Sharps injuries – what to do

A set of guidelines on how to deal with needlestick injuries is included in a new report on the emergency management of injuries prepared for the Scientific Advisory Committee of the Health Protection Surveillance Centre. Dentists were represented on the Committee by DR TOM FEENEY who now summarises the guidelines for dentists.

Needlestick and other sharps injuries are occupational hazards in dental practice and while there is structured access to professional support in the HSE and Hospital Service, this is not the case in private practice. Health care workers (HCWs) in the HSE and Hospital Service have ready access to an occupational health department in contrast to private practice where often an incident can be the source of much stress and worry, particularly when easy access to appropriate advice is not available.

It is timely therefore that after two years’ work the Emergency Management of Injuries (EMI) Working Group set up to develop standardised guidelines on the management of injuries (such as needlesticks, bites, sexual exposures), where there is a risk of transmission of bloodborne viruses (BBVs), has now published its Guidelines. The Guidelines provide a very important section on risk management in dental practice, i.e., the absolute necessity to be prepared should an injury or event occur. This article reprints the management of injuries flow chart from the EMI Guidelines and also contains the on-site assessment form, which should be filled out in advance of an injured HCW attending the hospital emergency department. This form is now also downloadable from the IDA website, as are the complete EMI Guidelines.

**Background**

Injuries where there is a risk of transmission of infection frequently present in emergency departments, occupational health departments and primary care settings. BBV infections such as hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV) are of particular concern because of the potential long-term health effects for people who become infected, the anxiety experienced by the injured persons, and the increase in their prevalence in the population in recent decades.
The appropriate management of such injuries, in the emergency and follow-up periods, has important implications in terms of minimising the risk of transmission of BBVs and in allaying the psychological impact on the injured person.

Many emergency departments and occupational health departments throughout Ireland have developed guidelines for the management of injuries where there is a risk of BBV transmission. However, these guidelines differ in their scope (e.g., all BBVs versus HIV; all exposures versus occupational or sexual), their level of detail, and recommended actions, such as testing schedules and the use of post-exposure prophylaxis (PEP). The development of these guidelines was prompted by the idea of having standardised guidelines on the management of these injuries that could be used in all relevant settings throughout the country and that would be based on best available evidence and expert opinion.

**Purpose and scope**
The purpose of these Guidelines is to provide comprehensive guidance on the appropriate management of injuries where there is a risk of transmission of BBVs and other infections.

**Toolkit**
The Guidelines will shortly be presented as a user-friendly toolkit with separate access to individual parts of the Guidelines. In this way, the user will be able to rapidly and easily access the relevant algorithms, forms, leaflets and background material as needed in an emergency. For example, it will be possible to rapidly access the recommended care pathway based on the different types of presenting injuries, e.g., community needlestick, occupational exposure, human bite, sexual exposure. There will also be electronic hyperlinks internally between all the relevant sections.

THE GUIDELINES ARE INTENDED FOR USE IN THE FOLLOWING WAYS:

**Setting**
Any medical setting where the patient first presents with the injury, for example, a hospital emergency department or occupational health department, a general practice, a dental practice, a Garda occupational health department, a clinic for sexually transmitted infections or a sexual assault treatment unit (SATU).

**Patient population**
Members of the public in a healthcare or community setting; healthcare workers (HCW) or other workers (e.g., members of the Garda or defence forces) in an occupational setting; adults and children; both recipients and sources of injuries.

**Type of injury**
Needlestick or other sharps injury, sexual exposure, human bites, exposure of broken skin or of mucous membranes. These guidelines do not cover injuries where the source is an animal.

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**Management of injuries where there is risk of bloodborne virus (BBV) transmission**

**Exposure incident:**
needlestick, sharps, bite, splash, sexual.

**Initial wound management**
Wound: encourage bleeding, wash, don’t scrub, cover. Eye splash: irrigate with water.

**Is exposure significant?**
i.e., high risk material and significant injury (see panel below).

**Assess BBV status of source**
(HBV, HCV, HIV)

Source known:
test for BBVs or confirm previous results, with consent.

Source unknown or does not consent:
assess risk based on circumstances and likelihood of BBV.

**Assess BBV status of recipient**
History of HBV vaccination, previous tests for BBVs.
Take blood to test for BBVs or store.

**Clinical management of recipient**
Based on risk assessment.

**Information and follow-up**
Level of risk, precautions, follow-up for tests, vaccination, PEP, information, STI screen.

**High risk materials:** blood, semen, vaginal secretions, body fluids with visible blood.

**Low risk materials:** urine, nasal secretions, saliva,* sputum, faeces, vomit, sweat, tears – unless visible blood.

**Significant injury:** percutaneous, human bite* with skin broken, exposure of broken skin or mucous membrane to blood or body fluids, sexual exposure (unprotected).

**Non-significant injury:** superficial graze, exposure of intact skin, exposure to sterile sharps.

* If human bite with no visible blood, only risk is HBV.

**Source testing:** HBsAg, anti-HCV, HIV Ag/Ab. If HBsAg positive, test HBeAg, anti-HBe and viral load. If anti-HCV positive, test HCV RNA and viral load. If HIV positive, test viral load.

**Recipient testing:** HBsAg, anti-HCV, HIV Ag/Ab, ± anti-HBs.

**Clinical management of recipient may include:** HBV PEP; HIV PEP; emergency contraception; tetanus; antibiotics.

**Follow-up/referral may be:** GP, Occupational Health, ID, SATU, STI/GUM.
Injury in dental practice

Protocols should be in place in the dental setting to prevent avoidable exposures and to minimise risk. These protocols should include: the safe use of equipment; the use of personal protective equipment; training; re-training and induction; the need for vaccination; the need for personal protective equipment; the use of personal protective equipment; and, what to do in case of an accident. A responsible person should be appointed to manage such incidents. It is vitally important that the practice identifies, in advance, an appropriate unit to which to refer an injured person. The legislation which covers this area is the Safety, Health and Welfare at Work Act 2005 (and 2007 Regulations).

Emergency management of an injury

Immediate wound hygiene should be carried out.

If a significant exposure has occurred, i.e., a bite, or an injury from a used needle or from a used sharp, immediate referral should take place to the appropriate unit (emergency department or infectious disease specialist or occupational health specialist) where a definitive risk assessment is carried out.

The management of the recipient (injured party) is directly based on risk assessment of the source. The information to assist the appropriate unit in making this assessment should be provided by the practice using the on-site assessment form (Appendix 20), which is downloadable from the IDA website (www.dentist.ie). Copies of this form should be readily available in all practices to facilitate speedy referral.

The source must be informed before they leave the practice that an injury has occurred and the on-site assessment form should be completed in their presence. The source should be asked if they have any relevant medical history or risk factors for BBVs. They should be asked if their medical history and contact phone number can be passed on to the medical team that will treat the recipient. The source should also be informed that they may be contacted by the recipient’s treating doctors and asked to provide a blood test. They should be reassured that all information will be treated with strict confidentiality by the recipient’s treating doctors, and that where necessary appropriate follow-up care will be offered to them. The source should be informed that the results of their blood tests may have to be disclosed to the recipient.

The use of information put on the on-site assessment form must comply with data protection legislation. Contact details of the responsible person (from the dental practice) both during and after hours must be made available to the appropriate unit.

Time

Emergency management on first presentation, and also arrangements for any necessary follow-up.

Main issues

The main questions covered by the guidelines are as follows:

- What first aid treatment should be administered?
- Is the exposure significant?
- What materials are significant for BBVs?
- What injuries are significant for BBVs?
- How to assess the risk of transmission of BBVs?
- What is the level of risk of HBV, HCV or HIV?
- What factors in the injury increase the risk of transmission?
- How should the source be investigated?
- How should the recipient be investigated?
- What blood tests should be done and when?
- Who should receive HBV vaccine and/or hepatitis B specific immunoglobulin (HBIG)?
- When is HIV PEP indicated and what treatment protocol should be used?
- How should HCV exposure be managed?
- What reassurance can be given to the recipient?
- What precautions are advised?
- What follow-up is needed?

Working Group

The Working Group that developed the guidelines is a sub-committee of the Scientific Advisory Committee (SAC) of the Health Protection Surveillance Centre (HPSC), and included professionals with the relevant expertise and experience, and target users of the guidelines.

The disciplines represented were dentistry, emergency medicine, infection prevention and control nursing, infectious diseases, medical microbiology, occupational medicine (hospital and Garda), and public health medicine. The members were chosen to represent a professional body or because of their individual expertise. The Irish College of General Practitioners (ICGP) was unable to provide a representative but agreed to be available for consultation during the course of the Guidelines’ development.

The members of the working group were:

Dr Anthony Breslin      Specialist in Public Health Medicine, HSE NW;
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Dr Alex Reid           Occupational Health Physician, AMNCH Hospital;
Dr Lelia Thornton      Specialist in Public Health Medicine, HPSC (Chair); and,
Ms Aoibheann O’Malley  HPSC (administrative secretary).