Preventing Percutaneous Injuries (5/07)


The Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC) recommend that health-care personnel adopt safer work practices and consider using medical devices with safety features. This article describes the circumstances of percutaneous injuries among a sample of hospital-based dental health-care personnel (DHCP) and estimates the preventability of a subset of these injuries: needlesticks. The authors analyzed percutaneous injuries reported by DHCP in the CDC's National Surveillance System for Health Care Workers (NaSH) from December 1995 through August 2004. Of 360 percutaneous injuries, 36 percent were reported by dentists, 34 percent by oral surgeons, 22 percent by dental assistants, and 4 percent each by hygienists and students. Almost 25 percent involved anesthetic syringe needles. Of 87 needlestick injuries, 53 percent occurred after needle use and during activities in which a safety feature could have been activated (such as during passing and handling) or a safer work practice used. NaSH data show that needlestick injuries still occur and that a majority occur at a point in the workflow at which safety syringes—which could have been used to reduce the risk of injury—were not activated. All dental practices should have a comprehensive written program for preventing needlestick injuries that describes procedures for identifying, screening and, when appropriate, adopting safety devices; mechanisms for reporting and providing medical follow-up for percutaneous injuries; and a system for training staff members in safe work practices and the proper use of safety devices.

DECS Comment: The majority of exposures in dentistry are preventable. Methods to reduce the risk of blood contacts include the use of standard precautions, use of devices with features engineered to prevent sharp injuries, and modifications of work practices. These approaches, along with training and education, have contributed to the decrease in percutaneous injuries among dentists during recent years. While the authors of this article estimated that using a safety syringe might have prevented 53% of the needlestick injuries, they also briefly discussed several important limitations of this study. First, the authors did not have information on which injuries resulted from unsafe work practices. There are numerous work practices that could have potentially prevented all of the needlesticks. Additionally, the data that the authors used were self-reported from a small number of large, urban hospitals and may not be representative of some hospital-based or private practice settings. Underreporting is always a concern because studies have indicated that many occupational injuries go unreported. Most importantly, the authors assumed that if safety syringes had been used 100% of the time, needlestick injuries could have been prevented—which assumes that the safety features were activated and worked properly, and that no failures occurred.

Engineering controls are the primary method to reduce exposures to blood and other potentially infectious materials (e.g., saliva) from sharp instruments and needles. Whenever
possible, engineering controls should be used as the primary method to reduce exposures to bloodborne pathogens. Dental anesthetic syringes and needles that incorporate safety features have been developed for dental procedures, but the low injury rates in dentistry limit assessment of their effect on reducing injuries among DHCP. In most dental practices, none of currently available dental anesthetic safety devices have been widely accepted as an alternative to the traditional dental anesthetic syringe. Click here for additional information on safety dental anesthetic devices. Therefore, the importance of using work practice controls cannot be overlooked. Work practice controls are intended to reduce the risk of blood exposure by changing the manner in which a task is performed.

OSHA requires DHCP to develop a program to prevent sharps injuries that includes a process to identify, evaluate, and select engineering and work practice controls. Safety devices should be evaluated based on the nature of existing exposures and type of work performed. USAF dental facilities should follow local medical treatment facility (MTF) policy regarding the use and evaluation of safety devices, as well as any documentation requirements. The MTF will likely require a clinical evaluation involving dental staff members (e.g., dentists, dental assistants and hygienists) that will use the device. This is beneficial because it provides DHCP with the opportunity to offer input when selecting a safety device and before it is purchased in large quantities. Also, it helps to ensure staff members are familiar with the device before implementation.