Chapter 28

BLOODBORNE PATHOGENS (BBP'S)

1. Purpose. To establish a Bloodborne Pathogen Exposure Control Plan to minimize exposure to bloodborne pathogens (BBS) for personnel who are in occupations in which they may come in contact with these agents while on board Naval Air Engineering Station Lakehurst.

2. Background. Many personnel working at NAES Lakehurst are required to work in occupations, or may find themselves in situations, where exposure to Blood Borne Pathogens (BBP'S) possible. The two BBPs where control is most needed concern Hepatitis B Virus (HBV) and the Human Immunodeficiency Virus (HIV). The proper procedures and actions as listed herein will reduce the chance of contracting these and other BBP'S.

3. Discussion. The Occupational Safety and Health Administration (OSHA) has issued a BBP standard to protect the more than 5.6 million workers who may be occupationally exposed. Each year, more than 200 deaths and more than 9,200 bloodborne infections occur throughout the United States. BBP'S are microorganisms in human blood that can cause disease in humans. They include HBV and HIV which causes Acquired Immunodeficiency Syndrome (AIDS). Since any exposure to blood could potentially be fatal, this instruction will provide guidelines to emphasize who may be reasonably anticipated to come into contact with human blood and other potentially infectious material in order to perform their jobs.

4. Applicability. This instruction applies to all departments and tenant commands who have personnel/operations that may involve exposure to BBP'S.

5. Definitions

a. Bloodborne Pathogen's (BBP'S). Pathogenic microorganisms that are present in human blood and cause disease in humans. These pathogens include, but are not limited to, HBV and HIV.

b. Contaminated. The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

c. Contaminated Laundry. Laundry which has been soiled with blood or other potentially infectious materials.

d. Decontamination. The use of physical or chemical means to remove, inactivate, or destroy BBP'S on a surface or item.

e. Disinfect. To inactivate virtually all recognized pathogenic microorganisms, but not necessarily all microbial forms (e.g., bacterial spores) on inanimate objects.

f. Engineering Controls. Controls that isolate or remove the hazard from the workplace.

g. Exposure Incident. A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood/other potentially infectious material that results from the performance of an employee's duties.

h. Occupational Exposure. Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood/other potentially infectious materials that may result from the performance of an employee's duties. This definition excludes incidental exposures that may take place on the job, that are neither reasonably nor routinely expected, and that the worker is not required to incur in the normal course of employment.

i. Other Potentially Infectious Material

(1) Body fluids including semen, vaginal secretions, cerebrospinal fluids, synovial fluid, pleural fluid, periocardial fluid, peritoncal fluid, amniotic fluid, and any body fluid that is visibly contaminated with blood.

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead).

(3) HIV or HBV containing cell or tissue cultures, organ cultures, and culture medium or other solutions.

j. Parenteral. Piercing mucous membranes or the skin barrier through needles, human bites, cuts, abrasions, etc.

k. Personal Protective Equipment (PPE). Specialized clothing or equipment worn by an employee for protection against a hazard.

l. Potentially Infections Waste. Blood and blood products, all contaminated sharps, all tissue specimens, all operating wastes, isolation waste, all laboratory wastes contaminated with blood or body fluids, and all wastes heavily contaminated with blood or body fluids.

m. Source Individual. Any individual, living or dead, whose blood, body fluids, tissues, or organs may be a source of exposure to the employee.

n. Sterilize. The use of physical or chemical procedures utilized to destroy all microbial life including highly resistant bacterial endospores.

o. Universal Precautions. A method of infection control in which all blood and fluids are treated as if known to be infectious for HIV, HBV, and other BBPs.

6. Training

a. Employees assigned to positions in which there is the potential of occupational exposure shall receive initial training and continuing training on an annual basis.

b. Training will be coordinated by the Public Safety Department, Fire Division, and will be conducted with CPR and First Aid Training. It will include the following information:

(1) An accessible copy of the OSHA Bloodborne Pathogen standard.

(2) A general explanation of the epidemiology and symptoms of bloodborne diseases.

(3) An explanation of the mode of transmission of BBP'S.

(4) An explanation of the employee's Exposure Control Plan and the means by which the employee can obtain a copy of the written plan.

(5) An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.

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

(7) Information on the types, proper uses location, removal, handling, decontamination, and disposal of PPE.

(8) An explanation of the basis for selection of PPE.

(9) Information on the HBV vaccine, including information on its efficiency, safety, method of administration, the benefits of being vaccinated, and that the vaccine will be offered free of charge.

(10) Information on appropriate actions to take and persons to contact, in an emergency involving blood or other potentially infectious materials.

(11) An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.

(12) Information on the post exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident.

(13) An explanation of the signs/labels/color coding used.

(14) A question and answer period.

c. Copies of training rosters will be retained by the Safety Office for inclusion into official personnel files. The roster shall include the date of training, name of person and job title conducting the training, social security number, and signature of all attendees.

7. Medical Surveillance

a. All personnel going to designated positions will be entered into a Medical Surveillance Program for pre-screening. This pre-screening will be accomplished prior to receiving the HBV vaccine within ten days of assignment to the position. After the vaccination is administered, it will be indicated in the employee's immunization record (SF 601) as part of the employee's medical record.

b. Employees are not required to submit to an HBV anti-body pre-screening or vaccination. If an employee declines the HBV vaccine, a Hepatitis B Vaccine Declination must be signed by the employee and kept on file. The employee may later request the vaccine, if so desired.

8. Personal Protective Equipment (PPE). The use of appropriate PPE during a potential occupational exposure is, to some extent, going to be determined by the employee. The key is to protect yourself from exposure to a Bloodborne Pathogen. The following items will be required to be in all Security and Fire Department vehicles:

a. Gloves. Disposable (single use) gloves such as surgical or examination are recommended. These gloves shall be removed as soon as practical when contaminated or as soon as feasible if they are torn or punctured. Disposable gloves shall not be washed or decontaminated for reuse.

b. Masks, Eye Protection, Face Shield. Masks in combination with eye protection devices, such as goggles or glasses with solid side shields or a face shield, shall be worn whenever splashes, spray spatter/droplets of blood, or other potentially infectious materials may be generated and eye/nose/mouth contamination can be expected.

c. Skin Cleaner. A skin cleaner is recommended for use if immediate access to washing facilities is not available.

d. Additional Recommended Items

(1) Gowns. Appropriate protective clothing such as gowns aprons, or disposable clothing (Tyvek suits) shall be worn if a severe occupational exposure situation is encountered.

(2) Shoe Covers or Boots. Shoe covers or boots shall be maintained and worn if grass contamination is expected.

(3) The Child Development Center and Center swimming pool shall have disposable gloves accessible to employees as a minimum.

9. Exposure Determination. There are three categories of exposure risk for BBPs. They include the following:

a. Category I. Personnel who may be routinely exposed to BBP'S. Job classifications in this category may be exposed to BBP'S on a routine basis.

TITLE	SERIES
(1) Medical Officer	602
(2) Occupational Health Nurse	610
(3) Diagnostic Radiological Technician	647
(4) Health Technician	640
(5) Emergency Medical Technician	081
(6) Firefighter	081

b. Category II. Personnel who are not routinely exposed, but may be so under certain circumstances. The following is a list of job classifications where some personnel may have occupational exposure to BBP'S when performing certain tasks.

TITLE	SERIES
(1) Safety Engineer	803
(2) Safety Specialist	018
(3) Industrial Hygienist	690
(4) Fire Protection Inspector	081
(5) Police Officer	083
(6) Security Guard	085

(7) In addition, people trained and assigned in the following areas might have occupational exposure while performing those duties. They are as follows:

(a) Individuals trained in Cardio Pulmonary Resuscitation (CPR).

(b) Lifeguards.

(c) Janitorial crews who clean up after Sick Bay and other spills of body fluids.

(d) Child caregivers.

(e) Hazardous waste personnel.

(f) Confined space workers.

(g) Employees listed in this section have potential for occupational exposure only when performing emergency response tasks. These include emergency first aid and CPR. Janitorial crewmembers only have potential for occupational exposure during cleaning of areas and materials that were soiled by body fluids.

c. Category III. Personnel who are never exposed.

(1) All other job classifications that are not listed in Category I or Category II fit into this category. Personnel in this category should not expect any occupational exposure to BBP'S.

(2) There may be instances in which Category III personnel may be in a position to be exposed by events happening around them. In this situation, please follow the following guidelines:

(a) In case of mishap, alert emergency response personnel and supervision immediately. Emergency numbers are as follows:

1.	MEDICAL EMERGENCY	extension 911
2.	FIRE	extension 911
3.	SECURITY	extension 911

(b) Keep victim calm and wait for emergency response personnel to arrive.

(c) If you are not trained, don't attempt first aid.

10. Exposure Control

a. Every work area shall evaluate its routine and reasonably anticipated tasks and procedures to determine where there is actual or potential exposure to blood or other potentially infectious materials. All employees whose duties include routine or reasonably anticipated tasks or procedures where

there is actual or potential exposure to blood or other potentially infectious material shall be included under this plan. A list of all job classifications in which employees in those classifications have occupational exposure will be maintained as well as a list of job classifications in which some employees have exposure. A list of all tasks and procedures in which occupational exposure occurs in the latter group will be maintained. If the nature of the task or activity has direct contact with blood or other body fluids to which universal precautions would apply, PPE should be available and worn as outlined in this instruction, but use of such equipment should not be used in exposure determination. If activity is performed without blood exposure, but exposure may occur in an emergency, PPE must be available. After the potential exposures have been determined, rationale of this determination should be documented and kept as a record. This exposure determination shall be reviewed annually or when there are any significant changes in tasks or procedures and updated as necessary.

b. Since medical history and examination cannot reliably identify all employees infected with HIV or other BBP'S, blood and body fluid precautions should be consistently used for all personnel. This is especially true for those in emergency care settings, in which the risk of blood exposure is increased and the infectious status of the patient is usually unknown.

11. Universal Precautions

a. Universal precautions are intended to supplement rather than replace recommendations for routine infection control such as hand washing and use of gloves to prevent gross microbial contamination of hands. Hand washing facilities should be readily available. If facilities are not and cannot be made available, an appropriate antiseptic hand cleaner in conjunction with clean towels or antiseptic towelettes must be available and the hands washed with soap and running water as soon as feasible.

(1) Universal precautions apply to blood and other body fluids containing visible blood. Blood is the single most important source of HIV, HBV, and other blood pathogens in the occupational setting. Universal precautions also apply to tissues, semen, vaginal secretions, and the following fluids: cerebral spinal, synovial, pleural, peritoneal, pericardial, and amniotic. Universal precautions do not apply to feces, nasal secretions, sputum, saliva, sweat, tears, urine, and vomit unless they contain visible blood.

(2) Universal precautions should be the minimum precautions for all procedures in an emergency or outpatient setting in which there is surgical entry into tissues or report of major traumatic injuries. Routine use of appropriate barrier precautions such as gloves and surgical masks should be worn for all invasive procedures. Protective eyewear with face shield should be worn if splashing of blood or body fluids is likely. Also, protective barrier gowns or aprons should be worn if spills are expected.

b. The methods used during employee exposure should be carefully reviewed and attempts to minimize exposure by engineering and work practice controls should be used as the primary method to minimize or eliminate the exposure. These controls should be examined, maintained, or replaced at the time of the annual exposure determination or as needed.

12. Warning Labels

a. Warning labels shall be affixed to containers of the infectious waste; refrigerators and freezers containing blood or other potentially infectious material; or other containers used to store or transport blood or other potentially infectious materials. The labels shall be fluorescent orange or orange-red or predominately so, with lettering and symbols in contrasting colors, using the accepted biohazard label. The label shall either be an integral part of the container or shall be affixed as closely and safely as possible to the container by string, wire adhesive, or other method that prevents their loss or unintentional removal. Red bags or red containers may be substituted for labels on containers of infectious waste. Regulated waste that has been decontaminated need not comply.

13. CPR Training

a. As a policy for minimizing risk of transmission of AIDS during CPR training, the following general recommendations will be:

(1) The manufacturer's recommendations and provisions for sanitary practices for the training mannequin should be followed.

(2) Students or instructors should not actively participate in training sessions (hands-on training with mannequins) if they:

- Have dermatological lesions on hands or in oral or circumoral areas.
- Are known to be seropositive for HBV surface antigens.
- Have upper respiratory tract infections, if they have AIDS.
- Have reason to believe that he/she has been exposed to or is in the active stage of any infectious process.

(3) Students should be told in advance that training sessions will involve close physical contact with their fellow students.

(4) If more than one CPR mannequin is used in a particular training class, students should preferably be assigned in pairs, with each pair having contact with only one mannequin. This approach would lessen the possible contamination of several mannequins by one individual and therefore limit possible exposure of other class members.

(5) All persons responsible for CPR training should be thoroughly familiar with hygienic concepts (e.g., thorough hand washing prior to mannequin contact and not eating during class to avoid contaminating

mannequins with food particles) as well as the procedures for cleaning and maintaining mannequins and accessories (e.g., face shields). Mannequins should be inspected routinely for signs of physical deterioration such as cracks or tears in plastic surfaces which makes thorough cleaning difficult, if not impossible. The clothes and hair of mannequins should be washed periodically (e.g., monthly or whenever visibly soiled.)

(6) During the training of two-rescuer CPR, there is no opportunity to disinfect the mannequin between students when the so-called switching procedure is practiced. To limit the potential for disease transmission during this exercise, the student taking over ventilation on the mannequin should simulate ventilation instead of blowing into the mannequin. This recommendation is consistent with current training recommendations of the American Red Cross and the American Heart Association.

(7) Training for the obstructed airway procedure involves the student using his/her finger to sweep foreign matter out of the mannequin's mouth. This action could contaminate the student's finger with exhaled moisture and saliva from previous students in the same class or contaminate the mannequin with material from the student's finger. When practicing this procedure, the finger sweep should be either simulated or done on a mannequin whose airway was decontaminated before the procedure and will be decontaminated after the procedure.

(8) Personnel conducting the mannequin disassembly and decontamination should wear protective latex gloves and wash their hands after finishing. At the end of each class, the following procedures should be done as soon as possible to avoid drying of contamination on mannequin surfaces:

(a) Disassemble the mannequin as directed by manufacturer.

(b) As indicated, thoroughly wash all external and internal surfaces (also reusable protective face shields) with warm soapy water and brushes.

(c) Rinse all surfaces with fresh water.

(d) Wet all surfaces with a sodium hypochlorite solution having at least 500 PPM of free available chlorine (one-quarter cup of liquid household bleach per gallon of tap water) for 10 minutes (this solution must be made fresh at each class and discarded after each use).

(e) Rinse with fresh water and immediately dry all external and internal surfaces; rinsing with alcohol will aid drying of internal surfaces, and this drying will prevent the survival and growth of bacterial or fungal pathogens if the mannequins are stored for periods longer than the day of cleaning.

(9) Each time a different student uses the mannequin in a training class, the individual protective face shield, if used, should be changed. In between students or after the instructor demonstrates a procedure such as cleaning any obstruction from the airway, the face and inside the mouth of the mannequin should be wiped vigorously. This shall be accomplished utilizing clean absorbent material (e.g., 4 inch by 4 inch gauze pad), wet with either the hypochlorite solution described above, or with 70 per cent alcohol (isopropanol or ethanol). The surfaces should remain wet for 30 seconds before they are wiped dry with a second piece of clean, absorbent material.

NOTE: Although highly bactericidal, alcohol's are not considered to be broad-spectrum agents, and its use here is recommended primarily as an aid in mechanical cleaning; also, in a short contact period, alcohol may not be effective against bacteria or other pathogens. Nonetheless, in the context of vigorous cleaning with alcohol and absorbent material, little viable microbacterial contamination is likely after the cleaning procedure.

(10) Employees responsible for the use and maintenance of CPR mannequins should be encouraged not to rely totally on the mere presence of a disinfectant to protect them and their students from cross-infection during training programs. Emphasis should be placed on the necessity of thorough physical cleaning (scrubbing, wiping) as the first step in an effective decontamination protocol. Microbial contamination is easily removed from smooth, nonporous surfaces by using disposable cleaning cloths moistened with a detergent solution. There is no evidence that a soaking procedure alone in a liquid is as effective as the same procedure accompanied by vigorous scrubbing.

(11) With specific regard to concerns about potential for HBV and AIDS transmission in CPR training, it has been shown that the HBV is not as resistant to disinfectant chemicals as it was once thought to be. Studies have shown that the retroviral agent that causes AIDS HIV is comparatively delicate and is inactivated in less than 10 minutes at room temperature by a number of disinfectant chemicals, including the recommended agents, alcohol and sodium hypochlorite. Coupled with scrubbing and rinsing with soap and water, the sodium hypochlorite dilution will ensure that HIV, as well as a wide variety of other infectious agents with potential for contaminating mannequin surfaces, will be killed. A higher level of surface disinfection is not warranted and the recommended disinfectant chemicals (alcohol and household bleach) are safe, effective, inexpensive, easily obtained, and well tolerated by students, instructors, and mannequin surfaces when properly used.

b. Policy for Minimizing Risk of Transmission of AIDS during Actual CPR

(1) No transmission of hepatitis virus infection during mouth-to-mouth resuscitation has been documented. However, because of the theoretical risk of salivary transmission of HIV during mouth-to-mouth resuscitation, special attention should be given to the use of disposable airway equipment or

resuscitation bags and the wearing of gloves when in contact with blood or other body fluids. Resuscitation equipment and devices known or suspected to be contaminated with blood or other body fluids should be used once and disposed of or be thoroughly cleaned and disinfected after each use.

(2) Clear plastic facemasks with one-way valves are available for use during mouth-to-mask ventilation. These masks provide diversion of the victim's exhaled gas away from the rescuer and may be used by health care providers and public safety personnel properly trained in their use during two-person rescue in place of mouth-to-mouth ventilation. The need for and effectiveness of this adjunct in preventing transmission of an infectious disease during mouth-to-mouth ventilation are unknown. If this type of device is to be used as reassurance to the rescuer that a potential risk might be minimized, the rescuer must be adequately trained in its use, especially with respect to making an adequate seal on the face and maintaining a patent airway. Such a device requires two hands to secure a proper face seal and to maintain an open airway. As an additional precaution, the rescuer may elect to wear latex gloves because saliva or blood on the victim's mouth or face may be transferred to the rescuer's hands.

14. Post Exposure Evaluation

a. When the employee incurs an exposure incident, it shall be reported to the Occupational Health Nurse immediately. All employees who incur an exposure incident will be offered post exposure evaluation and follow-up in accordance with the OSHA Standard. This follow-up will include the following:

(1) Documentation of the route of exposure and the circumstances related to the incident.

(2) If possible, the identification of the source individual and the status of the source individual. The blood of the source individual will be tested after consent is obtained for HIV/HBV infection.

(3) Results of testing of the source individual will be made available to the exposed employee with the exposed employee informed about the applicable laws and regulations concerning disclosure of the identity and infectiousness of the source individual.

(4) The employee will be offered the option of having their blood collected for testing of his/her HIV/HBV serological status. The blood sample will be preserved for 90 days to allow the employee to decide if the blood should be tested for HIV/HBV serological status. However, if the employee decides prior to that time that testing will or will not be conducted, then the appropriate action can be taken and the blood sample discarded.

(5) The employee will be offered post exposure prophylaxis in accordance with the current recommendations of the USPHS.

(6) The employee will be given appropriate counseling concerning precautions to take during the period after the exposure incident. The employee will also be given information on what potential illnesses to be alert for and to report any related experiences to appropriate personnel.

15. Action. This plan and work practice controls will become effective immediately.

a. Public Safety Department shall:

(1) Keep a compiled list of tasks and job classifications which involve potential exposure to BBPs.

(2) Ensure the requirements for training and medical surveillance are complied with.

(3) Ensure PPE, as outlined in paragraph 8, is available at all times for use by personnel where an occupational exposure is likely.

(4) Maintain required training records.

b. BRMEDCLINIC shall:

(1) Administer the Medical Surveillance Pre-screening Program as outlined in this instruction.

(2) Provide assistance in ensuring and implementation of all aspects of this program.

c. All Departments and Tenant Commands shall:

(1) Implement the requirements of this program immediately.

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