C2.6 Occupational Hazards for Healthcare Workers

Needlestick and other blood or body substance incidents are the main causes of occupational hazards for healthcare workers, including HIV, HBV and HCV.

C2.6.1 Sharps injuries

Healthcare workers face the risk of injury from needles and other sharp instruments during many routine procedures. Injuries most often occur after use and before disposal of a sharp device, during use of a sharp device on a patient and during disposal (CDC 2009). There are many possible mechanisms of injury during each of these periods.

Measures to help combat needlestick and other sharps injuries include: training and education on the risks associated with procedures and on the use of needlestick devices; and safer working practices (including adherence to proper handling and disposal procedures and ensuring that disposal containers are not overfilled [see also Section C1.5.1]).

The use of devices with safety engineered protective features was mandated in the US in 2000 and has been associated with reduced rates of incidence of needlestick injuries (Jagger et al 2008). Despite difficulties in determining the direct impact of using safety-engineered devices compared to standard devices, safety-engineered devices are an important component in percutaneous injury prevention (Tuma & Sepkowitz 2006). Typically a sharps-injury campaign involves multi-modal strategies. As a result many studies that show a reduction in incidence of needlestick injuries with the use of safety engineered devices have also involved a combination of other intervention measures such as training and education, overarching healthcare facility policies and other technologies (Whitby et al 2008).

Australia is the only country with well-developed systems of infection prevention and control and occupational health and safety that has not yet mandated the use of safety or retractable devices. Such mandates exist in the USA, Canada and most recently the European Union, including the UK. The current UK policy recommends the provision of medical devices that incorporate a sharps protection mechanism where there are clear indications that they will provide safe systems of working for healthcare workers. Consideration of economic and social costs, staff preferences, ease of use, and time required to train staff is necessary before widespread implementation of safety-engineered devices in Australia. In the meantime, if a facility chooses to use safety-engineered devices, introduction of the devices must be supported by a comprehensive training and education program.

C2.6.2 Managing risk of exposure

Exposures that might place a healthcare worker at risk of hepatitis B virus, hepatitis C virus, HIV or human T-cell lymphotropic virus type I (HTLV-I) are percutaneous injury (e.g. needlestick or cut with a sharp object) or contact of mucous membrane or non-intact skin (e.g. exposed skin that is chapped, abraded, or affected by dermatitis) with blood, tissue or other potentially infectious body substances.

Each healthcare facility requires a policy on the management of needlestick injuries, and on providing immediate post-exposure advice for sharps injuries and other blood or body substance incidents involving healthcare workers, as generic policies may not be relevant to individual settings (e.g. access to care, especially after hours).

Treatment protocols include removal of contaminated clothing, thorough washing of the injured area with soap and water; and flushing of affected mucous membranes with large amounts of water.

Healthcare workers should be aware that they must report occupational exposures immediately.

Post-exposure prophylaxis

Post-exposure prophylaxis (PEP) is the medical response given to prevent the transmission of bloodborne pathogens following a potential exposure. PEP includes first aid, counselling including the assessment of risk of exposure to the infection, testing, and depending on the outcome of the exposure assessment, the prescription of antiretroviral drugs, with appropriate support and follow-up (WHO 2008).

For people who have an exposure to a known source, post exposure prophylaxis (PEP) should be offered for HIV as soon as possible after the incident. Initiation of HIV PEP depends on the type of exposure, the source's stage of HIV infection, the source's HIV viral load and the source's history of HIV antiretroviral therapy. Therefore, a thorough assessment of risk guides the actions to be taken.
Initiation of HBV PEP is dependent on the type of exposure, the source’s HBsAg status and the exposed persons HBV immunisation history.

At this time, there is no prophylaxis proven to be effective for Hepatitis C. The aim of follow up is to detect acute hepatitis C as soon as possible so that appropriate management can be instituted.

Standard guidelines for pre-test counselling or pre-test discussions for HIV, HBV and HCV must be followed when testing the source and the healthcare worker.

Specific guidance on PEP can be found in WHO guidelines (WHO 2008) and CDC (2005). The ASHM guidelines are relevant to non-occupational exposure but include references to jurisdictional guidelines for occupational exposure (see Section C7 for links).