

**Naval Support Activity Monterey /**  
**Naval Postgraduate School**



**SAFETY GRAM**  
**BloodBorne Pathogens**

July 27, 2011

**Background:** Bloodborne pathogens are viruses present in human blood and body fluids that can cause disease in humans. Diseases like the hepatitis B virus (HBV), human immunodeficiency virus (HIV) and others are preventable if the appropriate precautions are employed.

**Purpose:** To define and provide guidance on the establishment and maintenance of the bloodborne pathogen program.

**Scope & Applicability:** Annual Bloodborne pathogen training is required for all personnel and their supervisors for whom it is possible to reasonably anticipate occupational exposure to blood or other potentially infectious material. This includes, but is not limited to, employees required to provide first aid/emergency rescue (e.g. lifeguards), and law enforcement personnel.

In December of 1991, the Occupational Safety and Health Administration (OSHA) issued the Bloodborne Pathogens Standard which applies to employees whose duties include the possibility of an occupational exposure to bloodborne pathogens. The intent of the standard is to **limit the employee exposure to blood or other potentially infectious materials (OPIM) and prevent transmission of bloodborne pathogens in the workplace.** Navy policy is to provide safe and healthful working conditions for all employees, and implementation of the Bloodborne Pathogens Standard is an integral component of this objective.

**References:**

- 29 CFR 1910.1030 (OSHA Bloodborne Pathogens Standard)
- OPNAVINST 5100.23 Series, Chapter 28

**Responsibilities:**

Per OSHA Bloodborne Pathogens Standard, employers shall:

1. Establish an exposure control plan (ECP) designed to eliminate or minimize employee exposure.
2. Ensure that a copy of the exposure control plan is accessible to employees.
3. Review and update the ECP at least annually or whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure.
4. Implement universal precautions as well as engineering and work practice controls to eliminate or reduce employee exposure.
5. Offer the hepatitis B virus (HBV) vaccination series free of charge.

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**PROGRAM INFORMATION**

**Modes of Transmission:** Bloodborne pathogens are transmitted through blood to blood contact. Blood in this context automatically includes other potentially infectious materials (OPIM). OPIM includes the following:

- fluids surrounding the heart, lung, brain, stomach, joints and tendons,
- fluids in the womb of a pregnant woman,
- semen and vaginal secretions
- any fluid that is visibly contaminated with blood

It is important to know the ways exposure and transmission are most likely to occur in your particular situation. An exposure (or exposure incident) is defined as a specific eye, mouth, other mucous membrane, non-intact skin or parenteral (e.g. intravenous or intramuscular injection) contact with blood or OPIM. For example, if someone infected with HBV cut their finger on a piece of glass, and then you cut yourself on the now infected piece of glass, it is possible that you could contract the disease. Anytime there is blood-to-blood contact with infected blood or body fluids, there is a potential for transmission. **Assume all spilled blood is contaminated with a bloodborne pathogen.**

Many times bloodborne pathogens are transmitted in non occupational settings through sexual contact, sharing of hypodermic needles and from mother to their babies before birth. Occupationally, transmission can occur through:

- Accidental puncture from contaminated needles, broken glass or other sharps.
- Contact between broken or damaged skin and infected body fluids.
- Contact between mucous membranes and infected body fluids.

**High Risk Occupations:** Certain occupations and associated tasks present a higher risk of exposure. High risk occupations include but are not limited to law enforcement personnel, firefighters, lifeguards, first aid providers and medical personnel.

By recognizing tasks which present increased risk of exposure to blood and OPIM, proper PPE and modified work methods can be utilized to reduce the risk of exposure.

Examples of tasks presenting exposure hazards include:

- Risk to law enforcement personnel resulting from exposure to sharp objects such as needles or knives while conducting searches on the personnel or property. Ensure that gloves are worn when performing searches and procedures are employed which minimize the possibility of needle sticks or lacerations.
- Risk to law enforcement personnel during altercations caused by potential of blood. Law enforcement personnel should ensure that procedures for handling such incidents are strictly followed as they will most likely aid in minimizing injury to themselves and others. Don PPE as soon as reasonably possible.
- Risk of exposure to emergency personnel and law enforcement while assisting in motor vehicle

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mishaps or personal injuries due to potential for blood, OPIM and jagged or sharp objects such as broken glass or torn metal. Ensure that proper PPE is worn (e.g. gloves).

- Risk to personnel performing first aid. Ensure that gloves and other appropriate PPE are worn and proper disposal procedures are utilized. If performing CPR, utilize one way breathing devices if available.

**Universal Precautions:** Universal precautions is an exposure prevention policy in which all blood and OPIM are treated as if they are infectious regardless of the perceived status of the source individual. **Always treat blood or OPIM as if it is infected with bloodborne pathogens.** This approach is used in all situations where exposure to blood or OPIM is possible and certain work practices shall always be followed in situations where exposure may occur.

The first general practice to be followed with universal precautions is that if you are in a situation or area where there is reasonable likelihood of exposure, you should never:

- eat
- drink
- smoke or chew tobacco
- apply cosmetics or lip balm
- handle contact lenses

**Hand washing** is one of the easiest and **most important** practices used to prevent transmission of disease and sickness including bloodborne pathogens. Hands or other exposed skin should be thoroughly washed as soon as possible following an exposure incident. Use **antibacterial soap** if possible. Avoid harsh, abrasive soaps such as soaps designed for removing grease or dirt with abrasive additives because these may open existing abrasions or sores on the skin.

If unable to wash hands in a sink, use an antibacterial cleanser or antibacterial towelettes. This option may be necessary when responding to a situation like a traffic mishap where soap and water may not be available however; hands should be washed with water and soap as soon as feasible.

**Personal Protective Equipment (PPE):** Utilizing the proper personal protective equipment (PPE) is a simple precaution to take in preventing blood or OPIM from coming in contact with skin or eyes. PPE provides a barrier between you and the blood or OPIM. Rules to follow with PPE are:

- Always wear PPE in exposure situations.
- Replace PPE that is torn, punctured or has otherwise lost its ability to function as a barrier.
- Remove and properly dispose PPE before leaving the work area.

**Areas with routine exposure to blood or OPIM should have the necessary PPE readily accessible.** All PPE shall be removed prior to leaving the work area. Contaminated PPE or other materials, such as clothing, should be placed in appropriately labeled bags or containers until it is disposed of or laundered. Know the location of these bags and specific procedures to be followed.

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### Gloves:

- Gloves shall be worn when it can be reasonably anticipated that there will be contact with blood, OPIM or mucous membranes and when handling or touching contaminated items or surfaces.
- Gloves should be made of **latex, nitrile, rubber or other water impervious materials**.
- Utility gloves may be decontaminated and reused if the integrity of the glove is not compromised.
- Use bandages to protect areas such as cuts, sores or abrasions on your hands.
- Wearing a single glove on each hand may provide an adequate barrier in situations where a puncture or laceration is unlikely but double gloves should be worn if a single glove is too thin.
- Always inspect gloves for tears or punctures before using them.
- Remove contaminated gloves carefully and ensure that you do not touch the outside of the gloves with any bare skin.
- Dispose of the gloves in a proper container or bag so that no one else will come in contact with them.



*Masks, Eye Protection and Face Shields:* Face masks in combination with eye protection devices such as chin-length face shields, goggles or glasses with side shields shall be worn anytime there is a **risk of splashing, spraying, spattering, vaporization or other facial contact** with contaminated fluids. Use of this PPE regimen protects the facial region in which bloodborne pathogens can be transmitted via thin membranes in the eyes, nose or mouth. Exposure could occur while performing first aid, cleaning up a spill or during other emergent activities.

### Other PPE:

- One way breathing devices should be used when administering CPR.
- Gowns, aprons and other protective body clothing shall be worn depending upon the task and degree of exposure anticipated. These forms of PPE protect clothing and keep blood or OPIM from soaking through to skin or clothing. Normal clothing that becomes contaminated with blood or OPIM should be **removed as soon as possible and handled as little as possible**. Follow universal precautions and place items in an appropriately labeled bag or container until decontaminated, disposed or laundered.

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**Hazard Communication:** The bloodborne pathogens standard requires that warning labels shall be affixed to the following:

- Containers of regulated waste.
- Refrigerators and freezers containing blood or OPIM.
- Containers used to store transport or ship blood or OPIM.

These labels are fluorescent orange, red or orange-red, contain the biohazard symbol and include the term biohazard on the label. The required labels shall be an integral part of the container or shall be affixed as close as feasible to the container by string, wire, adhesive or other method that prevents their loss or unintentional removal.



**Disposal Procedures:** Regulated waste includes any liquid or semi-liquid blood or other potentially infectious materials and contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed. According to the definition of regulated waste, contaminated gloves would be considered a regulated waste. All regulated waste must be disposed in properly labeled containers or red biohazard bags, and this waste must be disposed at an approved facility.



**Sharps:** Sharps include needles, broken glass and other contaminated sharp edged items. Since sharps have the ability to puncture skin resulting in an exposure, they must be placed in sharps disposal containers before being disposed. Sharps containers must be rigid puncture-resistant containers that when sealed, are leak resistant and cannot be opened easily. Sharps disposal containers must be red in color, have a biohazard label and accessible.

**Exposure Control Plan (ECP):** The OSHA Bloodborne Pathogens Standard requires that employers establish a written Bloodborne Pathogens Exposure Control Plan (ECP) to eliminate or minimize employee exposure. The ECP must **identify and document tasks and job classifications** where there is exposure to blood or OPIM. The ECP must **be accessible to employees** and must be **updated at least annually** and when alterations in procedures create new occupational exposure. The other key elements of the ECP are:

- A schedule of how and when the provisions of the standard will be implemented.
- Implementation of universal precautions to prevent or eliminate exposure.
- Training.
- HBV vaccination.
- Post-exposure evaluation and follow up.
- Recordkeeping.
- Implementation of methods of compliance, such as engineering and work practice controls, PPE, housekeeping and exposure evaluation procedures.

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**Post Exposure Procedures:** Even with the implementation of universal precautions an exposure incident can still occur. In the event of an exposure, the exposed individual should **inform their supervisor immediately** and will be requested to complete a report of the exposure incident. Promptly thereafter, a confidential **medical evaluation will be conducted**. This medical evaluation and subsequent follow-up is made available at no cost to employees. The medical evaluation will include the following:

- Documentation of the route(s) of exposure
- HBV and HIV antibody status of the source individual if known or able to be obtained.
- The circumstances under which the exposure occurred.
- Collection of blood from the exposed employee for determination of current HIV and HBV status.
- Follow up examination of the exposed individual.
- The opportunity if physically able, to begin HBV vaccination series.

**Vaccination Series:** Unlike HIV and HCV, there is a vaccine available for HBV. The HBV vaccination is administered in a series of three shots which gradually builds up the body's immunity to the HBV. There is no danger of contracting HBV from the vaccination series and its length of effectiveness is believed to be indefinite. Employees who have routine exposure to bloodborne pathogens (such as first aid responders,) shall be offered the Hepatitis B vaccine series at no cost to themselves unless:

- They have previously received the vaccine series
- Antibody testing has revealed they are immune
- The vaccine is contraindicated for medical reasons

In these cases they need not be offered the series.

If the employee initially declines the vaccinations but later decides to accept the vaccination while covered by the standard, vaccinations must be provided. Employees who decline the vaccination series must sign a declination form. Employees participating in the HBV vaccination series shall have the supervisor schedule the appointments. It is imperative that these vaccination appointments are not missed as the HBV vaccine is costly and perishable.