

Reducing bloodborne pathogens exposure in dentistry: an update -- page 1

Reducing bloodborne pathogen exposures helps provide a safe and healthful workplace for dental employers and employees. In addition, reducing exposures can help reduce costs and increase productivity and employee morale.

California code of regulations, title 8 (8 CCR), bloodborne pathogens section 5193 (c) (1), requires each employer having employee(s) with occupational exposure (faq #3 and #4) to eliminate or minimize employee exposures to bloodborne pathogens. Bloodborne pathogen exposures must be reduced by establishing, implementing, and maintaining an effective exposure control plan (see page 2). An employer's exposure control plan must include effective procedures for identifying and selecting appropriate, currently available engineering controls for the work tasks employee(s) perform. In addition to other requirements, contaminated sharps shall not be bent, recapped or removed from devices except when the procedure is preformed using a mechanical device or a one-handed technique, and the employer can demonstrate that no alternative is feasible, or that such action is required by a specific dental procedure.

Engineering controls

Engineering controls isolate, remove or reduce the bloodborne pathogen hazard from the workplace. Examples of engineering controls include sharps with engineered sharps injury protection (ESIP) and sharps disposal containers.

ESIP means either (1) a physical attribute built into a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, which effectively reduces the risk of an exposure incident by a mechanism such as barrier creation, blunting, encapsulation, withdrawal, or other effective mechanisms; or (2) a physical attribute built into any other type of needle device or into a non-needle sharp, which effectively reduces the risk of an exposure incident. Remember, for a device to qualify as ESIP, the anti-stick safety feature must effectively reduce the risk of an exposure incident. This depends on factors that include, but are not limited to, the design of the device, its ability to perform as intended by the design, the appropriateness of the device for a particular application.



Contaminated sharps must be placed immediately (or as soon as possible after use) in sharps disposal containers. Sharps containers must be labeled and easily accessible to employees. They must be located as close as feasible to the immediate area where the sharps are used or can be reasonably anticipated to be found (e.g., dental operatories)(FAQ #49 and #50). Sharps containers must be:

- rigid
- closeable and sealable
- puncture resistant
- leak proof
- portable
- kept in an upright position
- closed immediately prior to their removal or replacement
- placed in a secondary container if leakage is possible
- replaced as needed to prevent overfilling.

ESIP must be used to reduce or prevent exposures to bloodborne pathogens except in circumstances where the employer can demonstrate that the ESIP device:

1. Is not available in the marketplace
2. Jeopardizes the patient's safety or the success of a dental procedure as determined by the dentist or their professional staff
3. Is not more effective than the control currently in use; or
4. Lacks the necessary safety performance information. This means that the employer must:
 - a. demonstrate that reasonably specific and reliable information on the safety performance of this particular engineering control is not available, and
 - b. actively determine by means of objective product evaluation criteria whether the use of the engineering control will reduce the risk of exposures. For more information on the exceptions to the use of engineering controls see faq #33, #35, #36, #39 and #42 C

[page 1](#) | [page 2](#) | [page 3](#) | [page 4](#)

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Reducing bloodborne pathogens exposure in dentistry: an update -- page 2

Exposure control plan

Your exposure control plan must promote the use of safe and effective engineering controls and work practices in your dental office. The written exposure control plan must contain at least the following elements:

1. "Policy and elements" - a policy statement to identify the required elements.
2. "Exposure determinations" - list of jobs where your employees may have occupational exposure.
3. "Schedules for implementing procedures" including:
 - observing universal precautions
 - assessing and updating engineering / work practice controls
 - handling regulated waste
 - cleaning and decontamination of the worksite / equipment
 - promoting good hygiene
 - using PPE
 - providing Hepatitis B vaccination and post-exposure evaluation and follow-up
 - communicating hazards to employees
 - keeping records
4. "Provision for the initial reporting of exposure incidents"
5. "Hepatitis B vaccination" - establishes a policy to provide and document the hepatitis B vaccine series to unvaccinated employees.
6. "Post-exposure evaluation and follow-up" - details procedures to care for employees after an exposure incident.
7. "Effective procedures" for:
 - evaluating the circumstances of exposure incidents
 - gathering sharps injury log information
 - tracking the frequency of use / types / brands of sharps involved in exposure incidents
 - identifying and selecting appropriate / currently available engineering controls
 - ◆
 - documenting exceptions to using engineering controls
 - involving employees in the review / update of the exposure control plan



[page 1](#) | [page 2](#) | [page 3](#) | [page 4](#)

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[File a workplace safety complaint](#)
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Reducing Bloodborne Pathogens Exposure in Dentistry: An Update – page 3

Examples of engineering controls

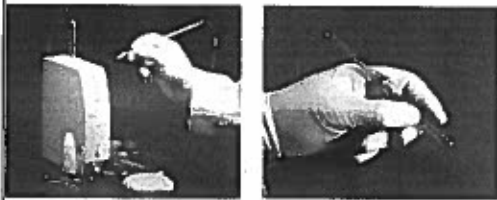
Remember it is important to monitor the availability of new engineering controls in the market place. As they become available, new products should be systematically screened, evaluated, tested and selected using the procedures in your exposure control plan. Information on devices with sharps safety feature may be obtained from many sources. A website which may provide you more information is:

- the University of Virginia, health systems website at www.healthsystem.virginia.edu/internet/epinet/safetydevice.cfm

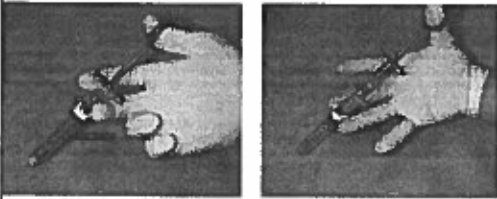
For additional help see the Resources section on page 4

Some examples of Food and Drug Administration (FDA) approved devices with sharps safety features are shown below. These examples may not represent all approved safety devices for dentistry. Inclusion of products in these examples does not constitute an endorsement by Cal/OSHA.

Computer injection - safety syringe



Two types of safety syringes with sliding sheaths



AND



Sharps disposal container





Reducing bloodborne pathogens exposure in dentistry: an update -- page 4

Resources

Information on topics related to reducing or preventing bloodborne pathogens exposures may be obtained from a wide variety of sources. The list of sources below is not exhaustive and does not include all sources that may provide useful information. Inclusion on the list is not an endorsement of any particular source. Examples of useful informational sources are as follows:

Web sites

American Dental Association

<http://www.ada.org>

CDC - Guidelines for Infection Control in Dental Health-Care Settings – 2003, Morbidity and Mortality Weekly Report, Dec 19th, 2003, Vol. 52, No. RR-17.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm>

OSHA, dentistry, bloodborne pathogens

<http://www.osha.gov/SLTC/dentistry/index.html>

<http://www.osha.gov/SLTC/bloodbornepathogens/index.html>

OSAP - Organization for Safety and Asepsis Procedures

<http://www.osap.org>

CDC - Infection Control

http://www.cdc.gov/OralHealth/infection_control

Selected scientific and professional publications

Carlton JE, Dodson TB, Cleveland JL, Lockwood SA. The risk of percutaneous injury in oral and maxillofacial surgery. *J Oral Maxillofac Surg* 1997;55:553-6.

Cleveland JL, Barker L, Gooch BF, Beltrón ED, Cardo D. Use of HIV postexposure prophylaxis by dental health care personnel: An overview and updated recommendations. *JADA* 2002;133(12):1619-1630.

Cleveland JL, Cardo DM. Occupational exposures to human immunodeficiency virus, hepatitis B virus, and hepatitis C virus: risk, prevention, and management. *Dent Clin N Am* 2003;47:681-696.

Cleveland J, Lockwood S, Gooch B, et.al. Percutaneous injuries during dental procedures: An observational study. *J Am Dent Assoc* 1995;126:745-51.

Cleveland JL, Gooch BF, Lockwood SA. Occupational blood exposures in dentistry: a decade in review. *Infect Control Hosp Epidemiol* 1997;18(10):717-21.

Cleveland JL, Gooch BF, Shearer BG, Lyerla RL. Risk and prevention of hepatitis C virus infection: Implications for dentistry. *J Am Dent Assoc* 1999;130:641-47.

Cleveland JL, Marianos DW. Special Considerations for Dentistry. In: DeVita VT, Hellman S, Rosenberg SA, eds. *AIDS: Biology, Diagnosis, Treatment, and Prevention*. 4th ed. Philadelphia: Lippincott-Raven, 1997:675-683.

Cleveland JL, Siew C, Lockwood SA, Gruninger SE, Gooch BF, Shapiro CN. Hepatitis B vaccination and infection among US dentists, 1983-1992. *J Am Dent Assoc* 1996;127:1385-92.

Coulter I, Marcus M, Freed JR, Der-Martirosian C, Cunningham WE, Andersen RM, Maas WR, Garcia I, Schneider DA, Genovese B, Shapiro MP, Bozzette SA. Use of dental care by HIV-infected medical patients. *J Dent Res* 2000;79(6):1356-61.

Gooch BF, Cardo DM, Marcus R, McKibben PS, Cleveland JL, et.al. Percutaneous exposures to HIV-infected blood among dental workers enrolled in the CDC needlestick study. *J Am Dent Assoc* 1995;126:1237-42.

Gooch BF, Siew C, Cleveland JL, Gruninger SE, Lockwood SA, Joy ED. Occupational blood exposure and HIV infection among oral and maxillofacial surgeons. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1998;85:128-34.

[page 1](#) | [page 2](#) | [page 3](#) | [page 4](#)

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