Bloodborne Pathogens: 
Protection and Training

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The Occupational Safety and Health Administration (OSHA) bloodborne pathogens standard is designed to protect workers against “blood or other potentially infectious materials” as defined in 29 CFR 1910.1030. This includes things such as the human immunodeficiency virus (HIV) and Hepatitis B.

Who is affected by the bloodborne pathogen standard?  
Exposure to blood and body fluids can occur in a wide range of workplaces. However, the bloodborne pathogen standard is directed at those workplaces and employees where “occupational exposure” can occur. Occupational exposure is defined in 29 CFR 1030(b) as “reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee’s duties.” It is the responsibility of the employer to determine who might have “reasonably anticipated” exposure to blood or body fluids.

What protective measures are available?  
One fundamental protective measure is the use of universal precautions. This is defined in 29 CFR 1030(b) as “an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens”. The principle is that blood or body fluid that is encountered is assumed to be infected and take the necessary precautions to prevent exposure. This is a risk assessment in that an assumption is made in favor of the employee, rather than to assume the blood or body fluid is not infected and risk exposure.

A second precaution is the use of engineering and work practice controls. This includes such precautions as providing avenues for hand washing and sanitation, preventing the recapping of needles, and preventing eating and drinking in areas where blood and body fluids exist. Procedures such as this are typically defined in written procedures and reinforced with signs posted throughout the workplace. For example, a written program material may outline that eating can take place only in designated areas and signs might be posted in areas where eating is prohibited.

Personal protective equipment (PPE) is a third precaution that can be taken. PPE creates a physical barrier that is designed to prevent contact with potentially infected blood and body fluid.

The OSHA standard delineates the following as PPE:
- Gloves
- Masks
- Eye protection
- Face shields
- Gowns
- Aprons
- Other protective body clothing

A fourth precaution is the Hepatitis B vaccination that is discussed in 29 CFR 1910.1030(f). The vaccination “shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons”. Employees may elect not to receive the vaccination. If this occurs, the employee must sign a statement indicating their choice of declining the vaccination. Text to be used on this form is found in Appendix A to the regulation. This appendix is considered “mandatory”, which means the employer must implement the content of the appendix within the Bloodborne Pathogen Program.

What additional measures need to be taken?
A primary activity is to ensure ongoing implementation and compliance with the Bloodborne Pathogen Program. This can be accomplished through an auditing process that includes a review of documents, medical records, and training records associated with the program as well as workplace observations of employees who are within the scope of the program. Physical inspections of the workplace can be part of the auditing process that includes ensuring that sharps containers, signs, PPE, and other physical components of the program are in place, operable, and being maintained. Employee interviews can be randomly conducted to ask questions regarding the program to ensure that employees possess the necessary knowledge related to the program.

Another area of additional measures relates to the Hepatitis B vaccination series. The initial treatment is a series of three shots that are given to an employee over the course of a few
Once these shots are given, a follow up test known as a “titer” must be performed. This is a blood test that is used to determine the level of immunity against the Hepatitis B virus (HBV). Though it is not clearly indicated in the wording of the standard, OSHA issued a letter of interpretation that references a U.S. Public Health Service document that states, “a hepatitis B vaccination booster is not currently required by the U.S. Public Health Service, Centers for Disease Control and Prevention’s (CDC’s) Guidelines for the Immunization of Health-Care Workers. However, the December 26, 1997 CDC Guidelines does indicate that “postvaccination testing for antibody to hepatitis B surface antigen (anti-HBs) response is indicated for healthcare workers who have blood or patient contact and are at ongoing risk for injuries with sharp instruments or needlesticks.” This means that a titer or antibody testing is required approximately two months after the employee finishes the vaccination series. The indicated guidelines can be found in [Appendix E of CPL 2-2.69], which is available on OSHA’s website at http://www.osha.gov.”

**What training needs to occur?**

The bloodborne pathogen regulation outlines both frequency and content requirements for employee training. In relation to frequency, initial training must occur “at the time of initial assignment to tasks where occupational exposure may take place”. Refresher training must occur on at least an annual basis. Training must also take place whenever a change occurs that affects employee exposure. According to 29 CFR 1910.1030(g)(2)(vii), the content of the training must include:

- An accessible copy of the regulatory text of this standard and an explanation of its contents;
- A general explanation of the epidemiology and symptoms of bloodborne diseases;
- An explanation of the modes of transmission of bloodborne pathogens;
- An explanation of the employer’s exposure control plan and the means by which the employee can obtain a copy of the written plan;
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment;
- Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment;
- An explanation of the basis for selection of personal protective equipment;
- Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
- 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;
- Information on the post-exposure evaluation and follow up that the employer is required to provide for the employee following an exposure incident;
- An explanation of the signs and labels and/or color coding required by paragraph (g)(1); and
- An opportunity for interactive questions and answers with the person conducting the training session.

A unique requirement of this section is the opportunity for employees to ask questions. OSHA is typically not this prescriptive in their training requirements, but here the agency sets forth a methodological requirement that must be met. Training must be designed in such a way that employees can immediately ask questions regarding the information presented. This requirement surfaces the issue of computer-based training formats. This requirement does not necessarily eliminate the use of computer-based training, but does present the need to provide an avenue for trainees to ask questions of the trainer. OSHA has interpreted this requirement by stating, “The standard does not specify that the trainer be “physically” in the classroom while training is being conducted. The training requirements established under 29 CFR 1910.1030(g)(2)(vii)(N) require an
Why is this publication needed?

• The Center for Medicare & Medicaid Services requires that when hospitals utilize contracted services, the hospital is responsible for assuring services are in compliance with industry standards of practice and state licensure requirements.
• In a hospital site survey, emphasis often varies following an event with undesired outcomes. In 2009 the CDC surmised that textiles from a contracted laundry were likely responsible for an infection that resulted in the deaths of 5 pediatric patients.
• The vast fragmentation of regulations, practice standards and guidelines for the laundry industry make this a challenging task.

Who is this designed for?

• The material was initially designed for the hospital compliance officers and/or the Infection Preventionist responsible for assessing the contract laundry services. The goal was to compile a single resource and to incorporate laundry specific information to ease the assessment process.
• Laundry management desiring to assure compliance with all guidance relevant to their operation.

What does the publication include?

• All regulations, practice standards and recommendations applicable to the healthcare laundry industry.
• Specific hospital regulations from each state.
• Assessment guide for use by hospital compliance officers.
• A guide for non-laundry personnel to assist in assessing compliance.

Additional Resources

• OSHA Bloodborne Regulation
• OSHA Bloodborne Regulation Appendix A
  – Hepatitis B Vaccine Declination
• OSHA Bloodborne Pathogens Compliance Directive
• Hepatitis B Vaccination Declination
• U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis
• OSHA Letter of Interpretation for Titors
• OSHA Letter of Interpretation for Training

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