard waste plastic bag. Bags will not be dragged, stuffed, squeezed, or handled in any manner that would allow them to be torn open resulting in possible environmental contamination. This is then disposed of with the medical clinic's regulated waste. Organizations should contact 8th Medical Support Squadron, Facility Management (8 MDSS/SGSLF) to coordinate disposal of regulated waste.

2.6.2.4. Regulated waste that is retained as evidence by OSI or 8 SFS must be stored in a way that it will not pose a risk to workers or contaminate the storage area.

2.6.2.5. For items that can only be disinfected by means of autoclaving/gas sterilizing, squadrons clean and disinfect items as much as possible then bring items properly bagged to the 8 MDG for autoclaving/gas sterilizing.

2.6.3. Non-disposable equipment and working surfaces that are potentially contaminated with PIMs shall be cleaned and decontaminated after completion of procedures and immediately, or as soon as feasible, after contact with PIMs.

2.6.4. Contaminated equipment or supplies must not be allowed to further contaminate the environment.

2.6.5. Procedures for Cleaning Up PIMs:

2.6.5.1. Use an Environmental Protection Agency (EPA) approved disinfectant that is tuberculocidal and HIV effective or a solution of 5.25% sodium hypochlorite (household bleach) diluted with water in a 1:10 solution. Care must be taken to use gloves to avoid skin contact with the bleach solution. Bleach solution can be kept in an opaque, airtight plastic container with a shelf life of 30 days. Be sure the solution is properly labeled. Discard the solution after use if kept in an open container. Questions on disinfectants can be directed to the 8th Medical Group, Public Health Officer or Infection Control Officer.

2.6.5.2. Gather necessary supplies: Disposable non-sterile gloves, paper towels or other absorbent material, red plastic bags, and disposable apron to cover the uniform, if necessary.

2.6.5.3. If the spill is large, evacuate the area temporarily to allow aerosols to settle. Re-direct traffic away from the area until the spill is properly cleaned up.

2.6.5.4. Don necessary PPE. Gloves will be required as a minimum.

2.6.5.5. Broken glassware, which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dustpan, tongs,

or forceps.

2.6.5.6. Disinfect the spill with an approved disinfectant.

2.6.5.7. Soak up gross amounts of liquid spillage with absorbent towels.

2.6.5.8. Place absorbent paper towels over areas that are still visibly soiled.

2.6.5.9. Pour the bleach solution or other approved disinfectant over the absorbent towels. Allow the disinfectant to come in contact with the surface for at least ten minutes.

2.6.5.10. Carefully soak up any liquid using towels with wiping motion. If area is still visibly soiled with blood or body fluids - REPEAT the procedures.

2.6.5.11. Carefully lift and place saturated towels into red or designated biohazard plastic bags.

2.6.5.12. Wash hands, as well as any skin surfaces splashed with bleach or disinfectant solution, with soap and water after cleaning up PIMs.

3. Hepatitis B Vaccine Program.

3.1. Hepatitis B vaccination shall be made available, after the employee has received the initial training and within ten working days of initial assignment, to all employees who have occupational exposure unless employee has previously received the complete Hepatitis B vaccination series, antibody testing has revealed the employee is immune, or the vaccine is contraindicated for medical reasons (e.g., pregnancy).

3.2. Hepatitis B vaccination series is mandatory for all active duty personnel at risk of exposure to blood or body fluids potentially contaminated with blood IAW 29 CFR 1910.1030.

3.3. **The vaccine series consists of three shots:** The initial injection, followed by a second and third at 30 and 180 days, respectively.

4. Procedures for Post-Exposure to Blood or Body Fluids.

4.1. **Remove contaminating substance off body as soon as possible.** Skin and mucous membranes shall be flushed profusely with soap and water. Soap should not be used on mucous membranes. Instead, these areas should be flushed with copious amounts of water only.

4.2. **Report incident to the supervisor.**

4.3. Individuals will report to the 8th Medical Group, Primary Care Clinic (PCC) as soon as possible.

4.4. The PCC will notify Public Health of all possible exposures and the employee will be referred to Public Health for follow-up. The source individual shall be tested as soon as feasible in order to determine HBV and HIV status.

4.5. Supervisor will ensure exposed individuals report to Urgent Care Clinic as soon as possible and notify their Unit Safety Officer/NCO as required by their unit.

5. Training.

5.1. Unit training personnel will be responsible for training personnel on bloodborne pathogens in their organization upon initial assignment as required and annually.

5.2. Training shall be provided to the employee at the time of initial assignment to tasks where occupational exposures may take place and annually thereafter.

5.3. Additional training shall be provided when changes to tasks, procedures, or employee are occupational exposure occurs. The additional training may be limited to addressing the new exposures.

5.4. Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used.

5.5. The training shall contain at a minimum the following elements:

5.5.1. An accessible copy of the 29 CFR 1910.1030, and an explanation of its contents.

5.5.2. General explanation of the epidemiology, symptoms, and modes of transmission of bloodborne pathogens and disease.

5.5.3. An explanation of the organization's exposure control plan.

5.5.4. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to PIMs.

5.5.5. An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and PPE.

5.5.6. Information on the types, proper use, location, removal, handling, decontamination, and disposal of PPE.

5.5.7. An explanation of the basis for selection of PPE.

5.5.8. Information on the Hepatitis B vaccine, including information on its efficacy, safety, method of administration, and the benefits of being vaccinated.

5.5.9. An opportunity for interactive questions and answers with the person conducting the training session.

5.6. Public Health will provide training to unit training personnel and will act as a resource for information on bloodborne pathogens.

6. Documentation of Training on AF Form 55, *Employee Safety and Health Record*.

6.1. Supervisors ensure personnel at risk receive proper training and enforce infection control policies for avoiding injuries/exposures. Document training on the AF Form 55 and include the following items:

6.1.1. Date of training.

6.1.2. Name of Instructor.

6.1.3. Training outline title.

6.2. Training records shall be maintained for three years from the date on which the training occurred.

6.3. **Availability of Records:** Workers may obtain copies of their medical and training records by requesting them through their supervisor. Employee representatives may gain access to employee medical records, upon written consent from each employee whose record is sought.

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