Occupational exposure to bloodborne pathogens in dentistry
29 CFR 1910.1030

Prepared by:
Minnesota OSHA Workplace Safety Consultation
Minnesota Department of Labor and Industry
(Revised September 2013)
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). Hepatitis is an inflammation of the liver that can lead to liver damage and death.

✓ According to the Centers for Disease Control and Prevention (CDC), 619,400 people in the U.S. have died from AIDS and more than 1.2 million Americans are infected with HIV. One in five of those people are unaware of their infection.

✓ Between 1981 and December 2006, there were 57 documented cases and 140 possible cases of occupational HIV transmission to health care workers in the U.S. Of the 57, 48 were associated with percutaneous injury.
Why is a standard needed?

✓ According to the CDC, an estimated 12,000 health care workers were infected with hepatitis B each year. Due to widespread immunization of health care workers, that infection rate dropped to an estimated 400 in 1984.

✓ From 1988 to 1998, an estimated 100 to 200 health care workers died from hepatitis B each year.

✓ Fifty percent of people with HBV infection are unaware they have the disease.

✓ HBV is more easily transmissible than HIV. The virus can survive at least one week in dried blood on an environmental surface, contaminated needle or instrument. One milliliter of blood can contain more than one million infectious doses of the hepatitis B virus.
Why is a standard needed?

✓ Unlike the hepatitis B virus, there is no vaccination against the hepatitis C virus.

✓ Sixty to 70 percent of individuals infected with the hepatitis C virus show no discernible symptoms.

✓ According to the CDC, the hepatitis C virus infection is the most common chronic bloodborne infection in the U.S., affecting approximately four million people.
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.

- “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 that put them at risk of occupational exposure
How does exposure occur?

✓ **Needlesticks** are most common
  - NIOSH estimate: about 365,000 sharps-related 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, the bloodborne pathogens standard.
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 on Jan. 18, 2001.*

✓ The effective date for OSHA changes was April 18, 2001.


*These changes will be noted throughout this program.*
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

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, 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, Federal Register.
“Blood” means human blood, human blood components and products made from human blood.

"Human blood components" includes plasma, platelets and serosanguineous fluids (for example, exudates from wounds).

Also included are medications derived from blood, such as immune globulins, albumin, and factors 8 and 9.
“Bloodborne pathogens” means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

While HBV and HIV are specifically identified in the standard, the term includes any pathogenic micro-organism 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.
“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.
“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 though such events as needlesticks, human bites, cuts and abrasions.

When an employee experiences an “exposure incident,” the employer must institute the required follow-up procedures in their plan.
“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 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 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) that result in exposure to blood or OPIM in one's workplace.
Definitions, paragraph (b)

“Other potentially infectious materials (OPIM)” means:

1) the following human body fluids – semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

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, and 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.
“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 OSHA’s bloodborne pathogens standard.

In Minnesota, a non-OSHA regulation known as the “Infectious Waste Control Act” (Minnesota Statutes 116.78 through 116.82) addresses the required labeling of infectious waste when 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. Call (507) 344-5243 for more information.
Definitions, paragraph (b)

✓ “Engineering controls”* means controls (e.g., sharps disposal containers, self-sheathing needles, 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.

✓ This would include SESI Ps and needleless systems.

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

✓ These are 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.

*Denotes a change to the bloodborne pathogens standard as published in the Jan. 18, 2001, Federal Register.
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.
New from Milestone Scientific, SafetyWand is the revolutionary answer to the federal legislation* requiring safety engineered devices for dentists. The unique auto-retracting design shields the needle while you're not using it.

SafetyWand is safer and lighter than a traditional syringe and is operated with one hand. The pen-like grasp provides optimal ergonomics, allowing maximal tactile control. And, the best news is, SafetyWand is part of the CompuDent computer-controlled local anesthetic delivery system.

CompuDent with SafetyWand is ideally suited for all injections and procedures; it is easier to handle, it is easier to anesthetize and it is now safer than ever.
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.*
Dental safety syringe example

Ultra Safety Plus XL safety syringe features a patented system with a sliding sheath that locks into place for disposing of contaminated needles. This system allows for use of multiple cartridges and has been proven in dental clinics around the world.

BUY 5
GET 1
FREE!

*100 injection units & 1 syringe handle

Some lead... others follow.

800-872-8305 • www.septodontusa.com
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.
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; 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 Compliance 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 appropriate, commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

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

*Denotes a change to the bloodborne pathogens standard as published in the Jan. 18, 2001, Federal Register.
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 (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.
Let's begin development of your bloodborne pathogens exposure control plan for your site. It is discussed on pages five and six of your guidebook; however, go to Appendix B - Sample exposure control plan - on page 45 of your guidebook.

✓ **Step 1:** In the first paragraph, under the “Policy” heading, enter the full legal name of the worksite, such as “ABC Dental, LLC,” or “CDE Dental, Inc.” or “Richard Smith, DDS. For multiple locations with the same name, identify the specific site.

✓ **Step 2:** In the first paragraph, under the “Program administration” heading, insert the name and job title of the person at the worksite who is designated as the “program administrator” and who is responsible for implementation of the exposure control plan at the site. Also, indicate the phone number of the program administrator.
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 and others do not. For this list, the tasks and procedures - or groups of closely related tasks and procedures - in which occupational exposure occurs must be indicated.
Let's continue development of your bloodborne pathogens exposure control plan for your site. Specifically, the “exposure determination” is discussed on pages six through eight of your guidebook; however, go to Appendix B – Sample exposure control plan – on page 46 of your guidebook.

- In the first paragraph, under “Employee exposure determination,” list those job titles of site personnel where everyone in those jobs is at risk of occupational exposure to bloodborne pathogens.

- If you have a job titles in which some of the people in those job titles are at risk of occupational exposure and others with that job title are not, you must complete the list under the second paragraph. Include the department and task or procedure that puts them at risk.
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.
Universal 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 ask 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 (PPE) 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 be labeled or color-coded.
Safe medical devices, should be evaluated annually (with employee-user input), selected and their use implemented.
Sample Screening Form
Dental Safety Syringes and Needles

This form collects the opinions and observations of dental healthcare personnel who screen a safer dental device to determine its acceptability for use in a clinical setting. The form can be adapted for use with multiple types of devices. Do not use a safer device on a patient during this initial screening phase.

Product: Name, brand, company __________________________
Your position or title: ________________________________
Your occupation or specialty: __________________________

Date: __________________________

Clinical Considerations

<table>
<thead>
<tr>
<th>Does Not Meet Expectations</th>
<th>Meet Expectations</th>
<th>Exceeds Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The device permits the exchange of cartridges during treatment on the same patient.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. The weight and size of device is acceptable.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Insert a clear view of device components when selecting.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. The size and configuration of the syringe nozzle permits a clear view of the injection site and needle tip.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. No excessive force is required to advance or retract the plunger.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. The size and configuration of the syringe or needle permits use in all oral spaces and access to all areas of the mouth.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. The device permits multiple injections on the same patient.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>8. The device is capable of aspiration before injection.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>9. The needle is compatible with a reusable syringe.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>10. Does the product meet the needs of your dental practice based on the above criteria?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Safety Feature Considerations

11. The safety feature can be activated with one hand. 1 2 3
12. The safety feature is rotated into the syringe or needle. 1 2 3
13. The safety feature provides a warning signal in the event of accidental activation. 1 2 3
14. A visible or audible signal provides evidence of safety feature activation. 1 2 3
15. The safety feature is easy to recognize and use. 1 2 3
16. Does activated, the safety feature permanently secure the needle tip and cannot be retracted or accidentally released under normal used conditions. 1 2 3
17. The safety feature activates by itself. 1 2 3

General Product/Manufacturers Considerations

18. The manufacturer can provide the device and head parts. 1 2 3
19. A change in needle sizes and weights is available. 1 2 3
20. The company provides the samples for initial evaluation. 1 2 3
21. The company has a policy of responsibility to problems. 1 2 3

Structural Considerations

22. The housing is properly supported. 1 2 3
23. The device is easy to remove exclusively from the package. 1 2 3
24. Instructions and inserts are in the package. 1 2 3
25. Instructions are easy to follow and complete. 1 2 3
26. Instructions are provided in more than one language. 1 2 3
27. The design and color scheme do not exceed the volume of shapes and colors. 1 2 3
28. The shape and size of available shapes are conform with recommended dental practices. 1 2 3
29. This is a single use disposable device. 1 2 3
30. The device should be considered for further clinical evaluation. 1 2 3

Additional comments for any responses of "Does Not Meet Expectations" or "No":

May 14, 2002
www.cdc.gov/oralhealth/infection_control/forms.htm
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 your 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, then only through the use of a mechanical device or one-handed technique. (Document when and where this 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 or freezers, on shelves, in cabinets, or on countertops or benchtops where blood or OPIM are present.
Work practice controls

- All procedures involving blood or OPI M shall be performed in a manner that minimizes splashing, spraying, spattering and generation of droplets of these substances.
Work practice controls

- Specimens of blood or OPI M shall be placed in a container that prevents leakage during collection handling, processing, storage, transport or shipping. (A secondary container is needed if the outside of the primary container is contaminated or if it could be punctured by the specimen.)

- Specimens and equipment to be serviced must be decontaminated or marked with a readily observable label.
Let's continue development of your bloodborne pathogens exposure control plan for your site. Specifically, the “Methods of control” are discussed beginning on page nine of your guidebook; however, go to Appendix B – Sample exposure control plan on page 46 of your guidebook.

If you practice “universal precautions” at your site, you can leave the statement as is. If you practice “standard precautions” or “body substance isolation” at your site, you should replace the statement with the correct term, define the term and indicate you will follow this infection control approach at your site.
Written exposure control plan: methods of control (continued);
go to Appendix B – Sample exposure control plan on page 46 of your guidebook.

- In the “engineering controls” section at the bottom of page 46, list the dental safety syringes, safety scalpels (if applicable), sharps containers, sinks available for hand washing and, if applicable, the mouthpieces and resuscitation devices for CPR supplied and used at your site. When listing purchased devices, indicate the name brand, model number and a specific description of the device (e.g. Septodont Ultra Safety Plus XL Safety Syringe (01N4252) 25 gauge long).

- Describe the method you used to evaluate and select the SESIPs presently used at your site. This will be updated annually in your exposure control plan upon the required review of commercially available safety devices. You must describe how employees who use the device were involved in the evaluation, recommendation and selection process. This information should written in the exposure control plan after the “engineering controls” list at the bottom of page 46.
Written exposure control plan: methods of control (continued);
go to Appendix B – Sample exposure control plan on page 47 of your guidebook.

✔ The last step in this exercise is to list the work practice controls employees are to use to reduce the likelihood of exposure by altering how a task is performed. Examples:
  - Employees must wash their hands after the removal of gloves.
  - Employees must place disposable, contaminated sharps in an immediately accessible SHARPS container.
  - Contaminated needle bending, recapping or removal is prohibited unless a specific dental procedure requires such action. If recapping is needed in such a procedure, it must be performed with a mechanical device or a one-handed scope technique.
  - Employees may not shear or break contaminated needles.
  - Contaminated, reusable sharps, such as dental picks, must be placed in a puncture-resistant, leak-proof container until sterilization procedures are performed.
  - Employees may not eat, drink, smoke, apply cosmetics or lip balm, or handle contact lenses in work areas.
  - Employees may not place food or drink in refrigerators or cabinets, or on shelves, countertops or bench tops where blood or OPIM may be present.
  - Procedures performed must minimize splashing, spraying, spattering and droplet generation of blood or OPIM.
  - Employees must place contaminated dental impressions or biopsy samples in containers that prevent leakage and must label them properly.
  - When shipping equipment for servicing, employees must either decontaminate the equipment or properly label the container with the word “Biohazard” and the biohazard symbol.
Personal protective equipment, paragraph (d)(3)

✓ Appropriate personal protective equipment 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 (PPE) 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 that 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; or
- 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 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 upon 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 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 select the appropriate PPE based on the determination.

- 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.
Personal protective equipment: gowns, aprons and other protective clothing

- 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.
- The employer is responsible for providing, maintaining, laundering, disposing, replacing and assuring the use of PPE.
Let’s continue in the development of your written exposure control plan.

Go to page 47 of your sample exposure control plan.

✓ List the personal protective equipment required for various tasks having occupational exposure your site.

✓ Be specific in your descriptions.
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 OPI M.
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 most recent cleaning.
Housekeeping: appropriate disinfectants

- **Dilute bleach solution** made up within the past 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

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 re-use 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;
  - shall 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. They must be appropriately labeled or color-coded.

- Also, follow **Minnesota 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 location of use;
- placed and transported in bags that prevent 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).
Let’s continue in the development of your written exposure control plan. Pages 13 and 14 of your guidebook address housekeeping practices; however, go to page 48 of your sample exposure control plan.

✓ In "A. General procedures," list the approved disinfectant(s) you will use to decontaminate surfaces and equipment at your site. Be specific about the manufacturer, product name, registration number (if applicable) and the manufacturer’s contact time requirement.

✓ In "C. Laundry," indicate where contaminated laundry will be placed in an appropriate, labeled container at the site. Also indicate where laundry will be cleaned (i.e. on site or at a specific off-site laundry).
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.

- These special requirements would not apply in dental offices.
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 that 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 (USPHS); and
- performed by 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

- Must be provided even if the employee initially declines but later decides to accept the vaccination.

- Employees are not required to participate in an antibody pre-screening program to receive the vaccination series.

- Employees who decline the vaccination must sign a declination form found in Appendix A of the standard. (Note: The wording of the declination form cannot be altered.)
Hepatitis B vaccine declination (mandatory)

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signed: _____ (employee’s signature) ____________________________
Date: ______________________________________________________
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 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, laboratories and 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**
- Provides copy of standard to HCP
- Provides training to employee
- Offers vaccination (within 10 working days)

**Employee**
- Receives copy of standard
- Receives training from employer
- Accepts vaccination or declines vaccination (signs declination form)

**Health care professional**
- 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
  - Records HCP written opinion and provides copy to employer
- Provides copy of HCP’s written opinion
  - Receives copy of HCP’s written opinion
Let’s continue in the development of your written exposure control plan. Page 15 of your guidebook addresses hepatitis B vaccination requirements; however, go to page 49 of your sample exposure control plan.

✓ Under the “Hepatitis B vaccination” section, in the third paragraph, indicate the name and address of the specific health care facility that will be used to provide hepatitis B vaccinations to your employees. It is suggested a phone number is also included.
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

- Reports incident to employer

Employer

- Directs employee to HCP and sends to HCP:
  - copy of standard
  - worker job description
  - incident report
  - source individual's HBV/HCV/HIV status (if known)
  - employee’s hepatitis B vaccine status, other relevant medical info.

- Documents events on OSHA 300 and 301 (if applicable)

Health care professional (HCP)

- 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.)

- Receives copy of employer's written opinion

- Receives HCP’s written opinion; provides copy to employee, to med. file

- Sends only the HCP’s written opinion to the employer:
  - employee was informed of testing results, need for any follow-up
  - whether hepatitis B vaccine is indicated and received
Let’s continue in the development of your written exposure control plan. Page 17 of your guidebook addresses what to do if an exposure incident occurs; however, go to page 49 of your sample exposure control plan.

Under the “Post-exposure evaluation and follow-up” section:

- in the first paragraph, indicate the name of the person at the site that an employee is to contact if they experience an exposure incident.
What to do if an exposure incident occurs

Under the “Post-exposure evaluation and follow-up” section:

✓ in the second paragraph, indicate the name, address and phone number of the specific health care facility that will be used to provide a confidential medical evaluation and follow-up for an employee who has experienced an exposure incident.
What to do if an exposure incident occurs

Under the “Post-exposure evaluation and follow-up" section:

✓ to further improve your written exposure control plan, it is recommended you indicate who (program administrator?) will document the exposure incident (use of the “Exposure incident report” on page 56 is recommended); who will attempt to get the source individuals consent to be tested for HIV, HBV and HCV; and who will gather all documents (see algorithm) required to given to the health care provider conducting the post-exposure incident medical follow-up evaluation.
Paragraph (g) of the standard describes requirements and procedures for communicating the hazards to employees through labels, signs and training.
Labels, paragraph (g)(1)

The standard requires that 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; and
- contaminated equipment prior to shipping.

Red bags or containers may be substituted for labels.
The employer shall ensure that 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 information about 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 in 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 that 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

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

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

- Training solely by means of a film or video, without site-specific information or the opportunity for a discussion period, would not be acceptable.

- Generic films, videos or computer programs, even an interactive one, is 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.
Let’s continue in the development of your written exposure control plan. Page 20 of your guidebook addresses training and information; however, go to page 50 of your sample exposure control plan.

Under the “Employee training” section:

✓ in the first paragraph, indicate the name of the person who will conduct the required employee training about bloodborne pathogens at the worksite. Provide a brief description of their qualifications.
Recordkeeping, medical records, paragraph (h)(1)

The employer shall establish and maintain an accurate medical 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) results of previous examinations, medical testing and post-exposure evaluation and follow-up procedures;  
(D) a health care professional’s written opinion about any previous exposure incidents; and  
(E) a copy of the information provided to the health care professional.

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 of 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 employees 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)

<table>
<thead>
<tr>
<th>Medical records</th>
<th>Available to employee?</th>
<th>Available to employee representative?</th>
<th>Available to OSHA?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (to own records)</td>
<td>No (unless written consent given by employee)</td>
<td>Yes (to all employee medical records)</td>
</tr>
<tr>
<td>Training records</td>
<td>Yes (to own records)</td>
<td>Yes (to all employee training records)</td>
<td>Yes (to all employee training records)</td>
</tr>
</tbody>
</table>
For recording of percutaneous injuries from contaminated sharps
(confidentiality must be maintained)

The record shall contain at a minimum:
- the type and brand of device involved;
- the department or work area where the exposure 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, 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 who, under state law, must maintain the OSHA Form 300 - Log of work-related injuries and illnesses (i.e., in the most recent 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 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.
Let’s complete the development of your written exposure control plan. Pages 20 and 21 of your guidebook address recordkeeping; however, go to page 51 of your sample exposure control plan.

Under the “Medical records” section:

✓ in the first paragraph, indicate the name of the person who will be responsible for maintenance of the required medical record for each employee identified in the exposure determination at the site; and

✓ in the second paragraph, indicate the name of the person who will be responsible for addressing employee requests for medical records or for requests with having written consent from the employee in question.
Recordkeeping

Under the “Training records” section:

✓ in the first paragraph, indicate the name of the person who will be responsible for maintenance of the required training records for employees identified in the exposure determination at the site; and

✓ in the last paragraph, indicate the name of the person who will be responsible for addressing the employee or authorized employee-representative for requests for training records.
Recordkeeping

Under the “Sharps injury log” section indicate whether, based upon size (number of total employees), the employer is required to maintain a sharps injury log. If so, indicate whether the OSHA 300 Log will be used in lieu of the required sharps injury log and how the two requirements are met to use this option.

The name of an individual experiencing a sharps injury with a contaminated item must not be placed on either the sharps injury log or the OSHA 300 log. It should only be identified as a “privacy concern.”
Congratulations, you are done!

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 also will significantly reduce the risk of workers contracting AIDS, hepatitis C or other bloodborne diseases.
Visit the federal OSHA website at www.osha.gov for:

✓ the complete bloodborne pathogens standard;

✓ a Word version of a model exposure control plan;

✓ interpretations;

✓ e-tools; and

✓ a variety of other helpful documents pertaining to worker safety and health.
Information sources

Visit the Minnesota Department of Labor and Industry website at www.dli.mn.gov for:

- access to Minnesota Statutes and Rules; and


Note: Appendix G of this document also contains a bloodborne pathogens model exposure control plan.
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

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