

Occupational exposure to bloodborne pathogens

29 CFR 1910.1030



Prepared by:

Minnesota OSHA Workplace Safety Consultation

Minnesota Department of Labor and Industry

(Revised October 2011)

Why is a standard needed?

- ✓ OSHA estimates eight million workers in the health care industry and related occupations are at risk of occupational exposure to bloodborne pathogens, including Human Immunodeficiency Virus (HIV, the virus that causes AIDS), hepatitis B virus (HBV) and hepatitis C virus (HCV).
- ✓ According to the Centers for Disease Control and Prevention (CDC), 100,000 Americans have died from AIDS and more than one million Americans are infected with HIV.
- ✓ About 65 cases of HIV infection due to occupational exposure occur each year.

Why is a standard needed?

- ✓ About 8,700 health care workers are infected with hepatitis B each year.
- ✓ About 200 health care workers die from hepatitis B each year.
- ✓ One milliliter of blood can contain more than one million infectious doses of the hepatitis B virus.
- ✓ Sixty to 70 percent of the individuals infected with the hepatitis C virus show no discernable symptoms.
- ✓ According to the CDC, hepatitis C virus infection is the most common chronic bloodborne infection in the United States.

OSHA's bloodborne pathogens standard (29 CFR 1910.1030) prescribes safeguards to protect workers against the health hazards from exposure to blood and other potentially infectious materials, and to reduce their risk from this exposure.

- The original standard became effective in Minnesota on June 6, 1992.

Who is covered by the standard?

- ✓ All employees who could be “reasonably anticipated” as the result of performing their assigned job duties to face contact with blood or other potentially infectious materials are covered by the standard.
- ✓ “Good samaritan” acts, such as assisting a coworker with a nosebleed, would not be considered occupational exposure.

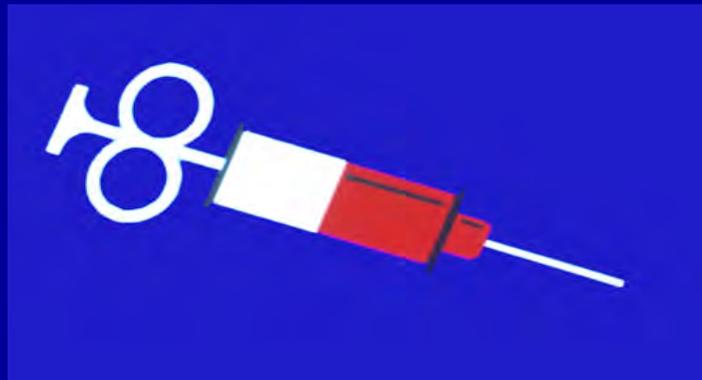
Some workers who are at risk

- ✓ Physicians
- ✓ Nurses
- ✓ Emergency room personnel
- ✓ Orderlies
- ✓ Housekeeping personnel
- ✓ Laundry workers
- ✓ Laboratory personnel
- ✓ Blood bank personnel
- ✓ Medical examiners
- ✓ Dentists and dental workers
- ✓ Morticians
- ✓ Law enforcement personnel
- ✓ Firefighters
- ✓ Paramedics
- ✓ Emergency medical technicians
- ✓ Medical waste handlers
- ✓ Home health care workers
- ✓ Employees assigned to first-aid response duties by their employer
- ✓ Other workers assigned duties putting them at risk of occupational exposure

How does exposure occur?

- ✓ **Needlesticks** (most common)
 - 800,000 needlestick injuries occur each year in the U.S.
- ✓ **Cuts** from other contaminated sharps (scalpels, broken glass, etc.)
- ✓ Contaminated **blood contact** with the eyes, mucous membranes of the mouth or nose, or broken (cut or abraded) skin

Because of the large number of occupational needlestick injuries to employees, many of which are not reported, the **Needlestick Safety and Prevention Act** was passed in 2000.



The **Needlestick Safety and Prevention Act** mandated OSHA to *clarify* and *revise* 29 CFR 1910.1030, Bloodborne Pathogens.

Needlestick Safety and Prevention Act timeline

- ✓ Public Law 106-430 was signed Nov. 6, 2000.
- ✓ The revised OSHA bloodborne pathogens standard incorporating these changes was published in the *Federal Register* Jan. 18, 2001*.
- ✓ The effective date for OSHA changes was April 18, 2001.
- ✓ Minnesota OSHA adopted the revised bloodborne pathogens standard on Oct. 1, 2001.

*These changes will be noted throughout this presentation.

Format of 29 CFR 1910.1030

- (a) Scope and application
- (b) Definitions*
- (c) Exposure control
 - (1) Exposure control plan*
 - (2) Exposure determination
- (d) Methods of compliance
 - (1) General (universal precautions)
 - (2) Engineering* and work practice controls
 - (3) Personal protective equipment
 - (4) Housekeeping
- (e) HIV and HBV research laboratories and production facilities
- (f) Hepatitis B vaccination and post-exposure evaluation and follow-up
 - (1) General
 - (2) Hepatitis B vaccination
 - (3) Post-exposure evaluation and follow-up
- (f)
 - (4) Information provided to the health care professional
 - (5) Health care professional's written opinion
- (g) Communication of hazards to employees
 - (1) Labels and signs
 - (2) Information and training
- (h) Recordkeeping
 - (1) Medical records
 - (2) Training records
 - (3) Availability
 - (4) Transfer of records
 - (5) Sharps injury log*
- (i) Dates

*Denotes changes to the standard published in the Jan. 18, 2001, edition of the *Federal Register*.

Scope and application: Paragraph (a)

- The standard applies to all **employees in general industry** with occupational exposures to blood and other potentially infectious materials.
- Construction, maritime and agriculture workplaces **are not** covered by this standard; however, the Minnesota Employee Right-to-Know standard's requirements regarding infectious agents would apply in those workplaces (see Minnesota Rules Chapter 5206).

Scope and application: Paragraph (a)

- Part-time workers, temporary workers and workers known as “per diem” employees per the above criteria would be covered. Students and volunteers (if they receive any type of compensation) per the above criteria would also be covered.
- Employees in general industry who are trained in first aid and designated by their employer as responsible for rendering medical assistance as part of their job duties would be covered.

Definitions: Paragraph (b)

- Assistant secretary
- Blood
- Bloodborne pathogens
- Clinical laboratory
- Contaminated
- Contaminated laundry
- Contaminated sharps
- Decontamination
- Director
- Engineering controls*
- Exposure incident
- Handwashing facilities
- Licensed health care professional
- HBV
- HIV
- Needleless systems*
- Occupational exposure
- Other potentially infectious materials
- Parenteral
- Personal protective equipment
- Production facility
- Regulated waste
- Research laboratory
- Sharps with engineered sharps injury protections (SESIPs)*
- Source individual
- Sterilize
- Universal precautions
- Work practice controls

*Denotes a change to the bloodborne pathogens standard as published in the Jan. 18, 2001, edition of the *Federal Register*.

Definitions: Paragraph (b)

- Paragraph (b) of the standard defines the terms used throughout the document.
- When reviewing and interpreting the standard for implementation, understanding the exact meaning of these terms is critical.
- In most cases, the definitions are self-explanatory and will not be covered in this program; however, the following are some definitions that require further clarification or are the definitions that pertain to the changes set forth in the Jan. 18, 2001, edition of the *Federal Register*.

Definitions: Paragraph (b)

- “Blood” means *human* blood, human blood components and products made from human blood.
- Human blood components include plasma, platelets and serosanguineous fluids (e.g. exudates from wounds).
- Also included are medications derived from blood, such as immune globulins, albumin and factors 8 and 9.

Definitions: Paragraph (b)

“Bloodborne pathogens” means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, the hepatitis B virus and the human immunodeficiency virus (HIV).

- While HBV and HIV are specifically identified in the standard, the term includes any pathogenic microorganism that is present in human blood and can infect and cause disease in people who are exposed to blood containing the pathogen.

Definitions: Paragraph (b)

- **"Contaminated"** means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
- **"Contaminated sharps"** means any contaminated object that can penetrate the skin, including needles, scalpels, broken glass, broken capillary tubes and exposed ends of dental wires.

Definitions: Paragraph (b)

“**Decontamination**” means the 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.

Definitions: Paragraph (b)

- “Exposure incident” means a specific eye, mouth, other mucous membrane, non-intact skin or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee’s duties.
- Non-intact skin includes skin with dermatitis, hang-nails, cuts, abrasions, chafing, acne, etc.
- Parenteral means piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts and abrasions.
- When an employee experiences an “exposure incident,” the employer must institute the required follow-up procedures in their plan.

Definitions: Paragraph (b)

- **“Occupational exposure”** means reasonably anticipated skin, eye, mucous membrane or parenteral contact with blood that may result from the performance of an employee’s duties.
- Reasonably anticipated exposure includes the potential for exposure, as well as actual exposure to blood or other potentially infectious materials (OPIM). It includes exposure to blood or OPIM (including regulated waste), as well as incidents of needlesticks.
- A determination that an employee has “occupational exposure” based upon job assignment triggers the requirement that the employer provide, and include the affected employee in, the employer’s exposure control plan.
- Employees assigned first-aid response duties by their employer would be considered to have “occupational exposure.”
- This definition does not cover “good samaritan” acts (i.e. voluntarily aiding someone in one’s place of employment) that result in exposure to blood or OPIM.

Definitions: Paragraph (b)

“Other potentially infectious materials” means:

- 1) human body fluids, including semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid visibly contaminated with blood and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;
- 2) any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
- 3) HIV-containing cell or tissue cultures, organ cultures and HIV- or HBV-containing culture medium or other solutions, as well as blood, organs or other tissues from experimental animals infected with HIV or HBV.
 - Urine and feces are not OPIM unless they are visibly contaminated with blood.

Definitions: Paragraph (b)

- “Regulated waste” means liquid or semi-liquid blood or OPIM; contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed; items that are caked with dried blood or OPIM and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or OPIM.
- While in a facility, regulated waste must be handled and labeled per the requirements in the OSHA bloodborne pathogens standard.
- In Minnesota, a non-OSHA regulation, the [Infectious Waste Control Act \(Minnesota Statutes 116.78 through 116.82\)](#), addresses the required labeling of infectious waste after it leaves a facility, and the required transport and disposal of infectious waste by licensed personnel. This regulation is under the jurisdiction of the Minnesota Pollution Control Agency. For more information about the [Infectious Waste Control Act](#), call (507) 344-5243.

Definitions: Paragraph (b)

- “Engineering controls^{*}” means controls (e.g., sharps disposal containers, self-sheathing needles and safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.
- Includes SESIPs and needleless systems

^{*}Denotes a change to the bloodborne pathogens standard as published in the Jan. 18, 2001, edition of the *Federal Register*.

Definitions: Paragraph (b)

- "Needleless systems*" means a device that does not use needles for:
 - 1) the collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established;
 - 2) the administration of medication or fluids; or
 - 3) any other procedure involving the potential for occupational exposure to bloodborne pathogens due to percutaneous injuries from contaminated sharps.
- Examples:
 - intravenous medication delivery systems that administer medications or fluids through a catheter port or connector site using a blunt cannula or other non-needle connection; and
 - jet injection systems that deliver subcutaneous or intramuscular injections of liquid medications through the skin without use of a needle.

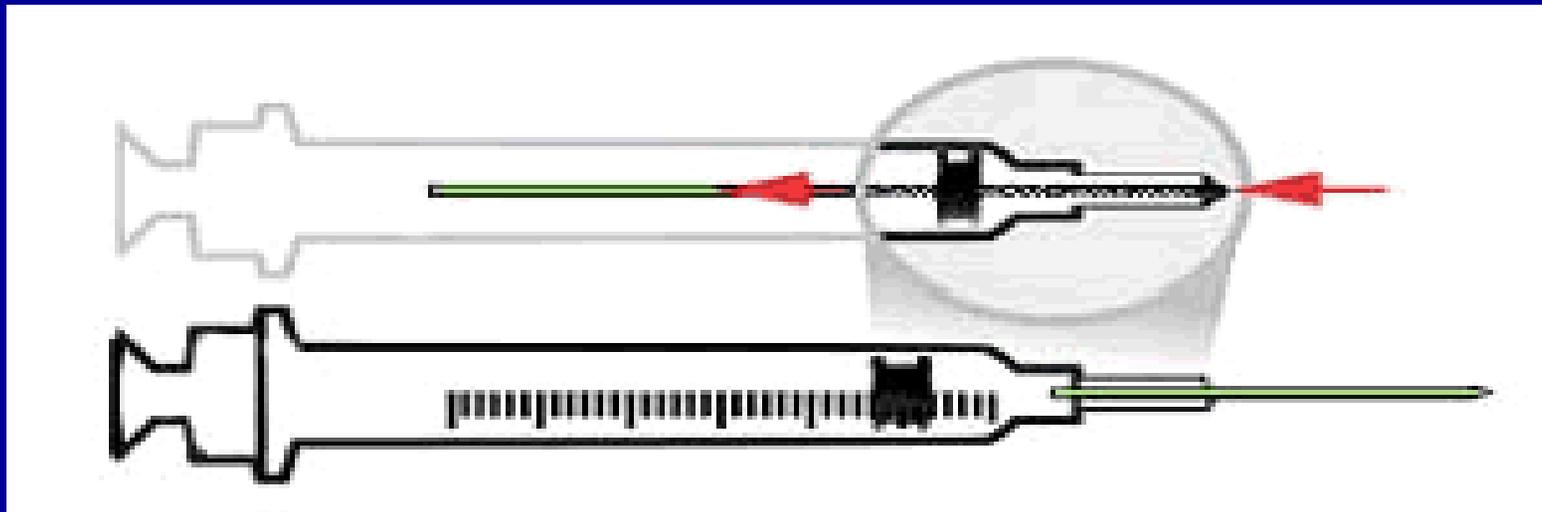
*Denotes a change to the bloodborne pathogens standard as published in the Jan. 18, 2001, edition of the *Federal Register*.

Definitions: Paragraph (b)

- “Sharps with engineered sharps injury protections*” means a non-needle sharp or 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.
- Commonly referred to as **SESIPs**.
- Examples: syringes with guards or sliding sheaths; retractable needle syringes; shielded or retracting catheters; delivery systems using catheter ports or connector sites using a needle that is housed in a protective covering; blunt suture needles; and plastic (not glass) capillary tubes.

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Engineering controls: hypodermic syringes that contain the hazard



Syringe with retractable needle

After the needle is used, an extra push on the plunger retracts the needle into the syringe, removing the hazard of needle exposure.

*Note: This safety device does not reset in actual use situations. The animation resets for viewer convenience only.

Engineering controls: hypodermic syringes that contain the hazard

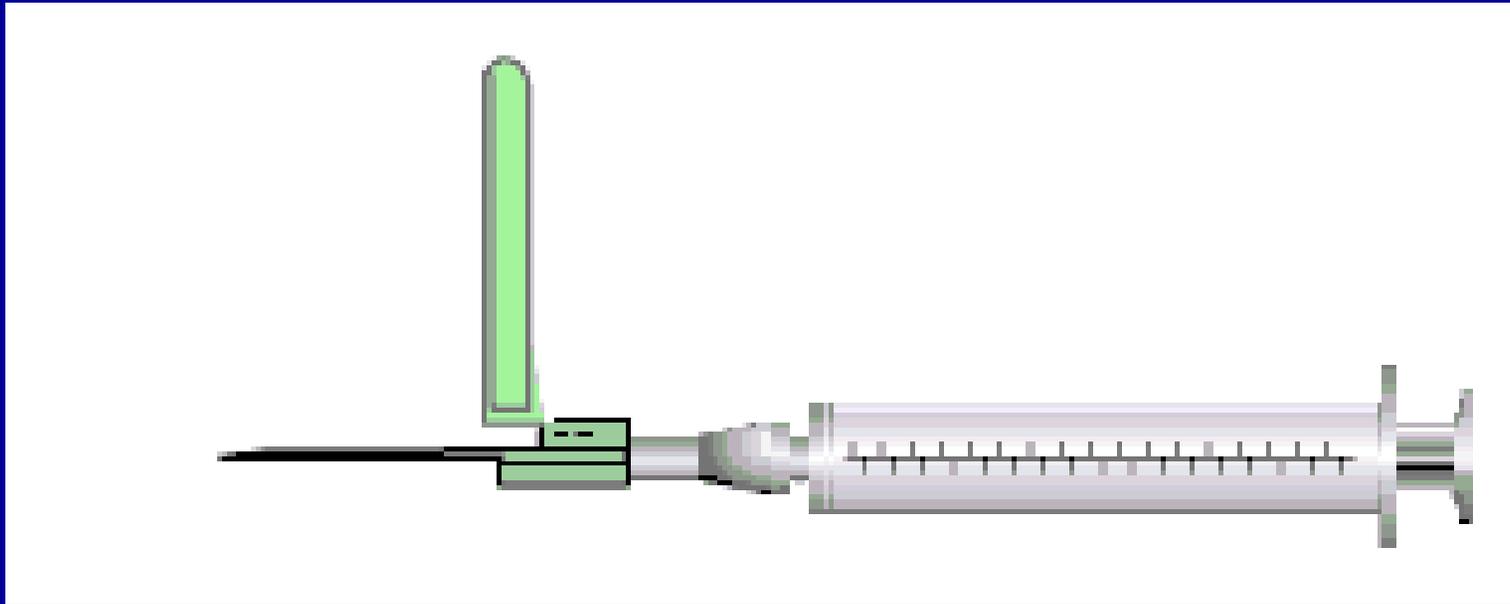


Self re-sheathing needles

Initially, the sleeve is located over the barrel of the syringe with the needle exposed for use. After the device is used, the user slides the sleeve forward over the needle, where it locks in place and provides a guard around the used needle. Some designs have a shield that must be twisted to engage the lock. This type of device is also available on phlebotomy blood tube holders.

*Note: This safety device does not reset in actual use situations. The animation resets for viewer convenience only.

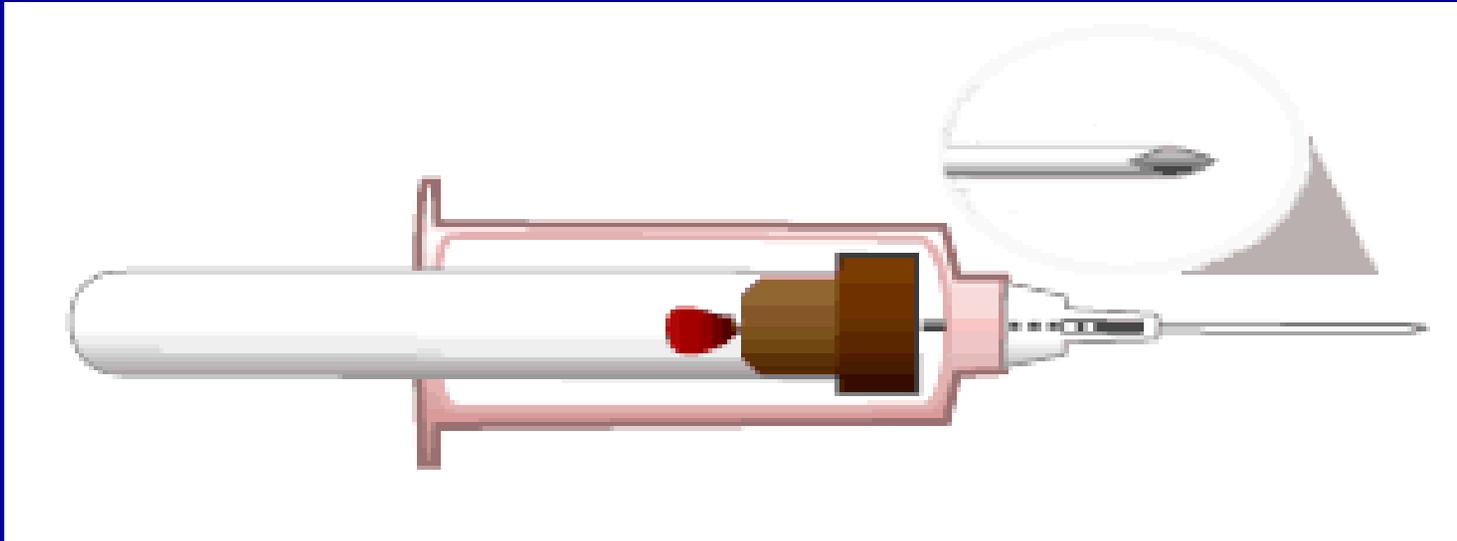
Engineering controls: hypodermic syringes that contain the hazard



"Add-on" safety feature

Hinged or sliding shields attached to syringes, phlebotomy needles, winged steel needles and blood gas needles.

Engineering controls: blood tube holders that contain the hazard

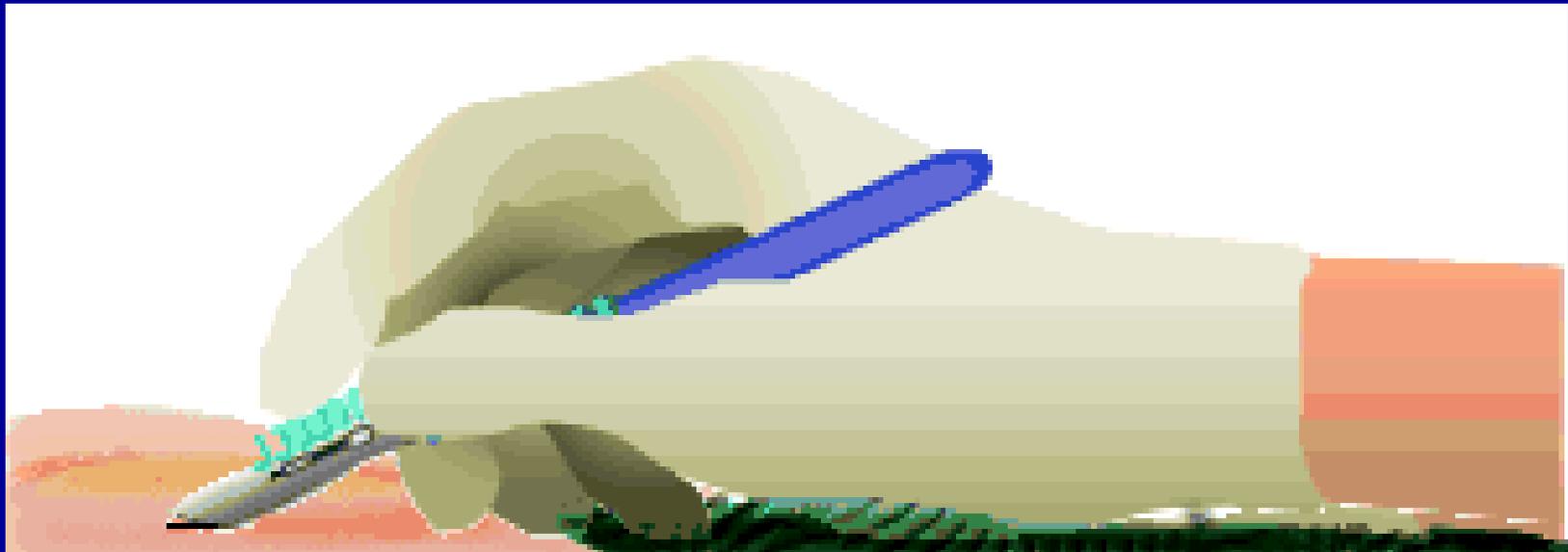


Blunting needle

After use, a blunt internal cannula is activated that moves the blunt tip needle forward through the hollow needle and past the sharp needle point. The blunt point tip of this needle can be activated before it is removed from the vein or artery. This type of device is available on hypodermic syringes and phlebotomy blood tube holders.

*Note: This safety device does not reset in actual use situations. The animation resets for viewer convenience only.

Engineering controls: scalpels that contain the hazard



Re-sheathing disposable scalpels

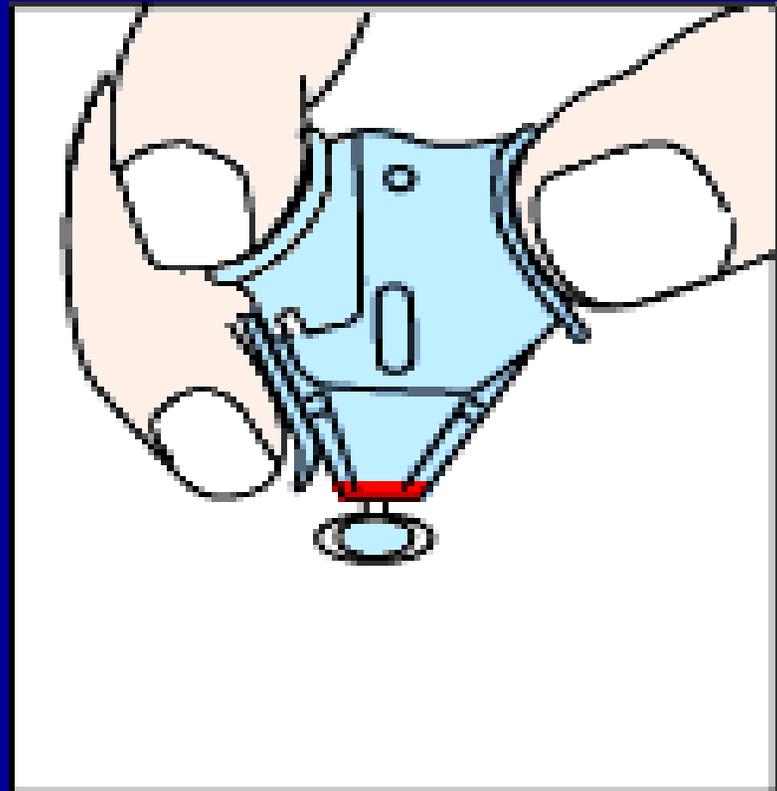
Single-use disposable scalpels have a shield that is advanced forward over the blade after use, containing and removing the hazard.

Engineering controls: lancets that contain the hazard

Retracting finger/heel lancet

This single-use lancet automatically retracts after use, containing and removing the hazard.

*Note: This safety device does not reset in actual use situations. The animation resets for viewer convenience only.



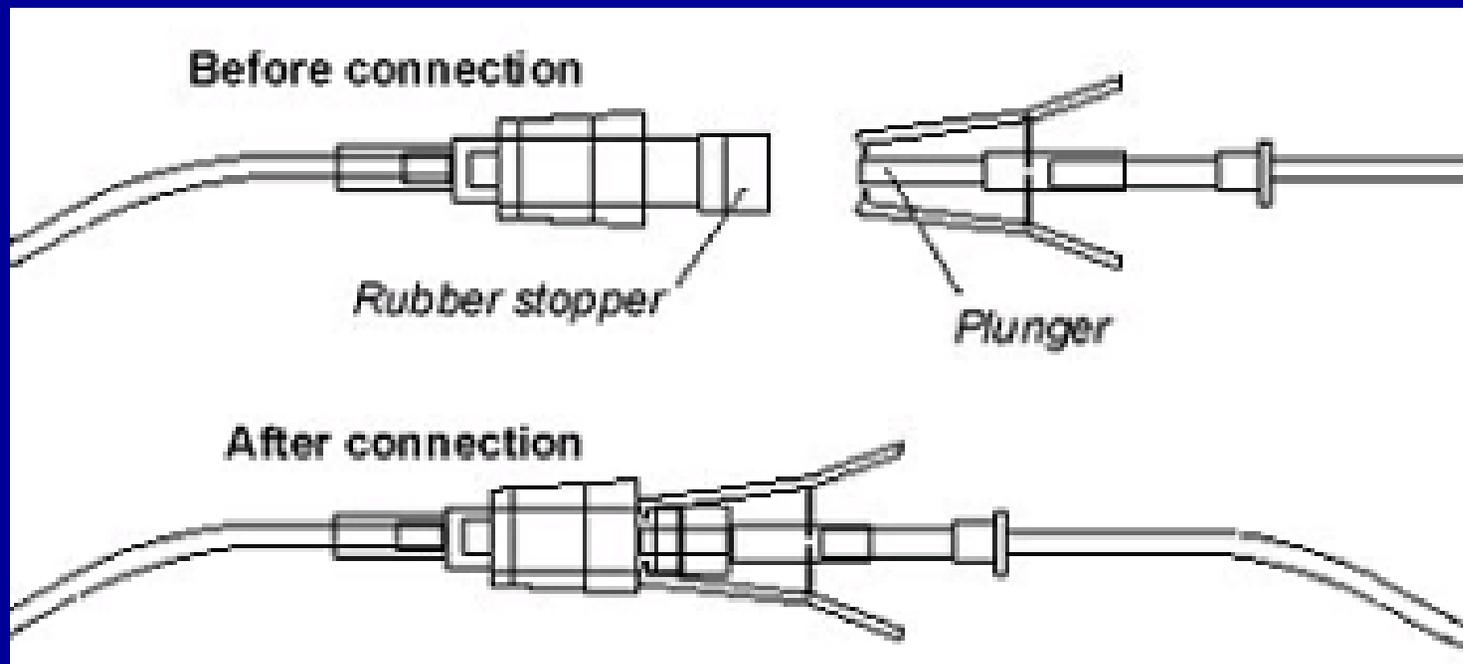
Engineering controls:
vascular access device that contains the hazard



Blunting winged steel needles

After placement, the third wing is rotated to a flat position that blunts the needle point before it is removed from the patient.

Engineering controls: I.V. devices that contain the hazard



Needleless I.V. connector

The FDA urges using needleless systems or recessed needle systems to reduce the risk of needlestick injuries. These connectors use devices other than needles to connect one I.V. to another. This example shows the plunger-type system.

Exposure control: Paragraph (c)

- Paragraph (c) of the standard discusses exposure control.
- Employees incur risk each time they are exposed to bloodborne pathogens. Any exposure incident may result in infection and subsequent illness. Because it is possible to become infected from a single exposure incident, exposure incidents must be prevented whenever possible.

Exposure control plan: Paragraph (c)(1)

- To eliminate or minimize employee exposure to blood and OPIM, the employer is required to develop a **written exposure control plan**.



The **exposure control plan** is a key provision of the standard. It requires the employer to identify employees who will receive the training, protective equipment, vaccination and other provisions of the standard.

Exposure control plan: Paragraph (c)(1)

The **exposure control plan** shall contain:

- the exposure determination as required in paragraph (c)(2);
- the schedule and method of implementing paragraphs (d) Methods of compliance, (e) HIV and HBV research laboratories and production facilities, (f) Hepatitis B vaccination and follow-up, (g) Communication of hazards to employees and (h) recordkeeping of the standard; and
- the procedures for evaluating circumstances surrounding exposure incidents as required by paragraph (f)(3)(i) of the standard.

Exposure control plan: Paragraph (c)(1)

- Each employer shall ensure a copy of the **exposure control plan** is accessible to employees.
- The **exposure control plan** shall be made available to Minnesota OSHA Enforcement inspectors upon request for examination and copying.

Exposure control plan: Paragraph (c)(1)(iv)*

The **exposure control plan** shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also:

- (A) reflect changes in technology to eliminate or reduce exposure to bloodborne pathogens; and
- (B) **document**, annually, consideration and implementation of appropriately commercially available and effective **safer medical devices** designed to eliminate or minimize occupational exposure.

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Exposure control plan: Paragraph (c)(1)(v)*

An employer that is required to establish an **exposure control plan** shall **solicit input from nonmanagerial employees** 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, and shall **document** the solicitation in the **exposure control plan**.

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Exposure control plan: Paragraph (c)(1)(v)

- Methods for **soliciting employee input** in engineering and work practice control evaluations may include employee involvement in:
 - joint labor-management safety committees (which are required in Minnesota workplaces with 25 or more employees);
 - problem-solving groups;
 - safety meetings and audits;
 - employee surveys;
 - worksite inspections;
 - exposure incident investigations;
 - written employee comments; and
 - pilot testing programs.

Exposure control plan: Paragraph (c)(1)(v)

- An employer with multiple worksites may opt for the following approach, instead of individual site-separate engineering and work practice control evaluations.

(A) Conduct initial product evaluations at the corporate level by a team that includes nonmanagerial employees involved in the care practices that will be affected by the devices being evaluated.

(B) The devices recommended by the corporate level evaluation team can then be sent to other sites for implementation.

(C) The employer should establish a procedure for employees at the smaller worksites to report problems with a new device or to suggest a new device for evaluation.

Minnesota Statutes 182.6555

- “Reducing occupational exposures to bloodborne pathogens through sharps injuries”
- The law was signed by the governor April 10, 2000 and became effective June 10, 2000. (It preceded the federal bloodborne pathogens standard changes.)
- It requires that employees be involved in the selection of effective engineering controls to improve employee acceptance of the newer devices and to improve the quality of the selection process.
- Where a safety committee is established, it requires the safety committee to provide advisory recommendations for the use of effective engineering controls. At least one-half of the members of the safety committee (or subcommittee) must be employee representatives of the job classifications that would use any device in the category being evaluated.
- The law requires annual review and documentation of information in a facility’s bloodborne pathogens exposure control plan.

Exposure determination: Paragraph (c)(2)

- A key element of the **exposure control plan** is the **exposure determination**.
- In the **exposure determination**, the employer is required to identify and document job classifications where occupational exposure to blood and OPIM can occur. This determination shall be made without regard to using personal protective equipment.

Exposure determination: Paragraph (c)(2)

- Depending on the results of the employer's occupational exposure assessment, the employer's written **exposure determination** may contain one or two lists.
 - **List 1** will identify job classifications in which *all* employees in those job classification have occupational exposure.
 - **List 2**, if applicable, will identify job classifications in which *some* employees in those job classifications have occupational exposure. For **List 2**, the tasks and procedures or groups of closely related tasks and procedures in which occupational exposure occurs must be indicated.

Methods of compliance: Paragraph (d)

Paragraph (d) of the standard sets forth the methods by which employers shall protect their employees from the hazards of bloodborne pathogens and comply with this standard through the use of universal precautions, engineering and work practices controls, personal protective equipment, proper housekeeping and the handling of regulated waste.

Univeral precautions: Paragraph (d)(1)

□ **Universal precautions** shall be observed to prevent contact with blood or OPIM. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

- “**Universal precautions**” is an approach to infection control. According to the concept, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV and other bloodborne pathogens.
- Assume the above status regardless of the perceived “low risk” status of a patient or patient population.
- As alternative concepts of infection control, body substance isolation (BSI) or standard precautions are also acceptable because these methods expand coverage to include *all* body fluids and substances, and to treat them as if known to be infectious.

Engineering and work practice controls: Paragraph (d)(2)

Engineering and work practice controls shall be used to eliminate or minimize employee exposure.

- These are the **primary methods** used to control the transmission of bloodborne pathogens.
- Engineering and work practice controls shall be used in preference to other methods as a good industrial hygiene practice and in adherence to OSHA's traditional hierarchy of controls.
- When occupational exposure remains after engineering and work practice controls are put in place, personal protective equipment must be used.

Engineering controls

These controls reduce employee exposure by either removing the hazard or isolating the worker.

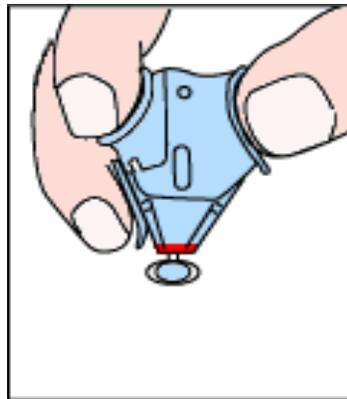
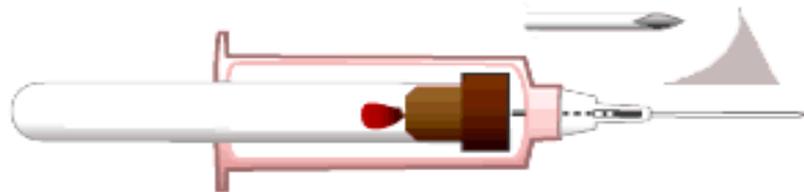
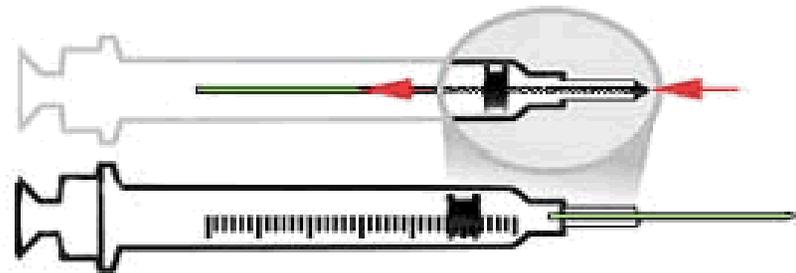
Engineering control examples

- Sharps disposal containers must be provided and used.
- Sharps disposal containers must be leakproof, puncture resistant, able to be closed, and labeled or color-coded.



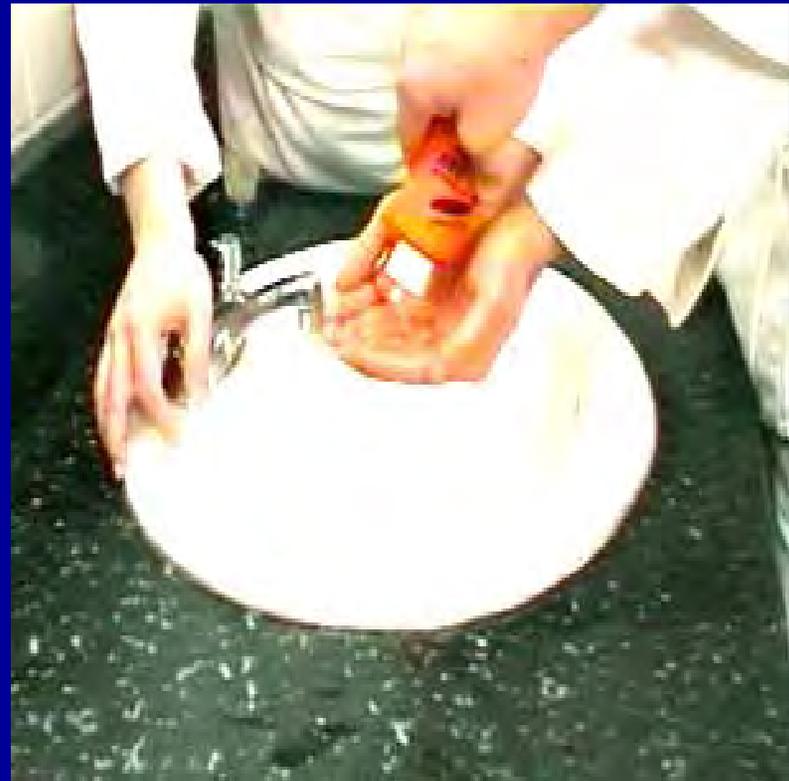
Engineering control examples

Safe medical devices, including SESIPs and needleless systems, should be evaluated (with employee-user input), selected and their use implemented.



Engineering control examples

- Employers shall provide handwashing facilities that are readily accessible to employees.
- When provision of handwashing facilities is not feasible, the employer shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes.



Engineering control examples

- Mouthpieces and resuscitation devices must be supplied where employees are expected to perform CPR as an assigned duty.



Work practice controls

These controls reduce the likelihood of exposure by altering how a task is performed.

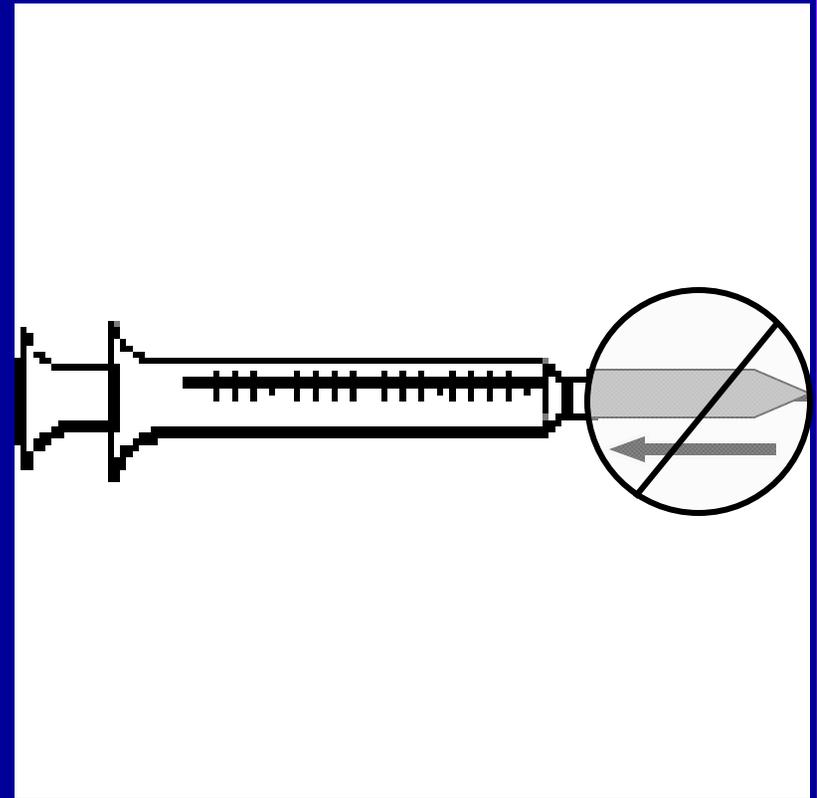
Work practice controls

- Wash hands after removing gloves and as soon as possible after exposure occurs.
- After use, place disposable contaminated sharps in an immediately accessible sharps container (SESIPs, with the safety device activated, must still be placed in a sharps container).



Work practice controls

- **Prohibit** the bending, recapping or removal of contaminated needles, unless the action is required by a specific medical procedure, and then only through the use of a mechanical device or one-handed technique. Document when and where it is allowed, in the exposure control plan.
- Shearing or breaking contaminated needles is **prohibited**.



Work practice controls

- Immediately or as soon as possible after use, contaminated reusable sharps shall be placed in puncture-resistant, leakproof, and labeled or color-coded containers until properly reprocessed. (To avoid spillage of contents, it is suggested they be covered and secured prior to moving.)



Work practice controls

- Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses are **prohibited** in work areas where there is a reasonable likelihood of occupational exposure.



Work practice controls

Food and drink **shall not** be kept in refrigerators, in freezers, on shelves, in cabinets or on countertops or benchtops where blood or OPIM are present.



Work practice controls

- All procedures involving blood or OPIM shall be performed in such a manner as to **minimize** splashing, spraying, spattering and generation of droplets of these substances.



Work practice controls

- Mouth pipetting/suctioning of blood or OPIM is **prohibited**. Use mechanical devices.



Work practice controls

- Specimens of blood or OPIM shall be placed in a container that prevents leakage during collection handling, processing, storage, transport or shipping (a secondary container is needed if outside of primary container is contaminated or if it could be punctured by the specimen).
- Equipment to be serviced or shipped must be decontaminated or marked with a readily observable label.



Personal protective equipment: Paragraph (d)(3)

- ✓ Personal protective equipment (PPE) **must be provided to and used by** workers if occupational exposure remains after instituting engineering and work practice controls, or if those controls are not feasible.
- ✓ Personal protective equipment is specialized clothing or equipment that is worn by an employee for protection against infectious agents.
- ✓ Where required, PPE must be provided at **no cost** to the employee. Appropriate sizes must be accessible.

Personal protective equipment: Paragraph (d)(3)

- ✓ PPE **must be removed** prior to leaving a work area or upon contamination.
- ✓ PPE must be properly cleaned, laundered, repaired and disposed of at no cost to employees. **Employees are not allowed to take PPE home for laundering.**
- ✓ Any clothing worn to and from work by an employee, including employer-provided uniforms, are considered “street clothes” and **must be protected from contamination.**

Personal protective equipment: gloves

Gloves shall be worn when it can be reasonably anticipated the employee may:



- have hand contact with blood;
- have hand contact with OPIM;
- have hand contact with mucous membranes;
- have hand contact with non-intact skin;
- perform vascular access procedures; and
- handle or touch contaminated items or surfaces.

Personal protective equipment: gloves

- ✓ Hypoallergenic gloves, glove liners, powderless gloves or other similar alternatives **shall be readily accessible** to employees who are allergic to the gloves normally provided.
- ✓ Disposable (single use) gloves **shall not be washed or decontaminated** for re-use.
- ✓ Utility gloves may be decontaminated for re-use if not compromised.
- ✓ **Gloves shall be replaced** as soon as feasible whenever their ability to function as a barrier becomes compromised.



Personal protective equipment: masks, eye protection and face shields

- ✓ Masks, in combination with eye protection devices such as goggles or glasses with solid side shields, or chin-length face shields, **shall be worn** whenever splashes, spray, spatter or droplets of blood or OPIM may be generated.



Personal protective equipment: gowns, aprons and other protective body clothing

- ✓ Appropriate protective clothing, such as gowns, aprons, lab coats, clinic jackets or similar outer garments, **shall be worn** in occupational exposure situations. The type and characteristics will depend on the task and degree of exposure anticipated.
- ✓ Surgical caps or hoods and/or shoe covers or boots **shall be worn** in instances when gross contamination can reasonably be anticipated.



Personal protective equipment: gowns, aprons and other protective body clothing

- ✓ The requirements for the use of personal protective body clothing and the degree to which such PPE must resist penetration are **performance based**. The employer must evaluate the task and type of exposure expected and, based on the determination, select the appropriate PPE.
- ✓ Small splashes, spatters and sprays of blood or OPIM will usually be stopped by a cotton garment. Larger occurrences, creating a potential for soak-through, would require a garment of impervious construction.
- ✓ **"Street clothes" must be protected** from contamination.
- ✓ **Long-sleeved garments shall be used** for procedures in which blood or OPIM exposure to the forearms is reasonably anticipated.

Housekeeping: Paragraph (d)(4)

- The employer must determine and implement an appropriate **written schedule for cleaning and method of decontamination** based upon the:
 - location within the facility;
 - type of surface to be cleaned;
 - type of soil present; and
 - tasks or procedures being performed.
- All equipment, environmental surfaces and working surfaces **shall** be cleaned and decontaminated after contact with blood or OPIM.

Housekeeping: decontamination

- Work surfaces must be decontaminated with an appropriate disinfectant:

- after completion of procedures;

- when surfaces are contaminated; and

- at the end of the work shift if they may have become contaminated since the last cleaning.



Housekeeping: appropriate disinfectants

- Dilute bleach solution made up within the last 24 hours
 - household bleach (5.25% sodium hypochlorite) diluted between 1:10 and 1:100 with water
- EPA-registered tuberculocides (List B)
- EPA-registered sterilants (List A)
- EPA-registered products effective against HIV/HBV (List D)
 - These are primarily the quaternary ammonia products the EPA has approved as effective against HIV and HBV
- Sterilants/high-level disinfectants cleared by the FDA

Lists of EPA registered products are available at www.epa.gov/oppad001.
Sterilants/high-level disinfectants cleared by the FDA can be found at www.fda.gov/cdrh/ode/germlab.html.

Housekeeping: other issues

- Protective coverings used to cover equipment and environmental surfaces **shall** be removed and replaced as soon as feasible when they become contaminated or at the end of the workshift.
- Bins, pails, cans and similar receptacles intended for reuse that have a reasonable likelihood for becoming contaminated with blood or OPIM **shall** be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

Housekeeping: other issues

- **Contaminated broken glassware shall:**
 - not be picked up directly with the hands;
 - be cleaned up using mechanical means, such as a brush and dust pan, tongs or forceps (tools must be decontaminated); and
 - shall be placed into a sharps container for proper disposal.
- **Contaminated reusable sharps** shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed. For example, do not dump contaminated reusable sharps in a sink of soapy water and then retrieve the devices from the sink by hand. Use a strainer basket to hold the immersed instruments and forceps for their retrieval from the basket.

Housekeeping: regulated waste

- **Regulated waste** must be placed in closeable, leakproof containers built to contain all contents during handling, storing, transporting or shipping, and be appropriately labeled or color-coded.
- Also, follow **Minnesota's Infectious Waste Control Act** requirements.



Housekeeping: regulated waste, sharps containers

Sharps containers:

- must be located as close as is feasible to where sharps are used;
- must be maintained upright throughout use;
- must not be overfilled;
- must be closed prior to disposal; and
- should be disposed of per Minnesota Infectious Waste Control Act requirements.



Housekeeping: laundry

Contaminated laundry shall be:

- handled as little as possible;
- handled with the proper PPE;
- bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use;
- placed and transported in bags that prevent any soak-through or leakage; and
- placed and transported in labeled or color-coded containers (except where all laundry is handled with universal precautions and recognizable as such).



HIV and HBV research laboratories and production facilities: Paragraph (e)

- ✓ This paragraph of the standard lists the special requirements for HIV and HBV research laboratories and production facilities.
- ✓ In the above settings, the requirements apply in addition to the other provisions of the standard.
- ✓ For specific requirements, [see 1910.1030\(e\)](#).

Hepatitis B vaccination and post-exposure evaluation and follow-up: Paragraph (f)

This paragraph of the standard outlines the requirements for the employer to:

- ✓ make available a hepatitis B vaccination to employees with occupational exposure; and
- ✓ provide post-exposure evaluation and follow-up for an employee experiencing an exposure incident.

Hepatitis B vaccination and post-exposure evaluation and follow-up: Paragraph (f)

The employer shall ensure all **medical evaluations** and procedures relating to the above are:

- ✓ made available at no cost to the employee;
- ✓ made available to employees at a reasonable time and place;
- ✓ performed by or under the supervision of a licensed physician or health care professional;
- ✓ provided according to recommendations of the U.S. Public Health Service; and
- ✓ using accredited laboratories for all laboratory testing.

Hepatitis B vaccination: Paragraph (f)(1)

The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure (as determined in the exposure determination) after the employee has received the required training and within 10 days of initial assignment unless:

- the employee has previously completed the hepatitis B vaccination series; or
- immunity is confirmed through antibody testing; or
- the vaccine is contraindicated for medical reasons.



Hepatitis B vaccination: requirements

- ✓ It must be provided, even if the employee initially declines but later decides to accept the vaccination.
- ✓ Employees who decline the vaccination must sign a declination form, found in Appendix A of the standard. (Note: Wording of the declination form *cannot* be altered.)
- ✓ Employees are not required to participate in an antibody prescreening program to receive the vaccination series.

Hepatitis B vaccination: titer and additional vaccination series

- ✓ OSHA requires employers to follow the Centers for Disease Control and Prevention (CDC) guidelines current at the time of evaluation. The CDC recently changed its hepatitis B vaccination guidelines (see MMWR Vol. 50, No. RR-11, June 29, 2001, at www.cdc.gov).



Hepatitis B vaccination: titer and additional vaccination series

The CDC change states that employees who have ongoing contact with patients or blood and are at ongoing risk for percutaneous injuries with sharp instruments or needlesticks be tested for antibody to hepatitis B surface antigen one to two months after completion of the three-dose vaccination series. Employees who do not respond to the primary vaccination series must be revaccinated with a second three-dose vaccine series and retested. Nonresponders must be medically evaluated.

Hepatitis B vaccination: titer and additional vaccination series

- ✓ The CDC guideline applies to health care workers in hospitals and health departments, including physicians, nurses, phlebotomists, medical technicians, emergency medical personnel, dental professionals and students, medical and nursing students, laboratory technicians, hospital volunteers and administrative staff members. In addition, the above apply to health care workers in private physicians' offices, nursing homes, correctional facilities, schools and laboratories, and to first responders (i.e., EMTs, paramedics).
- ✓ In Minnesota, the above was required for any new employee, hired after Feb. 29, 2000, who was offered and accepted the primary hepatitis B vaccination series. Employees hired prior to that date *do not* have to be tested and offered revaccination.

Hepatitis B vaccination program

Employer

Employee

Health care professional

Provides copy of standard to HCP → Receives copy of standard

Provides training to employee → Receives training from employer

Offers vaccination (within 10 working days) → Accepts vaccination
or
declines vaccination (signs declination form) → Receives referred employee

Establishes medical record
Evaluates employee for contraindications to vaccination or prior immunity
Vaccinates employee or discusses contraindications with employee

Receives HCP's written opinion and places in employee's medical record

Records HCP's written opinion provides copy to employer

Provides copy of HCP's written opinion → Receives copy of HCP's written opinion

Hepatitis B vaccination: collateral duty first-aid providers

Under (f)(2) of the standard, hepatitis B vaccination must be offered to all employees who have occupational exposure to blood or OPIM. However, as a matter of policy, citations **will not** be issued when designated first-aid providers who have occupational exposure are not offered pre-exposure hepatitis B vaccine if the following conditions exist.

Collateral duty first-aid providers

(1) The primary job assignment of such designated first-aid providers is not the rendering of first aid.

(a) Any first-aid rendered by such persons is rendered **only as a collateral duty**, responding solely to injuries resulting from workplace incidents, generally at the location where the incident occurred.

(b) The provision **does not** apply to designated first-aid providers who render assistance on a regular basis (i.e., first-aid station, clinic or dispensary where employees routinely go for assistance).

Collateral duty first-aid providers

(2) The employer's **exposure control plan** specifically addresses the provision of hepatitis B vaccine to all unvaccinated first-aid providers who have rendered assistance in any situation involving the presence of blood or OPIM (regardless of whether an actual exposure incident occurred) and the provision of appropriate post-exposure evaluation, prophylaxis and follow-up for those employees who experience an exposure incident, including:

(a) provision for a **reporting** procedure that ensures **all first-aid incidents involving blood or OPIM** are reported to employer (the report must include the names of first-aid providers and a description of the incident, including time and place);

(b) provision for the bloodborne pathogens **training program** for designated first-aid providers to include the **specifics of the reporting procedure**; and

(c) provision for the full **hepatitis B vaccination series to be made available** as soon as possible, but in no event later than 24 hours, to all unvaccinated first-aid providers who have rendered assistance in **any situation involving blood or OPIM**.

Post-exposure evaluation and follow-up: Paragraph (f)(3 – 5)

A confidential medical evaluation and follow-up shall **immediately** be made available to an employee following an exposure incident. This must be offered at **no cost** to the employee.



Post-exposure evaluation and follow-up

Following an exposure incident

Employee

Employer

Health care professional (HCP)

Reports incident to employer

Directs employee to HCP and
Sends to HCP:

- copy of standard
- worker job description
- incident report
- source individuals HBV/HCV/HIV status (if known)
- employee's hepatitis B vaccine status, other relevant medical info.

– Evaluates exposure incident

– Arranges for testing of employee, source individual

– Notifies employee of results of all testing

– Provides counseling

– Provides post-exposure prophylaxis, when necessary

– Evaluates reported illnesses (All of the above information must be kept confidential.)

Documents events on OSHA 300 and 301 (if applicable)

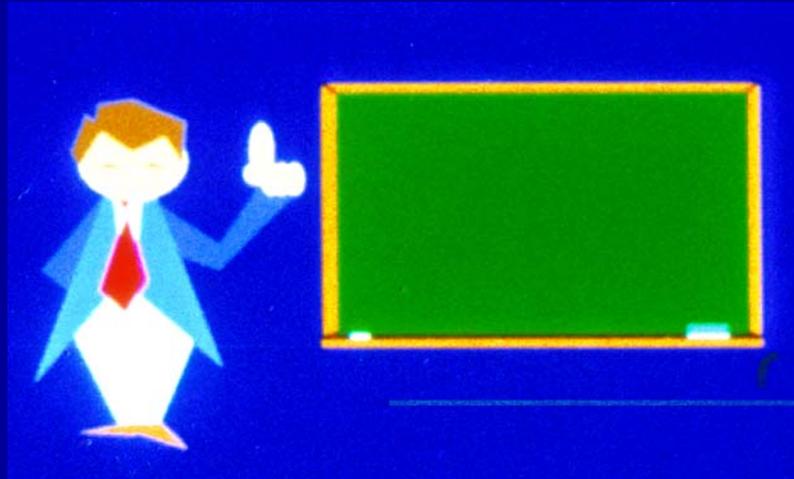
Send *only* the HCP's written opinion to employer:

- employee was informed of testing results, need for any follow-up
- whether hepatitis B vaccine is indicated and received

Receives copy of HCP's written opinion from employer

Receives HCP's written opinion and provides copy to employee, medical file

Communication of hazards to employees: Paragraph (g)



Paragraph (g) of the standard describes requirements and procedures for communicating the hazards to employees through **labels, signs and training**.

Labels

The standard requires **warning labels** be attached to:

- containers of regulated waste;
- refrigerators and freezers containing blood or OPIM;
- other containers used to store, transport or ship blood or OPIM;
- contaminated equipment prior to shipping.

Red bags or containers may be substituted for labels.



Biohazard

Signs

The employer shall post the biohazard label at the entrance to HIV and HBV research laboratories and production facilities. As with signs, the label shall be fluorescent orange or orange-red with letters or symbols in contrasting colors.



Biohazard

Information and training: Paragraph (g)(2)

The employer shall ensure all employees with occupational exposure participate in a **training program** that must be provided at no cost to the employee and during working hours.



The **training shall be provided:**

- at the time of initial assignment to tasks where occupational exposure can occur; and
- at least annually thereafter.

Additional training shall be provided when tasks are modified or new procedures affect the employee's occupational exposure.

Training program elements:

- (A) an accessible copy of the standard and explanation of its contents;
- (B) a general explanation of the epidemiology and symptoms of bloodborne diseases;
- (C) an explanation of the modes of transmission of bloodborne pathogens;
- (D) an explanation of the employer's written exposure control plan and how employees can obtain a copy;
- (E) an explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood or OPIM;
- (F) an explanation of the use and limitations of methods that will prevent or reduce exposure, including appropriate engineering controls, work practices and PPE;
- (G) information about the types, proper use, location, removal, handling, decontamination and disposal of PPE;

Training program elements:

- (H) an explanation of the basis for selection of PPE;
- (I) information about the hepatitis B vaccine, including its efficacy, safety, methods of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
- (J) information about the appropriate actions to take and people to contact during an emergency involving blood or OPIM;
- (K) 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;
- (L) information about the post-exposure evaluation and follow-up the employer is required to provide for the employee experiencing an exposure incident;

Training program elements:

- (M) an explanation of the signs and labels and/or color-coding required and used in the facility; and
- (N) an opportunity for interactive questions and answers with the person conducting the training session.

The person conducting the training shall be knowledgeable about the subject matter covered by the elements contained in the training program **as it relates to the workplace**, that the training will address.

- Training solely by means of a film or video, without the opportunity for a discussion period, **would not** be acceptable.
- Generic films, videos or computer programs, even an interactive one, are not considered appropriate unless the employer supplements such training with the **site-specific information** required.
- Trainees must have **direct access** to a qualified trainer during their training.

Recordkeeping, medical records: Paragraph (h)(1)

The employer shall establish and maintain an accurate record for each employee with occupational exposure. It shall include:

- (A) the name and Social Security number of the employee;
- (B) the employee's hepatitis B vaccination status;
- (C) the results of examinations, medical testing, and post-exposure evaluation and follow-up procedures;
- (D) a health care professional's written opinion; and
- (E) a copy of information provided to the health care provider.



Employee medical records must be kept confidential and not disclosed or reported without the employee's written consent (unless required by law).

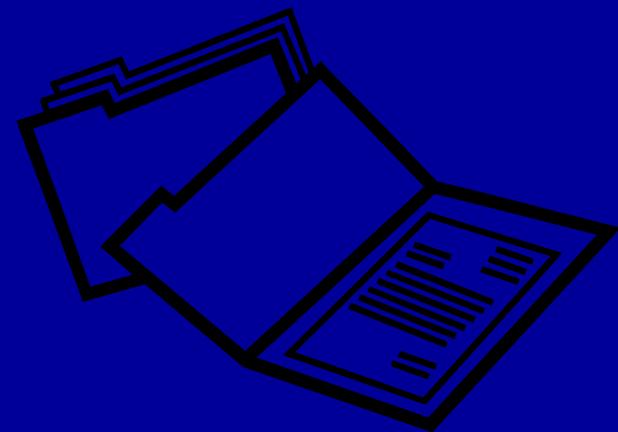
Medical records must be maintained for the duration of employment, plus 30 years.

Recordkeeping, training records: Paragraph (h)(2)

Training records shall include the following:

- (A) the dates of the training session;
- (B) the contents or a summary of the training session;
- (C) the names and qualifications of those conducting the training; and
- (D) the names and job titles of all those attending the training sessions.

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

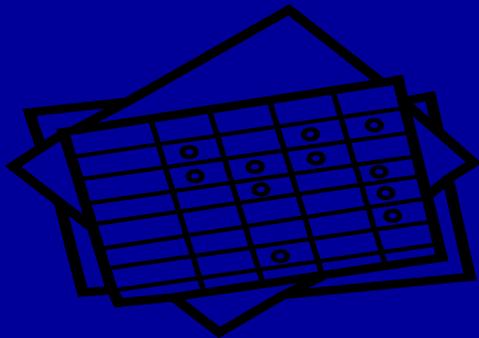
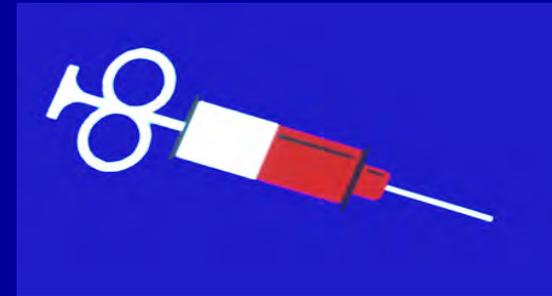


Bloodborne pathogens recordkeeping availability (for examination and copying)

	Available to employee?	Available to employee representative?	Available to OSHA?
Medical records	Yes (to own record only)	No (unless written consent given by employee)	Yes (to all employee medical records)
Training records	Yes (to own records)	Yes (to all employee training records)	Yes (to all employee training records)

Recordkeeping, sharps injury log: Paragraph (h)(5)*

For recording of percutaneous injuries from contaminated sharps
(confidentiality must be maintained)



The log shall contain, at a minimum:

- the type and brand of device involved;
- the department or work area where exposure the incident occurred; and
- an explanation of how the incident occurred.

*Denotes a change to the bloodborne pathogens standard as published in the Jan. 18, 2001, edition of the *Federal Register*.

Recordkeeping, sharps injury log

- In **Minnesota**, the requirement for maintaining a **sharps injury log** applies to general industry employers that have employees with occupational exposure and that, under state law, must maintain the **OSHA Form 300 – Log of Work-Related Injuries and Illnesses** (i.e., in the past calendar-year, the employer had more than 10 employees).
- Employers may elect to use the OSHA Form 300 to meet the sharps injury log requirements, provided confidentiality is maintained and these two conditions are met:
 - 1) the employer must enter the type and brand of the device on the Form 300; and
 - 2) the employer must maintain the Form 300 in a way that segregates sharps injuries from other types of work-related injuries and illnesses, or allows sharps injuries to be easily separated.

Effective dates

All requirements set forth in the bloodborne pathogens standard (29 CFR 1910.1030), including those changes found in the Jan. 18, 2001, edition of the *Federal Register* and in the CDC guidelines, are now in effect.

Summary

- ❖ OSHA's bloodborne pathogens standard prescribes safeguards to protect workers against the health hazards from exposure to blood and OPIM, and to reduce their risk from this exposure.
- ❖ Implementation of this standard not only will prevent hepatitis B cases, but will also significantly reduce the risk of workers contracting AIDS, hepatitis C or other bloodborne diseases.

Information sources



Federal OSHA website:

www.osha.gov

This website provides the bloodborne pathogens standard, interpretations, e-tools and a variety of other helpful documents pertaining to worker safety and health.

Information sources



Minnesota Department of Labor and Industry website:

www.dli.mn.gov

- The site has links to Minnesota Statutes and Minnesota Rules.
- Also, from this page, under the OSHA tab, click on "OSHA Compliance home," then "Resources," then "Publications, handouts." Go to the topic "Bloodborne pathogens" (near the bottom) and open "Enforcement procedures for the occupational exposure to bloodborne pathogens standard, 29 CFR 1910.1030." Note: Appendix G of this document contains a bloodborne pathogens model exposure control plan.

Information sources

The following book is an excellent reference addressing infectious agents:

Control of communicable diseases manual
(19th edition)

Edited by Dr. David Heymann
American Public Health Association

ISBN: 978-08755-31908

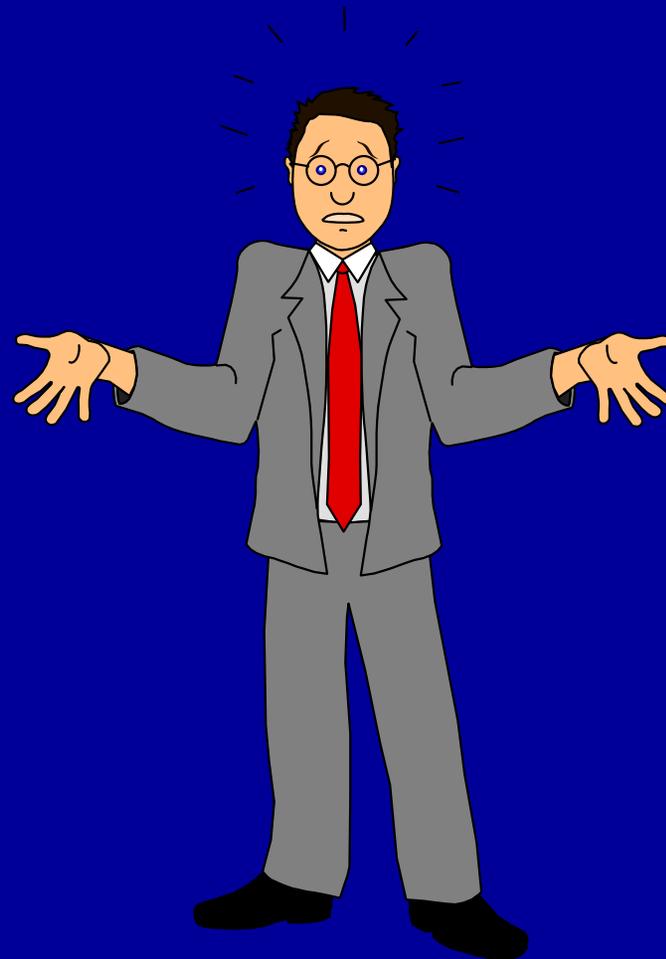
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Questions?



Thank you.