

## Preventing occupational exposure to bloodborne pathogens and other biohazardous materials

**O**n 1 January 2008, WorkSafeBC will implement new Occupational Health and Safety Regulation guidelines to minimize health care workers' potential occupational exposure to bloodborne pathogens and other biohazardous materials. If you are an employer and your workplace uses hollow-bore needles to collect blood or treat patients, you must establish the following engineering and work practice controls:

- If clinically appropriate, supply employees with a safety-engineered needle that provides the highest level of protection from a needlestick injury, or a needleless device in place of a hollow-bore needle.
- Implement safe work procedures and practices for using safety-engineered needles or needleless devices.
- Ensure employees wear personal protective equipment as a shield from biohazardous material.
- Design housekeeping practices to keep the workplace clean and free from spills of biohazardous material.
- Implement work procedures that ensure laundry contaminated with biohazardous material is isolated and bagged, and handled as little as possible.
- For bloodborne pathogens, implement a system of universal precautions for all tasks and procedures identified as having a potential for occupational exposure.

### Needlestick injuries

Contact with blood or other body fluid is a major concern for health care workers because of the potential for acquiring infectious diseases, such as hepatitis B (HBV), hepatitis C (HCV), or HIV. After a needlestick exposure, a health care worker's risk of infection depends on the pathogen involved, the

immune status of the worker, the severity of the needlestick injury, and the availability and use of appropriate postexposure prophylaxis.

Studies show that the average disease transmission rate for health care workers exposed to a specific pathogen through a percutaneous injury is:

- 0.3% per injury involving HIV-infected blood: the risk of HIV transmission may increase substantially when the worker is exposed to a larger quantity of the patient's blood, as indicated by a visibly bloody device, while placing a needle in a patient's vein or artery, or attending to a deep injury.
- 6%–30% per injury involving HBV-infected blood: this applies to health care workers who experience a single needlestick exposure and who are not immune to either from pre-exposure vaccination or prior infection.
- 1.8% (with an overall range of 0%–7%) per injury involving HCV-infected blood.

### High-risk types of needles

Health care workers use many types of needles and other sharp devices to provide patient care. However, data from hospitals show that only a few needles and other sharp devices are associated with the majority of injuries. Of the nearly 5000 percutaneous injuries reported between June 1995 and July 1999, 62% were associated with hollow-bore needles, primarily hypodermic needles attached to disposable syringes and winged-steel (butterfly-type) needles.

### High-risk work practices

In addition to risks related to device characteristics, needlestick injuries have occurred from certain work practices, such as:

- Recapping: 5% of needlestick injuries occur when workers recap used needles by hand, despite the recommended practice of disposing of used needles without their caps, directly into sharps containers. (Newer "engineered" needles do not require recapping.)
- Transferring a body fluid between containers: for example, missing the target when attempting to transfer the fluid from a syringe to a specimen container such as a vacuum tube.
- Failing to properly dispose of used needles in puncture-resistant sharps containers: for example, leaving needles or other sharps in the work area or discarding them in a container that is not puncture resistant.

### Contact us

For information about work-related exposure to bloodborne pathogens and needlestick injuries, please contact a medical advisor at your nearest WorkSafeBC office. For prevention information, visit the web site of the Occupational Health and Safety Agency for Healthcare in British Columbia at [www.ohsah.bc.ca](http://www.ohsah.bc.ca), choose "Disease Prevention" from the "Programs" pull-down menu, and go to "Tips and Tools."

—Don Graham, MD  
WorkSafeBC  
Chief Medical Officer

**HOLD THAT DATE!**  
**WorkSafeBC's 8th Annual  
Physician's Education Conference**

Saturday, 8 December 2007  
Vancouver Marriott Pinnacle Hotel

Mark your calendars and watch  
for details in subsequent  
WorkSafeBC pages.