THE GUIDELINES

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1. Introduction

1.1 These guidelines are intended for use in emergency medical settings where a patient first presents with an injury (including needlestick or other sharps injury, sexual exposure, human bite, exposure of broken skin or of mucous membranes) where there is a risk of transmission of infection, in particular bloodborne viruses (BBV). These guidelines are relevant to injuries occurring to members of the public in a community setting and also to injuries sustained occupationally (such as to healthcare workers (HCW) or members of the Garda).

1.2 The terms "recipient" and "source" will be used throughout these guidelines:
Recipient: the person who sustains the injury
Source: The source of the potentially infected material, e.g. the person on whom the sharp was used, the person who bites, or the source of the blood or body fluid.

1.3 The BBVs considered in these guidelines are hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).

2. Initial assessment

See appendices 1-6:
- Patient management form
- Flow chart for management of injuries
- Algorithm for needlestick/sharps exposure
- Algorithm for mucous membrane exposure
- Algorithm for sexual exposure
- Algorithm for human bite exposure

Note: If the recipient is a healthcare worker (HCW), they should not manage the incident themselves. Another appropriate health professional should take over responsibility.

2.1 Urgent first aid treatment should be administered if required. Urgent assessment should be made regarding the need for HIV post-exposure prophylaxis (PEP). (See appendix 7 for HIV PEP)

2.2 Initial wound care

2.2.1 For contaminated needlestick injuries, sharps injuries or human bites:
Encourage the wound to bleed.
The recipient should not suck the injury site.
Irrigate the wound thoroughly with running water and soap. A nailbrush should not be used.
Dry, and cover the wound with a waterproof dressing if necessary.

2.2.2 For contamination of the conjunctiva or mucous membranes:
Immediately irrigate the area with copious amounts of normal saline or water. For a splash to the eye, this irrigation should be done before and after removal of contact lenses.

2.2.3 Full clinical assessment should be carried out
Examine for signs of infection, foreign bodies, damage to blood vessels, nerves, tendons, joints or bones (this is particularly important for human bites).
Assess whether the injury has broken the skin.

2.3 Complete the Patient Management Form (appendix 1):
- Document who was injured, how, when and the type of injury.
- Record vaccination status (hepatitis B, tetanus), underlying medical conditions including immunosuppression, medications, and allergies.

2.4 Decide if a significant exposure has occurred.

2.4.1 Assessment of significance of exposure

A significant exposure involves both a high-risk material and a significant injury.

2.4.2 High-risk materials (i.e. significant risk of transmission of BBVs):

Blood, body fluids containing visible blood, semen and vaginal secretions represent a risk of transmission of HBV, HCV or HIV, if the source is infected.[1]
(See appendices 21-26 for information about HBV, HCV and HIV)

Outside the body, HCV and HIV significantly decline in infectivity within a few hours. HBV can remain infectious for a week or more.

2.4.3 Low-risk materials (i.e. no significant risk of transmission of BBVs):

Contamination with faeces, nasal secretions, saliva*, sputum, sweat, tears, urine, and vomitus, unless they contain blood, represents a negligible risk of HBV, HCV or HIV transmission.

*If the injury is serious (e.g. extensive or deep tissue bite) HBV transmission may be a risk, even if there is no visible blood in the saliva. In this situation, HBV vaccine with or without HBIG may be indicated (see appendix 6 for algorithm for human bite exposure, appendix 8 for HBV PEP and appendix 18 for discussion of human bite injuries and saliva).

2.4.4 Other materials:

The risk of transmission of BBVs from exposure (e.g. splash) to the following fluids is unknown: Cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, breast milk and amniotic fluid. If the source has a high blood viral load, the viral load in other fluids, such as amniotic fluid, is also likely to be high.

2.4.5 Significant injuries include:

- Percutaneous injuries
- Human bites which break the skin, i.e. involving a breach of the epidermis, not just bruising or indentation of the skin (see appendix 18 for discussion of human bite injuries).
- Exposure of broken skin to blood or body fluids.
- Exposure of mucous membranes (including the eye) to blood or body fluids, e.g. by splashing.
- Sexual exposure (unprotected).

2.4.6 Non-significant injuries include:

- Superficial graze not breaking the skin.
- Exposure of intact, undamaged skin to blood or body fluids.
- Exposure to sterile or uncontaminated sharps.

2.4.7 Non-significant exposure

If the incident involves exposure to a low-risk material or a non-significant injury, no further testing or examination is required. **The patient should be reassured and discharged.** The patient should be given an information leaflet (appendix 27) and a discharge letter (appendix 35) to give to their GP, indicating that no significant exposure occurred, outlining any testing or treatment carried out, and indicating if any follow-on care is needed, such as HBV vaccination or wound care.

The following sections relate only to significant exposures

The remainder of the guidelines relate only to significant exposures

3. Assessing the risk of transmission of infection

3.1 Risk assessment - bloodborne viruses

(See appendices 21 to 26 for information about HBV, HCV and HIV)
Where a significant exposure has occurred, a risk assessment should be carried out to estimate the risks of transmission of HBV, HCV and HIV. This should take account of the following:

- The infectious status (HBV, HCV, HIV), if known, of the source.
- If the source is unknown or refuses testing, information may be available about whether the source has risk factors for BBVs (such as: people who inject drugs (PWID), prisoner, commercial sex worker (CSW), men who have sex with men (MSM), born in an endemic country (see appendices 22, 24, 26 for maps), sexual partner with a risk factor).
- Knowledge of the background prevalence of BBVs in the population and in risk groups may be helpful. Knowledge of the prevalence of PWID in the local population may also be helpful.
- The nature of the exposure, including the type of injury and the type of material involved.
- The HBV vaccination status of the recipient.
- The infectious status (HBV, HCV, HIV), if known, of the recipient.

3.2 Factors increasing the risk of transmission of BBV infection:

- Deep percutaneous injuries
- Visible blood on injuring device
- Hollow needle from source patient artery or vein
- Large bore needle
- Visible blood (of the biter) in mouth of biter
- Blood containing a high viral load of HBV, HCV or HIV
- The presence of HBeAg in source
- Higher volume of material
- Personal protective equipment, e.g. gloves, goggles, not worn (HCWs)
- Sexual exposure due to aggravated sexual intercourse
- Sexual exposure in men who have sex with men
- Sexual exposure in the presence of concurrent STIs.

3.3 Investigation of source

(See Appendix 29: Checklist: Testing of source person or recipient)

In the case of a significant exposure, every effort should be made to ascertain the HBV, HCV and HIV status of the source.

3.3.1 If the source is known

Where the incident occurred in a hospital and the source is a patient in the hospital, the consultation with the source should be carried out by a member of his/her treating team. When the incident occurred outside the hospital, the consultation and blood testing of the source should be carried out by another suitably qualified health professional e.g. primary care provider, prison healthcare team.

Explain to the source in simple language exactly what has happened.

Ask if they are known to be infected with HBV, HCV or HIV.

Ask if they have risk factors for BBVs, e.g. PWID, CSW, MSM, born in an endemic country (see maps in appendices 22, 24, 26), sexual partner with a risk factor.

- If their BBV status is unknown, request permission from the source, either directly or through their doctor, to take a blood sample for testing for HBV (hepatitis B surface antigen - HBsAg), HCV (antibody to hepatitis C - anti-HCV) and HIV (HIV antigen/antibody - Ag/Ab).
- If the recipient is known to be HBV immune, then the source need not be tested for HBV.
- If the source is HBsAg positive, then hepatitis B e-antigen (HBeAg), antibody to HBeAg (anti-HBe) and HBV viral load should be carried out to estimate the risk of transmission.
- If the source is anti-HCV positive, a HCV ribonucleic acid (RNA) test, and viral load if RNA positive, should be carried out as soon as possible.
- If the source is HIV Ag/Ab positive, a HIV viral load should be done to estimate the risk of transmission.

Where the source is considered likely to be in the window period for a BBV, they should be advised to have repeat testing at 3 months. In such situations, discuss emergency management of the recipient with a HIV/ID specialist, see section 3.4.

Informed consent must be obtained for this testing (see below). Explain why the tests are being done, exactly what tests will be carried out, and the implications for them if a test result is positive. The source must be informed that they are free to refuse to provide a sample or to have this testing carried out. An information leaflet should be provided (appendix 30). If the source refuses consent, this fact should be recorded by the health professional.

The source should be told that the result will be provided by the testing laboratory to their nominated doctor (general practitioner (GP) and/or consultant) and that the recipient will also be told the result. The confidential nature of the testing process should be emphasised. If, as a result of the outcome of this testing, follow-up care is necessary for the source person (e.g. referral to an infectious diseases consultant), this is the responsibility of the hospital consultant if the source is a patient in hospital, or the source person's GP. If the source is not registered with a GP, then it is the responsibility of the doctor who ordered the test to ensure that appropriate follow-up is arranged.

The laboratory should be advised to expect an urgent blood sample and asked to provide the results as soon as possible. The sample may need to be sent by courier. The sample (10mls of clotted blood) should be marked **"Urgent. Possible bloodborne virus exposure – source"** and should indicate to whom results should be sent with contact details clearly stated. If an RNA test is required, arrangements should be made with the testing laboratory. A second blood sample will be required. Results of source blood tests should be available from the laboratory to allow a decision to be made as soon as possible. In some situations, the urgency with which the blood test is taken and sent to the laboratory is dictated by the circumstances and risk assessment. If a delay is likely and the source is high-risk, consider whether HIV PEP should be started while waiting for the HIV test result. The laboratory should be asked to retain part of the sample for storage for two years.

3.3.2 Informed consent

The components of a legally valid consent are that it must be given by a person with the capacity to consent, it must be given voluntarily and not under any duress or coercion and the person must be given sufficient information to allow them to make a decision. Fully informed consent requires a clinician to disclose to the person the reason for the test or procedure, the benefits and all of the material risks associated with the test or procedure together with the consequences of having or not having the test or procedure and the person understands the information that has been provided, and has been given an opportunity to consider and weigh it up in order to make a decision. Informed consent for HIV testing does not need to include written consent.

3.3.3 If the source is unknown or known but refuses testing

Assess the risk based on any available information, including the circumstances of the exposure and the epidemiological likelihood of BBV in the source (prevalence of BBVs in the population, known risk environment such as prison, or risk behaviours if source is known). The use of HIV PEP is unlikely to be justified in the majority of such exposures but HBV immunisation may be appropriate, see appendix 7.

Where the source is deemed to be high risk for a BBV and there is likely to be a delay in obtaining consent or results, initiation of HBV immunisation and HIV PEP may be indicated while further information is being obtained. See 4.1.

Consent is required by a clinician who treats, examines, tests or operates on a person and to do so without that person's consent would result in that clinician/ nurse committing an unlawful act. There are exceptions to this principle, usually in exceptional or emergency cases where the treatment is necessary to save the life of or preserve the health of a person. To ensure the greatest level of protection to persons taking samples, where consent is not forthcoming, an application to Court should be made. This can be made at very short notice.

If a blood sample from the source is available to be tested (e.g. it may have been taken for another purpose previously), is it acceptable to test it for bloodborne viruses, even if the source has refused consent or is unconscious or deceased?

Under Irish law, informed consent to testing should be obtained from the source prior to carrying out the test. Where this is not available, the permission of the Court to test should be obtained, save in exceptional circumstances where the treatment is necessary to save the life of or preserve the health of a person and there would not be sufficient time in which to make an application to Court. An application can be made to Court at very short notice.

If a decision is taken to test the sample, the source person should be informed unless to do so would, in the doctor's opinion, be harmful to the individual's mental or physical health.

If the source person is unconscious, is it acceptable to take a blood sample from them for testing?

Under Irish law, informed consent to testing should be obtained from the source prior to carrying out the test. Where this is not available, the permission of the Court to test should be obtained, save in exceptional circumstances where the treatment is necessary to save the life of or preserve the health of a person and there would not be sufficient time in which to make an application to Court. An application can be made to Court at very short notice.

If a sample is taken from an unconscious person, they should be informed as soon as they regain consciousness unless to do so would, in the doctor's opinion, be harmful to the individual's mental or physical health.

If the source person is deceased, is it acceptable to take a blood sample from them for testing?

The position in relation to taking a sample from a deceased person is unclear. If consent from the next of kin is not forthcoming and in order to ensure the greatest level of protection to the person taking a sample, an application should be made to the Court for permission to take the sample. This can be made at very short notice

3.4 Assessing the recipient

(See Appendix 29: Checklist: Testing of source person or recipient)

In the case of a significant exposure:

Obtain details of HBV immunisation status if possible, including number of doses, dates, post-vaccination anti-HBs level.

Ask if they have a HBV vaccination record card (HCWs, Garda and prison personnel are likely to have these).

Ask if they know their infectious status in relation to HBV, HCV or HIV.

Explain why the tests are being done, exactly what tests will be carried out, and the implications for them if a test result is positive.

Informed consent should be obtained and documented before testing is carried out (see 3.3.2). An information leaflet should be provided (appendix 28).

Request HBsAg, antibody to hepatitis B core antigen (anti-HBc), anti-HCV and HIV Ag/Ab. Where there has been sexual exposure request syphilis serology. If the recipient is documented to have an adequate response to HBV vaccine, it is not necessary to test for HBsAg. **See appendix 9 for testing schedule**, including baseline tests and follow-up testing as indicated. See appendix 10 for interpretation of HBV results.

If the recipient was previously vaccinated but the anti-HBs level post-vaccination is unknown, **and** hepatitis B immunoglobulin (HBIG) administration (in addition to vaccine booster) is now being considered, it may be helpful to do an antibody to HBsAg (anti-HBs) test. If the anti-HBs level is ≥10mIU/ml, HBIG is not indicated. If anti-HBs is <10mIU/ml, the result is of no assistance in making the decision about administering HBIG, as antibody level declines over time after vaccination but the person may still be protected due to immune memory. In this situation, assessment of other factors such as the severity of the exposure may assist in making the decision about HBIG (see appendix 8).

Some of the sample should be retained in the laboratory for storage for two years.

If the source tests negative for HBV, HCV and HIV, the recipient can be reassured and testing of the recipient is not required. Where the source tests negative for blood borne viruses but is considered high risk and within the window period, discuss further management with a HIV/ID specialist as soon as possible, ideally within 72 hours. HIV PEP may be indicated in exceptional circumstances.

4. Treatment of recipient following a significant exposure

4.1 The actions to be taken will depend on the outcome of the risk assessment.

If the source blood test results are available and indicate that the source is negative for HBsAg, anti-HCV and HIV Ag/Ab, and the investigation has identified no obvious risk factors for BBVs in the source (i.e. unlikely that source is in window period for infection), then no further follow-up of the recipient is required. They can be reassured and discharged.

However, even if it is deemed that there has been no risk from the current incident, if the recipient has not completed a course of HBV vaccination and may be at risk of HBV infection in the future, they should be encouraged to be vaccinated.

Where the source tests negative for blood borne viruses but is considered high risk and within the window period, discuss further management with a HIV/ID specialist as soon as possible, ideally within 72 hours. HIV PEP may be indicated in exceptional circumstances.

Testing of the source may not be possible or may be delayed. Some actions (below) may need to be taken immediately and without having the results of source testing.

The following actions should be considered when the source is infected or potentially infected with a BBV:

4.2 Hepatitis B post-exposure prophylaxis

Post-exposure, HBV vaccine is highly effective at preventing infection, provided that the vaccine is administered preferably within 48 hours but up to 7 days post-exposure. Due to the safety profile of HBV vaccine and the infectivity of HBV, a low threshold for initiating HBV vaccination is recommended (appendices 8 and 11 – HBV PEP and Hepatitis B vaccine).[2]
In general, HBV vaccination should be offered to all patients who have had a significant exposure, unless they are already immune due to vaccination or past infection.
The first dose of vaccine should be given in the health care setting where the person first presents. Give the patient a HBV vaccination record card with the first dose entered (appendix 12). Arrangements should be made for further doses of vaccine to be delivered either by the GP, occupational health service, STI/GUM clinic or infectious diseases clinic as appropriate. If the GP has any queries with regard to such follow-up, they should seek advice from their department of public health or infectious diseases service.

HBIG, in addition to HBV vaccine, may be used in limited circumstances to confer passive immunity after exposure to HBV (appendix 13). HBIG provides short-term protection (3-6 months). HBIG should generally only be given to non-immune patients who have had a significant exposure to a known HBsAg positive patient or to a known non-responder to vaccine who has had exposure to a HBsAg positive source or to an unknown source, following a risk assessment (appendix 8). HBIG should ideally be given within 48 hours of exposure but not later than 1 week after exposure.

The recipient should be tested for HBsAg at baseline, 6 weeks and 3 months (appendix 9).

If the recipient was previously vaccinated, with a documented post-vaccination anti-HBs level of ≥10mIU/ml, they are likely to have long-term protection against HBV infection. No further action is required from the point of view of HBV PEP and no follow-up testing is required (appendix 8).

4.3 Hepatitis C

Currently there is no recommended post-exposure prophylaxis for HCV.[3] However, treatment of early infection has been shown to be successful, therefore follow-up monitoring for evidence of HCV infection should be carried out (see appendix 14 for treatment of acute hepatitis C).

If a significant risk of exposure to HCV has occurred, i.e. the source is known or likely to be HCV positive, testing of the recipient for HCV Ag or RNA, and for anti-HCV should be carried out at 6 weeks and 3 months (appendix 9). There is limited data on the performance of HCV Ag testing in the setting of acute HCV infection. It is recommended that you discuss with your local laboratory and ensure that they are aware of the clinical scenario. If the recipient HCV Ag or RNA test is positive, the patient should be referred immediately to an appropriate specialist for assessment.

4.4 HIV post-exposure prophylaxis
(See appendix 7 for detailed protocol for HIV PEP)

HIV PEP should only be considered in patients who present **within 72 hours** with a significant exposure to either a known HIV positive person or a suspected high-risk source, where the overall risk of transmission is >1:1000 (see appendix 7 Table 2).

PEP should not be offered where testing has shown that the source is HIV negative, or if the risk assessment has concluded that HIV infection of the source is unlikely, where the overall risk of transmission is >1:1000 (see appendix 7 Table 2).

If the HIV status of the source is unknown, a careful risk assessment should be carried out. PEP is unlikely to be justified in the majority of such exposures.[4]

If the source is known to be HIV infected and the exposure is significant, see Table 3 Appendix 7 for recommendations on HIV PEP. Where PEP is indicated it should be started as soon as possible, ideally within an hour of exposure.[4] PEP should not be offered if more than 72 hours has elapsed since the exposure. A 3-5 day starter pack of antiretroviral medications should be supplied to the patient. An urgent referral should be arranged to an appropriate clinician specialising in HIV treatment or a clinician with significant experience in managing HIV PEP. Ensure that the first appointment is scheduled before the finish of the PEP starter pack. An information leaflet should be given to the patient (appendix 31). All emergency departments and occupational health departments should have arrangements in place for timely access to starter packs of PEP. Where there is concern about information from the source in relation to HIV treatment or presence of resistance virus the source's HIV physician or a HIV specialist should be consulted as soon as possible, and within 72 hours. The total duration of HIV PEP is 28 days.

Local arrangements should be put in place so that relevant information on the source can be made available to the clinician caring for the recipient.

PEP should be discontinued immediately if a HIV test on the source is found to be negative (unless the risk assessment indicates that there is a high likelihood that the source is in the window period and on the advice of a HIV/ID specialist).

4.5 Tetanus

Depending on the circumstances of the injury, tetanus immunisation should be considered. See appendix 15 re risk assessment for the use of tetanus vaccine and tetanus immunoglobulin (TIG).

4.6 Antibiotic treatment

Prophylactic antibiotics are not routinely recommended for needlestick injuries, although each wound should be assessed individually. Antibiotic prophylaxis is indicated after human bites, especially to the hand (see appendices 6 and 18).

5. Specific injuries and settings

5.1 Occupational exposure

See appendices 3 and 4 for algorithms for management of needlestick and mucous membrane exposures, and appendix 17 for discussion of occupational exposure.

5.2 Sexual exposure

If a sexual assault has occurred, the recipient should be offered referral to the nearest sexual assault treatment unit (SATU) for further management.

In cases of sexual exposure which do not involve assault, the following actions should be taken in the emergency department:

- Assess the need for HIV PEP (see above and appendix 7)
- Offer HBV vaccination unless known to be immune. Consider HBIG (see appendix 8)
- Take blood for baseline BBV testing (see appendix 9), including syphilis
- Consider emergency contraception (appendix 16) and give information leaflet (appendix 32)
- Advise safe sex (i.e. condoms) for 3 months
- Arrange follow-up within 3-5 days in ID/genitourinary medicine (GUM) clinic or with other appropriate HIV treating clinician if HIV PEP starter pack commenced
- Give the recipient an information leaflet (appendix 33)
- Refer to sexually transmitted infection (STI)/GUM clinic in 2 weeks time (appendix 34)

See appendix 5 for algorithm for management of sexual exposure.

5.3 Human bites

Following a human bite, an individual risk assessment is required, taking account of the extent of the injury, the HBV immunisation status of the recipient and the BBV status of the source and the recipient. With the exception of a deep bite wound sustained from a source who is infected or has risk factors for HBV, in a recipient who is not HBV immune, the risk of BBV transmission is negligible. A recipient of a bite that breaches the skin but with no visible source blood does not require any follow-up from the point of view of HIV and HCV.

HBV vaccination should be advised for an unvaccinated recipient following a percutaneous or mucous membrane exposure to saliva from a source who is HBV infected or high-risk but of unknown sero-status (see appendix 8). HBIG may also be indicated, depending on the risk assessment, but generally only if the source is HBV positive. HIV PEP would almost never be indicated except in extreme circumstances.

See appendix 6 for algorithm for management of human bites and appendix 18 for a detailed discussion of the risks of human bites.

5.4 Community acquired needlestick injury

Injuries from discarded needles and syringes in public places create considerable anxiety regarding the possible transmission of bloodborne pathogens. While these injuries pose less of a risk than that resulting from a needlestick injury in health-care settings, the perception of risk often results in the necessity for evaluation, testing and counselling of the injured person.[2] Management of such injuries includes acute wound care and consideration of the need for prophylactic management, based on a detailed risk assessment.

HBV is the most stable of the major bloodborne viral pathogens and can survive in the environment for 1 week or longer. It is advisable to administer a full course of HBV vaccine to those susceptible to HBV infection. HBIG is not usually required unless the needle comes from a known HBV positive source and a risk assessment identifies a significant risk of HBV transmission (appendix 8). The likelihood of transmission of other bloodborne viruses such as HCV or HIV is very remote.[2]

In general PEP for HIV is not recommended but should be considered in high-risk situations – based on location (e.g. prisons) and likely source (e.g. PWID, insulin injection), the presence of fresh blood, the amount of blood, the type of needle involved (e.g. large bore, hollow), and depth of penetration.[5,6,7]

See appendix 3 for algorithm for needlestick/sharps exposure and appendix 19 for a detailed review of community needlestick injuries.

5.5 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 documentary evidence of immunity 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

1. Immediate wound hygiene should be carried out.
2. 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.
3. 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.

4. 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 bloodborne viruses. 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.
5. The use of information put on the On-Site Assessment Form must comply with data protection legislation.
6. Contact details of the responsible person (from the dental practice) both during and after hours must be made available to the appropriate unit.

5.6 Injury in primary care medical practice

The management of injuries in the primary care medical practice setting should be dealt with broadly along the same lines as in a dental practice. Where there is relevant expertise within a medical practice then it may be more appropriate to deal with the injury and follow-up within that practice.

6. Information and follow-up of recipient

6.1 Information

All recipients, whether or not the exposure is significant, should receive appropriate information. If no significant exposure has occurred, no follow-up is required and no precautions need be taken. The patient should be reassured, given an information leaflet and discharged (appendix 27).

If a significant exposure has occurred, the recipient should receive information about the level of risk, the testing required, the implications of a positive result, the implications of treatment, the precautions required and the arrangements for follow-up. An information leaflet should be given (appendix 28). If the recipient has particular concerns, formal counselling may be arranged.

6.2 Precautions

If a significant exposure has occurred, the recipient should be advised to take certain precautions, depending on the exposure and actions taken:

- Adopt safe sex practices (i.e. use condoms) for 3 months
- If planning to donate blood, tissue, breast milk, sperm or organs, the person should inform the relevant donation agency about the exposure incident and follow their recommendations
- Seek expert advice regarding pregnancy or breast-feeding
- In the absence of infection, healthcare and other workers need not be subject to any modification of their work practices
- No restrictions are necessary in relation to participation in contact sports
- Do not share toothbrushes, razors or needles

These precautions should be outlined in written form, e.g. a leaflet (appendix 28).

6.3 Follow-up

Where a significant exposure has occurred, follow-up may be required for the following:

- Blood tests and feedback of results
- Monitoring for clinical evidence of HBV, HCV or HIV infection. If evidence of infection occurs, an urgent referral should be made to an appropriate specialist.
- Completion of HBV vaccination course
- HIV PEP
- Ongoing counselling
- STI screen

Arrangements should be made for follow-up by the appropriate service and the recipient clearly advised about this. This will depend on the circumstances of the incident and the type of injury.

If the person has been started on HIV PEP, they should be monitored by a clinician specialising in HIV treatment or a clinician with significant experience in managing HIV PEP. An urgent referral should be made to ensure that they are first seen by this specialist before the starter pack of antiretroviral medication is finished. The referral pathway to this specialist should be clearly defined in each region and a written note given to the patient clearly stating where they should go (appendices 31, 34).

For recipients not prescribed HIV PEP:

- Healthcare staff who have received an occupational injury should be referred to their occupational health department for follow-up. If they have no occupational health department, they should go to their own GP for follow-up if required (appendix 35).
- Members of the public should be referred to their own GP, an STI/ID/GUM/SATU service or their own occupational health service (appendix 35).

7. Records/documentation

7.1 Patient management form

All parts of the patient management form should be completed (appendix 1) and the form retained in the service where the consultation took place.

7.2 Recording of medication

Details of all medications prescribed, administered and supplied (e.g. PEP, antibiotics, vaccines) should be recorded in the appropriate patient record (e.g. hospital chart, occupational health department medical record). For vaccines and immunoglobulin products, the batch number and expiry date should be recorded.

7.3 Notifiable diseases

HBV, HCV and HIV are notifiable diseases and should be notified by the attending doctor to the director of public health (DPH)/medical officer of health (MOH) (see appendix 36 re details of DPHs). A notification form may be downloaded from: http://www.hpsc.ie/hpsc/NotifiableDiseases/NotificationForms/

7.4 Occupational exposures

If the injury occurred in the workplace setting, the appropriate report forms should be completed and management informed.

If, as a result of a work related injury, the employee is absent from work for more than 3 consecutive days, the employer must report the injury using the IR1 form available from the Health and Safety Authority (HSA).

Under the Safety, Health and Welfare at Work (Biological Agents) Regulations 1994 and amendment Regulations 1998, the employer must inform the HSA of any work related accident or incident which may have resulted in the release of a biological agent and which could cause severe human infection/human illness e.g. a percutaneous injury with a contaminated sharp where the source patient is known or found to be positive for hepatitis B, hepatitis C or HIV. The IR3 Report of Dangerous Occurrence Form may be used to report the incident to the HSA, available at www.hsa.ie.

7.5 Risk management forms for hospital

Where the injury relates to an incident that occurred in a hospital setting, appropriate risk management forms should be completed.

References

(Additional references may be found at the end of some appendices)

1. Centers for Disease Control and Prevention. Updated U.S. Public health service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for post-exposure prophylaxis. MMWR June 29, 2001 / 50(RR11);1-42

2. National Immunisation Advisory Committee. Immunisation guidelines for Ireland. RCPI 2013 Available at http://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/

3. Henderson DK. Managing occupational risks for hepatitis C transmission in the healthcare setting. Clin Microbiol Rev 2003;16(3):546-68

4. Cresswell F, Waters L, Briggs E, Fox J, Harbottle J, Hawkins D, Murchie M, Radcliffe K, Rafferty P, Rodger A, Fisher M. UK guideline for the use of HIV Post-Exposure Prophylaxis Following Sexual Exposure, 2015. International Journal of STD & AIDS. 2016 Apr 19. pii: 0956462416641813. [Epub ahead of print].

5. O'Leary FM, Green TC. Community acquired needlestick injuries in non-health care workers presenting to an urban emergency department. Emergency Medicine 2003;15:434-40.

6. Makwana N, Riordan FA. Prospective study of community needlestick injuries. Arch Dis Child 2005;90:523-4.

7. Canadian Paediatric Society. Needlestick injuries in the community. Position statement (ID 2008-01). Paediatr Child Health 2008;13:205-10.

Glossary of abbreviations and terms

Abbreviations

Ab	Antibody
Ag	Antigen
AIDS	Acquired Immunodeficiency Syndrome
ALT	Alanine aminotransferase
Anti-HBc	Antibody to hepatitis B core antigen
Anti-HBe	Antibody to hepatitis B e antigen
Anti-HBs	Antibody to hepatitis B surface antigen
Anti-HCV	Antibody to hepatitis C virus
BBV	Bloodborne virus. e.g. HIV, HBV, HCV
CANSI	Community acquired needlestick injury
CDC	Centers for Disease Control and Prevention (Atlanta, USA)
CSW	Commercial sex worker
DTaP	Diphtheria, tetanus and acellular pertussis vaccine
DPH	Director of public health
DNA	Deoxyribonucleic acid
ECDC	European Centre for Disease Prevention and Control
EIA	Enzyme-linked immunoassay
EPP	Exposure-prone procedure
EU	European Union
GP	General practitioner
GUM	Genitourinary medicine
HAART	Highly active antiretroviral therapy
HBeAg	Hepatitis B e antigen
HBIG	Hepatitis B specific immunoglobulin
HBsAg	Hepatitis B surface antigen
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HCW	Healthcare worker
Hib	Haemophilus influenzae b
HIV	Human immunodeficiency virus
HPSC	Health Protection Surveillance Centre
HSE	Health Service Executive
IBTS	Irish Blood Transfusion Service
ICGP	Irish College of General Practitioners
ID	Infectious diseases
IPV	Inactivated polio virus vaccine
IM	Intramuscular
IU	International units
MOH	Medical officer of health
MSM	Men who have sex with men
n/a	not available; not applicable

NIAC	National Immunisation Advisory Committee
NICE	National Institute for Health and Clinical Excellence
NVRL	National Virus Reference Laboratory
OHD	Occupational Health Department
OHP	Occupational Health Physician
PCR	Polymerase chain reaction
PEP	Post-exposure prophylaxis
PEPSE	Post-exposure prophylaxis for sexual exposure
PWID	People/person who injects drugs
RCPI	Royal College of Physicians of Ireland
RNA	Ribonucleic acid
ROI	Republic of Ireland
SATU	Sexual Assault Treatment Unit
STD	Sexually transmitted disease
STI	Sexually transmitted infection
SVR	Sustained virological response
Td	Tetanus, low-dose diphtheria
Tdap	Tetanus, low dose diphtheria and low-dose acellular pertussis vaccine
TIG	Tetanus immunoglobulin
UNAIDS	Joint United Nations Programme on HIV/AIDS
UPSI	Unprotected sexual intercourse
WHO	World Health Organization

Terms

- Endemic: The constant presence of a disease or infectious agent within a given geographic area or population group; may also refer to the usual prevalence of a given disease within such area or group.
- Exposure incident: A specific exposure to the eye, mouth, other mucous membrane, nonintact skin, or parenteral exposure to blood or other potentially infectious materials. Examples of an exposure incident include blood spattering into the eyes, splashing into the mouth or a puncture by a blood-contaminated needle.
- Fight bite: A fight bite or closed fist injury is a laceration to the "knuckle" (MCP joint) of the hand of someone who punches another person in the mouth.
- Parenteral: Piercing the skin barrier or mucous membranes e.g. by needlestick.
- Percutaneous: An exposure through the skin (e.g. a needlestick or cut with a sharp object) or contact of non-intact skin (e.g. exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or other body fluids that are potentially infectious.
- Post-exposure prophylaxis (PEP): The administration of a drug to prevent the development of an infection after the patient has been exposed to the infection, e.g. HIV PEP involves administration of antiretroviral drugs to HIV-negative persons who have been exposed to HIV in an effort to prevent establishment of infection. HBV PEP involves the administration of hepatitis B vaccine and/or hepatitis B specific immunoglobulin after exposure.
- Recipient: The person who sustains the injury. In the case of a bloodborne virus exposure incident, the recipient is exposed to blood or body fluids of someone else, who is known as the source.
- Risk factors: An aspect of personal behaviour or lifestyle, an environmental exposure, or an inborn or inherited characteristic that is associated with an increased occurrence of disease.
- Seroprevalence: The level of a pathogen in a population, as measured in blood serum.
- Sharps: Any items that have the potential to puncture the skin and inoculate the recipient with infectious material.
- Source individual: The source of the potentially infectious material, e.g. the person on whom the sharp was used, the person who bites, or the source of the blood or body fluid.
- Standard Precautions: Standard Precautions are the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where healthcare is delivered. Standard Precautions include: 1) hand hygiene, 2) use of personal protective equipment (e.g. gloves, gowns, masks), 3) safe injection practices, 4) safe handling of potentially contaminated equipment or surfaces in the patient environment, and 5) respiratory hygiene/cough etiquette.
- Sustained virological response (SVR) (for hepatitis C treatment): The absence of detectable hepatitis C RNA in the serum as shown by a qualitative hepatitis C RNA assay with lower limit of detection of 50 IU/ml or less at 24 weeks after the end of treatment.
- Toxoid: is a modified bacterial toxin that has been rendered non-toxic but has the ability to stimulate the formation of antitoxin.
- Window period: The time interval after infection during which serological assays for antigen and/or antibody are negative.