

DARTMOUTH DENTAL PRACTICE

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Review date	Details
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Needle Stick Injury

Hazardous substance

- Blood
- Saliva
- Micro-organisms
- Biological agents

Risks to health

The main risk from a sharps injury is the potential exposure to infections such as blood-borne viruses (BBV). This can occur where the injury involves a sharp that is contaminated with blood or a bodily fluid from a patient. The blood-borne viruses of most concern are:

- Hepatitis B (HBV)
- Hepatitis C (HCV)
- Human immunodeficiency virus (HIV).

The transmission of infection depends on a number of factors, including the person's natural immune system. We know the number of injuries each year is high, but only a small number are known to have caused infections that led to serious illness. However, the effects of the injury and anxiety about its potential consequences, including the adverse side effects of post-exposure prophylaxis can have a significant personal impact on an injured employee.

Who is at risk?

Dentists, dental nurses, hygienists and patients are all at risk.

Epidemiology

The average risk following percutaneous (through the skin) exposure to HIV-infected blood in health care settings is about 3 per 1,000 injuries, less than 1:1000 following mucocutaneous (through the mucosa) exposure, and has never been recorded following contact of HIV blood with intact skin.

In the UK, as of November 2006, there have been 5 documented cases of [HIV infection](#) and 14 possible or probable cases in healthcare workers after exposure at work. Of these, 5 have died. Many of these workers had worked in countries of high HIV prevalence, and are presumed to have been infected outside the UK.¹ [Hepatitis B](#) and [Hepatitis C](#) infection are more likely than HIV, and health care workers may still not fully appreciate the risk.

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Certain features of a percutaneous injury carry a particularly high risk

- A deep injury
- Terminal HIV-related illness in the source patient
- Visible blood on the device which caused the injury
- Injury with a needle which had been placed in a source patient's artery or vein
- Follow local or national or international protocol.
- First aid
- Contaminated needle-stick, sharps injury, bite or scratch - encourage bleeding, wash with soap and running water
- Blood or body fluid in eyes or mouth - irrigate with copious quantities of cold water
- Blood or body fluid on broken skin - encourage bleeding if possible, and wash with soap under running water (but without scrubbing)

Report incident and discuss with local Occupational health consultant immediately 03333 449006. Discuss type of injury, donor HIV status if known, etc. If this urgent preliminary risk assessment considers there is a significant risk of HIV, post exposure prophylaxis (PEP) needs to be started as soon as possible - ideally within 1 hour. This reduces risk of transmission by 80%. It may be appropriate to give the first dose of PEP pending a fuller assessment after the HIV status of the 'donor' is known. Where the donor is unknown, epidemiological likelihood of HIV in the source needs to be considered, although in most cases PEP will not be justified.

PEP currently consist of a 28-day course of treatment with a triple combination of antiretroviral drugs, has significant side effects, and needs careful follow-up.

Investigations

- take blood from the injured worker for virology, (HIV, hep B, hep C). Start PEP where appropriate and consider need for antibiotic therapy or hepatitis B immunisation.
- The guidance concerning donor patients who refuse consent is currently in a state of flux due to various changes in legislation, which vary from country to country within the UK.
The situation is different in England and Wales, Scotland and Northern Ireland. In this situation, advice should be sought from your medical defence organisation.

Documentation

Fill out accident book and complete critical event audit. How can subsequent events be prevented?

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Follow up

Ensure adequate follow up of both care worker and donor. The care worker in particular will require early involvement by the Occupation Health service. They may need specific advice about having to take sick leave if medication is required, and the possible requirement for psychological support.

Prevention of avoidable exposure in an occupational setting

This is of prime importance. Follow The Health Protection Agency advice by following this link https://www.heales.com/msys/Documentation/oh/Needlestick%20injury%20information%20leaflet%20V2_zs.pdf

General measures

- Wash hands before and after contact with each patient, and before putting on and after removing gloves.
- Change gloves between patients.
- Cover existing wounds, skin lesions and all breaks in exposed skin with waterproof dressings, wear gloves if hands are extensively affected.
- Wear gloves where contact with blood can be anticipated.
- Avoid sharps usage where possible, and where sharps usage is essential, exercise particular care in handling and disposal.
- Avoid wearing open footwear in situations where blood may be spilt, or where sharp instruments or needles are handled.
- Clear up spillage of blood promptly and disinfect surfaces.
- Pre-employment occupational health assessment should identify those with damaged skin e.g. fissured hand eczema, who may be at higher risk of occupationally acquired infection, and ensure that advice is given about minimising any occupational health risk to which they may be exposed.
- Wear gloves when cleaning equipment prior to sterilisation or disinfection, when handling chemical disinfectant and when cleaning up spillages.
- Follow safe procedures for disposal of contaminated waste.
- Specific measures
- This will obviously depend on the procedure being undertaken, but may include:
- Use of new, single-use disposable injection equipment for all injections is highly recommended. Sterilisable injection should only be considered if single use equipment is not available and if the sterility can be documented with Time, Steam and Temperature indicators.
- Discard contaminated sharps immediately and without recapping, in puncture and liquid proof containers that are closed, sealed and destroyed before completely full.
- Document the quality of the sterilisation for all medical equipment used for percutaneous procedures.

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- Wash hands with soap and water before and after procedures; use of protective barriers such as gloves, gowns aprons, masks, goggles for direct contact with blood and other body fluids.
- Disinfect instruments and other contaminated equipment.
- Handle properly soiled linen. (Soiled linen should be handled as little as possible. Gloves and leak-proof bags should be used if necessary. Cleaning should occur outside patient areas, using detergent and hot water) .

More detailed advice, including use of blunt-tipped needles, "neutral zones" for passing of sharps during surgery, are available in Guidance for clinical health care workers - go to this **[link](#)**.