NHS
Greater Glasgow and Clyde

MANAGEMENT OF OCCUPATIONAL AND NON-OCCUPATIONAL EXPOSURES TO BLOODBORNE VIRUSES

Including needlestick injuries & sexual exposures

October 2007

This guideline and supporting documentation can be downloaded from www.nhsggc.org.uk/phpu

This document replaces existing guidance for the management of needlestick and similar injuries issued by NHS Greater Glasgow and NHS Argyll and Clyde

CONTENTS

Section 1: General information

1.1. Introduction

The principal aims of this guideline are:

- To update and bring together existing guidance for the management of needlestick and similar injuries (issued by the former NHS Greater Glasgow and NHS Argyll and Clyde Boards) into a single NHS Greater Glasgow and Clyde guideline.
- To add guidance for the management of sexual exposures to bloodborne viruses (BBVs), including the use of post-exposure prophylaxis for HIV following sexual exposure.

In addition to the above, the guideline now contains a 'common scenarios and frequently asked questions' section, and a source patient assessment tool to be used following needlestick or similar injuries.

The guideline and supporting documentation is also available at www.nhsggc.org.uk/phpu

1.1.1. Needlestick and similar injuries in health care workers

This guideline refers to the following injuries or exposures:

- Percutaneous injury from needles or sharp objects that have been in contact with blood or high-risk body fluids*.
- Splashing of blood or high-risk body fluid* on skin that is broken, abraded, chapped, or has dermatitis or open sores.
- Contamination of eyes, nose or mouth with blood or high-risk body fluids*.
- A human bite that breaks the skin**.

*See section 2.9 'Assessing the injury' for definitions of high-risk and low-risk body fluids.

**Guidance on how to manage human bite injuries can be found in section 4.1.

Because of the risks of bloodborne diseases caused by hepatitis B virus (HBV), human immunodeficiency virus (HIV), hepatitis C virus (HCV), and other agents, it is necessary for all health care workers (HCWs) to take precautions to protect themselves from contact with blood and other high-risk body fluids. In particular, HCWs should take action to prevent needlestick and the other injuries detailed above. Such injuries cause considerable concern and uncertainty among those injured and their families.

For HBV there is effective vaccination; there is also post exposure prophylaxis (vaccination +/- immunoglobulin) for those who are not vaccinated. For HIV there is no vaccine or cure yet available; however, there is post-exposure prophylaxis (PEP) – immediate action is required. For HCV there is

no vaccine or post-exposure prophylaxis currently available. There are effective treatments, however, and it is therefore important that those exposed receive appropriate follow-up and monitoring so that treatment can be initiated should they become infected.

Testing source patients for HBV, HCV and HIV is the most effective way of providing reassurance to those injured, because the vast majority of patients will not be infected. In practice, there has been some reluctance to seek patients' consent to be tested, yet patients have usually been found willing to co-operate if approached in a sensitive manner.

In the event of a needlestick or similar injury occurring, it is important for all staff to know:

- What action to take.
- Who has responsibility to ensure proper assessment.
- Where to go for treatment of the injury and follow-up.
- How to report the incident so that systems can be revised and future injuries reduced or avoided.

Many needlestick and similar injuries can be prevented if proper care is taken and appropriate prevention strategies are adopted by both individuals and health care institutions.

1.1.2. Needlestick and similar injuries in other occupational groups and the public

These guidelines have been written from a health care perspective. However social care workers, the police, cleansing workers, and members of the general public, when injured, can also use these guidelines. These individuals will be less likely to have been immunised against HBV. The risk of BBV transmission from a needle discovered in the street or the park is very low. To date, there have been no published reports in the UK of HIV or HCV infection being acquired following injury with such needles. Estimates of the risk of BBV transmission following needlestick with a used needle from an injecting drug user are given in section 1.2. Advice on how to manage injuries caused by a needle discovered in the street or park can be found in section 4.1.

1.1.3. Post-exposure prophylaxis for BBVs following sexual exposure

For the first time, these guidelines contain advice on the assessment and management of individuals who present following possible sexual exposure to BBVs. In addition to assessing the requirement for post-exposure prophylaxis for HIV in these individuals, the need for hepatitis B vaccination (+/- immunoglobulin) and hepatitis C follow-up should be considered. All those presenting for PEP should also be screened for other sexually transmitted infections after an appropriate time interval.

1.2. What is the risk of infection after exposure?

1.2.1. Following needlestick or similar injury from known positive source[1]

HBV: Health care workers who have received hepatitis B vaccine and have developed immunity to the virus are at extremely low risk of infection. For the unvaccinated person, the risk from a single needlestick or a cut exposure to HBV-infected blood ranges from 6-30% and depends on the viral load and hepatitis B e antigen (HBeAg) status of the source individual.

HCV: Based on limited studies, the average risk of infection after a needlestick or cut exposure to HCV-infected blood (i.e. HCV PCR +ve blood) is approximately 1.8%. The risk following a blood splash is unknown, but is believed to be very small.

HIV: The average risk of HIV infection after a needlestick or cut exposure to HIV-infected blood is 0.3%, i.e. 1 in 300. The risk after exposure of the eye, nose or mouth to HIV-infected blood is estimated to be, on average 0.1% or 1 in 1000. The risk after exposure of non-intact skin to HIV-infected blood is estimated to be less than 0.1%.

1.2.2. Following needlestick injury with a used needle from an injecting drug user (IDU)

The risk of BBV transmission following a percutaneous injury involving a used needle from an IDU is dependent on the risk that the source is HIV, HCV or HBV positive, and the time that has elapsed since the needle was used. Estimates of the risks associated with such injuries in Scotland are given in the table below[2]

Infections	Probability of infection in the IDU population in Scotland	Risk of transmission if exposed[i]	**Estimated risk following exposure to needle**		
			Very short interval after use[ii] (seconds/minutes)	**Intermediate interval after use[iii] (minutes/hours)**	**Long interval after use[iii] (hours/days)**
HIV	1/100	1/300	**1/30,000**	**1/3,000,000**	**1/30,000,000**
HBV	1/33	1/3 (eAg+ve) – 1/17 (eAg-ve)	**1/100 - 1/560**	**1/1,000 - 1/5,600**	**1/10,000 - 1/56,000**
HCV	1/3	1/50	**1/150**	**1/15,000**	**1/150,000**

[i] The risk of transmission following percutaneous injury from an infected source

[ii] Probability of infection in the IDU population in Scotland x Risk of transmission if exposed.

[iii] Adjusted by an estimated factor of 1/10 (HBV) and 1/100 (HIV and HCV) for an intermediate interval scenario and of 1/100 (HBV) and 1/1,000 (HIV and HCV) for a long interval scenario to account for the reduced viability of the particular virus outside the body and how recently the needle has been used

[1] Exposure to blood: what health-care personnel need to know. http://www.cdc.gov/ncidod/dhqp/pdf/bbp/Exp_to_Blood.pdf

[2] Health Protection Scotland (unpublished data) 2005.

The prevalence of HIV and HBV infection in Glasgow IDUs is similar to that quoted for Scotland in the table above. However, the prevalence rate of HCV infection in Glasgow IDUs is higher than in Scotland as a whole. In 2004 the prevalence of HCV among IDUs in Glasgow was 64%[1] (HCV antibody positive). It is estimated that approximately 75% of these would be HCV PCR +ve.

1.2.3. Following sexual exposure

HIV: The risk of an individual acquiring HIV following sexual exposure is dependant upon the risk that the source is HIV positive and the risk of the exposure. Examples of the estimated risk related to different exposures are given in the table below:

Population group and type of exposure	Probability of HIV infection in population group	Risk of transmission if source HIV +ve[iii]	Estimated risk of HIV transmission if source HIV status unknown
Unprotected receptive anal intercourse from Glasgow-resident MSM[i]	1 / 24[ii]	1 / 33	1 / 792
Unprotected insertive anal intercourse from Glasgow-resident MSM[i]	1 / 24 [ii]	1 / 1667	1 / 40,000
Unprotected receptive vaginal intercourse with Glasgow heterosexual man	1 / 500 [ii]	1 / 500	1 / 250,000
Unprotected insertive vaginal intercourse with Glasgow heterosexual female	1 / 1000[ii]	1 / 1000	1 / 1000,000
Unprotected receptive anal intercourse from London-resident MSM[i]	1 / 5 [ii]	1 / 33	1 / 165

[i] Men who have sex with men

[ii] Based on unlinked anonymous testing of GUM clinic attendees. HPA. 2005. Note: figures quoted are based on overall HIV prevalence rates for clinic attendees. Country of origin should also be considered when carrying out individual risk assessments as this may affect the probability of the source being HIV positive: see section 5.3.

[iii] Fisher M, Benn P, Evans B, Pozniak A, Jones M, MacLean S et al. UK Guideline for the use of post-exposure prophylaxis for HIV following sexual exposure. International Journal of STD and AIDS. 2006;17:81-92

HBV and HCV: The risk of HBV infection following sexual exposure with an infected person is significantly greater than the risk of transmission of HIV. There is a very small risk of people with diagnosed HCV infection transmitting infection to their sexual partners. Cohort studies of couples discordant for HCV have indicated an HCV incidence of 0 - 2 per 1000 years of sexual contact[2]. There is an increased risk of transmission of HCV infection in patients with HIV co-infection.

[1] Health Protection Scotland. Shooting Up: Infections among injecting drug users in the United Kingdom, an update: Oct 2006
[2] SIGN Guideline on the management of Hepatitis C. December 2006.

1.3. What should be done following exposure?

1.3.1. Following needlestick or similar injury in Health Care Worker

The Injured Person

When an incident occurs:

- Apply first aid (see section 2.1).
- Report to supervisor e.g. night coordinator, ward manager, consultant on call, or lead nurse.
- Go to Occupational Health Department (or Emergency Department if out of hours).
- Complete IR1 form

The Supervisor / Head of Department responsible for the injured person

- Ensure that first aid has been carried out.
- Refer the injured person to Occupational Health Dept (or Emergency Dept if out-of-hours).
- Ensure that source patient risk assessment is carried out – liaise with the clinical manager covering the area where the source blood / patient is located (see section 2.3). For injuries occurring in the primary care setting, where possible, liaise with the GP responsible for the source patient.
- Ensure that all steps are taken and follow-up is completed.
- Ensure that the incident is reported through the reporting system IR1 form.
- Investigate the cause of the injury.
- Adopt any appropriate preventative strategies, e.g. safe siting of sharps boxes or other measures that will reduce the likelihood of further injuries. Liaise with the infection control team if necessary.

1.3.2. Following needlestick or similar injury in a member of the public

Following an initial assessment to confirm that a significant injury has occurred (see section 2.9) the injured person should be advised to apply first aid (see section 2.1) and to attend the Emergency Department immediately for further assessment and management. If a significant injury has not been sustained then referral to the Emergency Department is not required, and the member of the public can be reassured.

1.3.3. Following sexual exposure

Individuals presenting during GU Medicine opening hours can be referred directly to the GU Medicine Department, Sandyford Initiative (contact professional helpline on 0141 211 8646, Monday to Friday 09:00-12:30 and 13:00 – 16:30). Individuals presenting outwith these hours should be referred to the Emergency Department and managed according to section 3 of these guidelines.

Section 2: Management of needlestick and similar injuries

2.1. First Aid

Make sure proper First Aid has been carried out:

- Encourage local bleeding of accidental puncture wounds by gentle squeezing.
  DO NOT SUCK THE AREA.

- Wash the affected area with soap and warm water.
  DO NOT SCRUB THE AREA.

- Treat mucosal surfaces such as mouth or conjunctiva by rinsing with warm water or saline.
  Water used for rinsing the mouth must not be swallowed.

Do not use bleach on the injury.

2.2. Establishing risk status of source

2.2.1. Known source

When the source patient can be identified, a source patient risk assessment should be carried out and testing offered. Guidance on approaching the source patient for risk assessment and testing is given in sections 2.4 and 2.5. The source patient risk assessment will provide the following information:

- Whether the patient is known to be positive for HIV, hepatitis B surface antigen (HBsAg) or hepatitis C (PCR positive).
- Whether the patient has been assessed as being 'high-risk' for bloodborne viruses.

Where necessary, further information regarding the risk status of the patient can be obtained through discussion with the person carrying out the risk assessment.

In addition to using the assessment tool, the following should be considered when assessing HBV risk:

- Individuals living in residential accommodation for those with learning difficulties are at high risk for hepatitis B infection unless previously immunised.
- Anyone from a highly endemic area is at high risk for hepatitis B infection unless previously immunised. Hepatitis B is highly endemic in all of Africa, some parts of South America, Alaska, northern Canada and parts of Greenland, eastern Europe, the eastern Mediterranean area, south-east Asia, China, and the Pacific Islands (except Australia, New Zealand and Japan). In most of these areas, 5 to 15% of the population are chronically infected carriers of HBV[1].

2.2.2. Unknown source

- In hospital, if it is not possible to identify which patient relates to a particular needle, a risk assessment should be carried out to determine the likelihood that the needle may have been used on a patient with a BBV infection.
- The risk of BBV transmission from a needle discovered in the street or the park is very low. To date, there have been no published reports in the UK of HIV or HCV infection acquired following injury with such needles. Estimates of the risk of BBV transmission following needlestick with a used needle from an injecting drug user are given in section 1.2. Advice on how to manage injuries caused by a needle discovered in the street or park can be found in section 4.1.

[1] World Health Organisation, Department of Communicable Disease Surveillance and Response. Hepatitis B. WHO 2002. http://www.who.int/csr/disease/hepatitis/HepatitisB_whocdscsrlyo2002_2.pdf

2.3. Responsibilities for source patient risk assessment and testing

The Clinical Manager covering the area where the source of blood is located should:

- Locate the source patient if possible.
- Arrange for a source patient risk assessment to be carried out **IMMEDIATELY** and for the source patient's informed consent to be sought for HIV, HBV and HCV testing.
  - The source patient risk assessment should be carried out by an experienced health care professional (e.g. senior nurse or doctor).
  - The injured health care worker should **not** carry out the source patient risk assessment.
  - For injuries occurring in the hospital setting:
    - The source patient risk assessment should not be carried out by the Occupational Health staff caring for the injured person.
    - Emergency department staff should not carry out source patient assessments for injuries occurring outwith the emergency department.
  - Outside of the hospital setting, the source patient risk assessment should be carried out by an experienced health care professional (e.g. a GP, dentist, or senior nurse), with advice being sought from Occupational Health where necessary.
- Inform the Occupational Health Department (or Emergency Department if out-of-hours) whether or not a source patient risk assessment has been arranged and provide them with contact details of the person carrying out the risk assessment.
- Inform the consultant / GP responsible for the source patient.

2.4. Source patient risk assessment, obtaining source blood, and managing the result

2.4.1. Source patient risk assessment

- Confirm details of the injury.
- Review case notes of the source patient to establish if there are any known risk factors for BBV, or if the source patient is known to have a BBV infection.
- Consult guidelines on approaching the source patient (see section 2.5) and carry out a source patient risk assessment. This can be done using the assessment tool provided (section 2.6). Copies of the assessment tool can be downloaded from www.nhsggc.org.uk/phpu
- Where possible, consult with the medical team / GP caring for the source patient to establish if they have any additional information regarding the possibility of BBV infection in the source patient.
- Ensure that the doctor or nurse responsible for managing the injured person is informed immediately of the result of the risk assessment. This can be done by telephone and / or by completing part B of the assessment tool; this can then be faxed to the Occupational Health or Emergency Department managing the injured person, or given to the injured staff member, IN A SEALED ENVELOPE, to be taken with them to Occupational Health or Emergency Department. Ensure your name and contact details are recorded on the form.
- Record in source patient's case notes that the assessment has been done along with your name and contact details. DO NOT record the outcome of the assessment or any details of risk factors in the source patient's notes.

2.4.2. Source patient testing

- Seek source patient's consent for testing.
- Inform source patient that anonymised result will be passed to the doctor / nurse managing the injured person to help with their management.
- If patient is agreeable following pre-test discussion (see section 2.5) take blood and send it for HIV, HBV and HCV testing. See section 5.1 for details on appropriate samples and arrangements for testing in Glasgow and Clyde. Phone the lab to inform them that a specimen is being sent and to organise to whom the results should be phoned. If the patient requests anonymous testing or if the request raises serious anxiety and the patient requires specialist counselling, refer to either the Bloodborne Virus Counselling Clinic, Brownlee Centre, or the Health Advisors at the Sandyford Initiative (see section 5.2 for contact details.).

2.4.3. Managing results of the source patient test

- It is the responsibility of the person carrying out the source patient risk assessment to ensure that the results of the source patient blood test are telephoned to the doctor or nurse managing the injured person.
- If the person carrying out the risk assessment is not going to be on duty when the test results become available, they must arrange for a named individual to take responsibility for receiving the results from the lab and passing them on to the nurse or doctor managing the injured person. They must inform the lab of the arrangements for reporting the test results.
- The person carrying out the source patient risk assessment must also ensure that the source patient is informed of their test result. This should be done within 24 hours of the test result becoming available. Again, if they are not going to be on duty when the result becomes available they must arrange for a named individual to take responsibility for this task.
- In the event of the source patient test result being positive, specialist advice should be sought from the Brownlee Centre or the Sandyford Initiative before approaching the patient. See section 5.2 for contact details.
- Ensure that contact details are taken for both the source patient and the injured person.

2.5. Guidelines for approaching the source patient (adult and child) for risk assessment and permission to test for HIV, HBV and HCV

This situation must be handled sensitively. The patient should not be approached by the injured person. There is no single approach that will cover every interview, but it is recommended that the following points be observed:

2.5.1. Risk assessment

- The discussion should take place in a location where proper privacy can be maintained.
- The patient should be informed that someone has been injured in an accident involving their blood / other body fluid. Injuries of this kind can cause considerable anxiety and worry to health care workers because infections such as hepatitis B, hepatitis C and HIV can be transmitted in this way.
- Patients should be asked if they would consent to answering some personal questions, which would help to address the concern. Emphasise that the questions are very personal and might very well not apply to them, but they are now asked routinely, for example, by the Blood Transfusion Service before accepting blood donations.
- If the patient agrees ask him/her the questions detailed on part A of the source patient assessment tool (see section 2.6).

2.5.2. Permission to test for HIV, Hepatitis B and Hepatitis C

- Unless there are reasons for not testing, all source patients should then be asked if they would be willing to allow a sample of their blood to be taken for testing for HIV, HBV and HCV, as a negative result gives most reassurance to the injured person. In asking this question it is important that undue pressure is not put on the patient. It should be made clear that the decision lies entirely with the patient. The outcome of the discussion should be recorded in the patient's notes. A refusal from the patient must not have an effect on the overall management of that patient and this must be explained clearly to the patient.
- Inform the source patient that anonymised test result will be passed to the doctor / nurse managing the person to help with their management.
- Negative test results will be available within 24 hours. However, if a result is not negative then the laboratory will need to carry out confirmatory testing. The results of confirmatory tests will not be available until the next working day.

- In the past, patients have expressed concerns that consenting to an HIV test might adversely affect their insurance policies. Patients can be advised that a negative HIV test will not affect their insurance premiums.
- If the request raises serious anxiety, or if the source patient requests anonymous testing (where a code is used on the request form and sample rather than the patient name), then refer to either the Bloodborne Virus Counselling Clinic at the Brownlee Centre, or the Health Advisors at the Sandyford Initiative (see section 5.2 for contact details).
- If the source patient agrees to testing but states that he/she does not wish to know the result of the test, then he/she should be referred for further specialist counselling to either the Brownlee Centre or the Sandyford Initiative. The blood test should **not** be taken until the patient has received specialist counselling.

2.5.3. Testing when the source patient is unable to give consent

When the source patient is dead, unconscious or unable to give informed consent for any other reason, testing should **not** be carried out without first seeking further advice from the on-call ID or GUM consultant (see section 5.2 for contact details). The patient's next of kin should not be asked to provide consent in this situation. The decision to start PEP should be made on the basis of a source patient risk assessment and **should not be delayed by waiting for a blood test**.

2.5.4. Risk assessment and testing when the source is a child.

For children and their parents / guardians all the above considerations including privacy must be maintained. To establish the risk status of the child, the questions in Part A of the source patient assessment tool (see section 2.6) should be asked, not only regarding the child, but also the mother. If the child is deemed to have sufficient understanding, whatever his/her age, an appropriate explanation should be given, and consent sought from the child. If the child refuses, blood should not be taken or tested. If the child consents, consent should also be sought from the child's parent / guardian. As the route of transmission to children is usually vertical (from mother to child), testing the child may be a surrogate for testing the mother, and so she should be made aware of this prior to testing. The reason for refusal of consent may be the distress of venepuncture. If this is the case, in young children with no history of foreign travel, blood transfusion or needlestick injury, the mother's blood may be tested instead of the child's.

2.6. Source patient assessment tool: Part A

CONFIDENTIAL

For use following needlestick or similar injury

The source patient risk assessment should be carried out by an experienced health care professional. Guidance to approaching the source patient for risk assessment and permission to test for HIV, HBV and HCV can be found in section 2 of the NHSGGC guideline 'Management of occupational and non-occupational exposures to bloodborne viruses'.

Blood borne virus status of source patient:

Question 1:	Is the source patient known to have HIV?	Yes ☐	No ☐
Question 2:	Is the source patient known to have Hepatitis B?	Yes ☐	No ☐
Question 3:	Is the source patient known to have Hepatitis C?	Yes ☐	No ☐

Risk status of source patient:

The source patient should be asked the following questions:

Question 4:	For men – Have you ever had sex with a man?	Yes ☐	No ☐
Question 5:	For women – Have you ever had sex with a man who has had sex with a man?	Yes ☐	No ☐
Question 6:	Have you ever paid for or sold sex?	Yes ☐	No ☐
Question 7:	Have you ever had sex with someone from a country outside of Western Europe, Australia, New Zealand, Canada or the USA?	Yes ☐	No ☐
Question 8:	Have you ever had a blood transfusion in a country outside of Western Europe, Australia, New Zealand, Canada or the USA?	Yes ☐	No ☐
Question 9:	Have you ever injected any kind of drugs?	Yes ☐	No ☐
Question 10:	Have you ever had sex with anyone who has injected drugs?	Yes ☐	No ☐

If the source patient answers 'yes' to any of the questions 4 to 10, then they should be considered HIGH RISK for bloodborne virus infection.

On completion of the risk assessment:

- Document the outcome of the assessment on Part B of the source patient risk assessment tool.
- Forward Part B to the Emergency Department or Occupational Health department responsible for managing the injured person. This can be done either by fax or by giving the form to the injured worker **in a sealed envelope** to take to the Emergency Department or Occupational Health.
- Record in source patient's case notes that assessment has been carried out. Do **not** record the outcome of the assessment in the patient's case notes.
- Record your name, grade and contact details in source patient's case notes.
- Destroy Part A of the source patient assessment tool (this page).

Copies of this assessment tool can be downloaded from www.nhsggc.org.uk/phpu

2.7. Source patient assessment tool: Part B

CONFIDENTIAL
For use following needlestick or similar injury

Name of injured person:_____ Location where injury took place:_____

Consultant / GP responsible for source patient:_____ Date:_____

The Occupational Health or Emergency Department responsible for managing the injured person should be contacted **promptly** with an initial verbal report of the source patient risk assessment and details of when the results of the source patient blood tests will be available. Part B of the source patient assessment tool should be completed and forwarded to the Occupational Health or Emergency Department as appropriate. This can be done by fax or by giving the form to the injured worker **in a sealed envelope** to take with them. Time is of the essence (PEP should ideally be started within one hour) and so referral of the injured person to the Occupational Health or Emergency Department should not be unduly delayed by waiting for completion of the source patient assessment.

SECTION 1: To be completed by the practitioner carrying out the source patient assessment

I have scrutinised the case notes of the identified source of the exposure Yes ☐ No ☐

I have spoken to the medical team responsible for the source patient Yes ☐ No ☐

I have spoken to the source patient and carried out a risk assessment Yes ☐ No ☐

If **no approach** has been made to the source patient please state reason(s) why this has not been done:

……

Outcome of risk assessment:

Has the source patient been diagnosed with a blood borne virus infection? Yes ☐ No ☐

(If yes, further information can be obtained by contacting the practitioner who carried out the source patient assessment).

Following discussion with the source patient' s medical team, does the patient have any possible syndrome related to HIV (could they have a new infection or acute infection)? Yes ☐ No ☐

Following the source patient risk assessment, is the patient HIGH RISK for blood borne virus infections? Yes ☐ No ☐
(If yes, further information can be obtained by contacting the practitioner who carried out the source patient assessment).

Has Occupational Health or Emergency Dept. been informed of the risk status of the source? Yes ☐ No ☐

Source patient blood test:

Has consent been sought and granted for source blood to be tested? Yes ☐ No ☐

Has the test been taken? Yes ☐ No ☐

When will the result be available? ……

Practitioner's name ……**Post** …….. **Page/ contact number**……..

SECTION 2: To be completed by doctor or nurse managing the injured person

Hep B vaccination given? Yes ☐ No ☐ Date ……..

HBIG given? Yes ☐ No ☐ Date ……..

PEP commenced? Yes ☐ No ☐ Date ……..

Has follow up been arranged? Yes ☐ No ☐ Details ……..

Name …… **Post** …… **Page / contact number** ……

Completed form should be filed in injured health care worker's Occupational Health Record. Patients managed in Emergency Department should be given form to take to follow-up appointment at Occupational Health or ID clinic.

Copies of this assessment tool can be downloaded from www.nhsggc.org.uk/phpu

2.8. Management of the injured person

Occupational Health / Emergency Department Staff:

- Patients should be treated and triaged as a priority, **within one hour if possible.**
- Ensure first aid has been carried out (see section 2.1).
- Confirm that a significant injury has occurred (see section 2.9). If not a significant injury, the injured person can be reassured. See section 4.1 for the management of human bite injuries.
- Check whether needle or source patient is known to have a BBV or known to be at high risk of infection with a BBV* (see section 2.2).
- Check if source patient has given consent for testing and if so, when results will be known*. Arrange for results to be phoned to a **named** doctor or nurse responsible for managing the injured person*. If the source patient HIV antibody test is negative, and PEP has been started, then the injured person must be contacted as soon as possible and advised to discontinue PEP.
- Assess the need for HIV PEP (see section 2.11). Remember, time is of the essence and therapy should be started as soon as possible following injury, ideally within one hour.
- Assess the need for hepatitis B vaccination +/- hepatitis B immunoglobulin (see section 2.10).
- Consider the need for hepatitis C follow-up (see section 2.12).
- Offer to take blood for storage (all significant injuries). Request form should state type of injury and 'blood for storage'. See section 5.1 for local lab information.
- If necessary, offer referral for specialist counselling / support. This can be provided by Occupational Health Department (for HCWs) or through the Bloodborne Virus Counselling Clinic, Brownlee Centre, Gartnavel General Hospital or Health Advisors at the Sandyford Initiative (see section 5.2 for contact details).

- Ensure all appropriate follow-up is arranged:
    - Appointment with ID / GUM physicians if HIV PEP started.
    - Occupational Health (HCW) or GP (others) if further Hepatitis B vaccination / testing or HCV screening is required.
    - Referral to counselling services if required.
    - For all injuries sustained in the workplace, advise the injured person to inform their Occupational Health Department at the earliest opportunity, regardless of the outcome of the assessment.
- Advise NHS staff to report the incident by completing IR1 form

*Liaise with person carrying out source patient risk assessment. If unsure who is carrying out risk assessment, contact the clinical manager responsible for the area where the source patient is located.

2.9. Assessing the injury

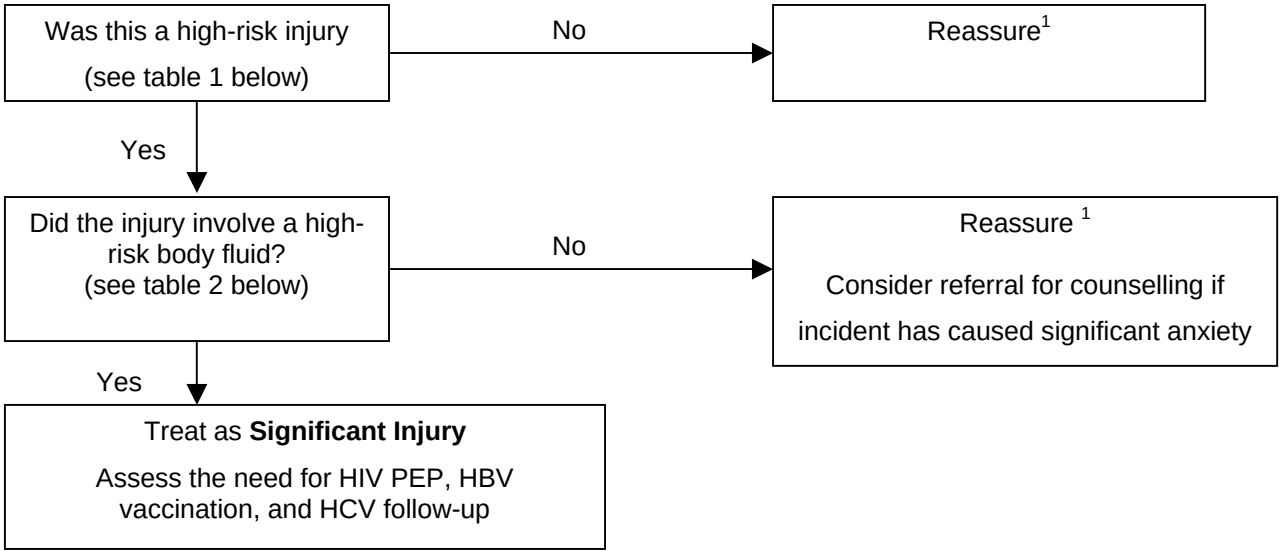
2.9.1. Human bites that break the skin

See section 4.1 for the management of human bites that break the skin.

2.9.2. All other injuries

For an injury to be considered significant, **both** the type of injury incurred **and** the body fluid involved must be high-risk.

The following flow diagram can be used to assess the injury:



1. In cases where there is potential for repeated exposure to BBVs (e.g. health care worker or police officer), check hepatitis B vaccination history. If unvaccinated or vaccination incomplete, advise to attend Occupational Health for vaccination.

Table 1: Injury Type

High-Risk Injury	**Low-Risk Injury**
Percutaneous exposure e.g. needlestick or other sharps injury Exposure on broken skin Mucous membrane exposure (e.g. eye)	Splash on intact skin – there is no known risk of BBV transmission from exposures to intact skin

Table 2: Body Fluids

High-Risk Body Fluid		**Low-Risk Body Fluid (unless blood-stained)**
Blood Blood-stained low risk fluid Semen Vaginal Secretions CSF Pericardial fluid Peritoneal fluid	Pleural fluid Saliva associated with dentistry Amniotic fluid Breast milk Synovial fluid Unfixed tissues or organs	Urine Vomit Saliva Faeces

2.10. Management of exposure to Hepatitis B virus

The guidance below refers to exposures following needlestick or similar injury. For management following sexual exposure to HBV, see section 3.2.

1. Establish injured person's vaccination status

A high proportion of NHS staff will have been vaccinated against hepatitis B. Within NHS Greater Glasgow & Clyde all vaccinated staff are offered a post vaccination antibody test to assess their level of immunity. This result may be available from:

- The employee
- The Occupational Health Department record
- The Specialist Virology Centre (previously the Regional Virus Laboratory)

2. Establish whether a significant injury has occurred (see section 2.9).

3. For significant injuries

- Offer to take blood for storage.
- Establish if source patient has been identified and, if so, whether their HBV status is known or testing has been arranged*.
- Consider the need for hepatitis B vaccine +/- hepatitis B immunoglobulin (HBIG) using the table below. Where indicated, treatment should be given as soon as possible after injury. In most circumstances, treatment can be initiated without waiting for source patient blood test results. Ideally, both HBV vaccination and HBIG should be given within 48 hours of injury, although they should still be considered up to a week after exposure.
- Arrange follow-up as appropriate (see section 2.10.2 for details).

4. For non-significant injuries

In cases where injury is not considered significant but there is potential for repeated exposure (e.g. health care worker or police officer), check vaccination history. If unvaccinated or vaccination incomplete, advise to attend Occupational Health for vaccination.

*Liaise with person carrying out source patient risk assessment. If unsure who is carrying out risk assessment, contact the clinical manager responsible for the area where the source patient is located.

2.10.1. HBV prophylaxis for reported significant injury

HBV Status of person exposed	HBsAg positive source	Unknown source	HBsAg negative source
Known responder to HB vaccine (anti-HBs ≥ 10 mIU/ml)	Give booster dose of HB vaccine	No treatment required	No treatment required
≥ 2 Doses of HB vaccine given, or course completed but response unknown.	Give one dose of HB vaccine followed by second dose one month later.	Give one dose HB vaccine.	Finish course of HB vaccine.
Unvaccinated or only 1 dose of HB vaccine given.	Accelerated course of HB vaccine†. HBIG X 1 in other arm.	Accelerated course of HB vaccine†.	Initiate or complete course of HB vaccine.
Non responder to vaccine (anti-HBs <10 mIU/ml)	Give booster dose of HB vaccine. Give HBIG X1 in other arm Repeat HBIG in 30 days	Give booster dose of HB vaccine. Give HBIG X 1 in other arm. Repeat HBIG in 30 days	No treatment required

Table is based on guidance from the Joint Committee on Vaccination and Immunisation[1] and the Center for Disease Control and Prevention [2]

†An accelerated course of vaccine consists of doses spaced at zero, one and two months. A fourth dose should be given at 12 months. A very rapid course consisting of the first three doses given at 0, 7 and 21 days, with a fourth dose at 12 months, can also be used in adults where rapid protection is desirable and to maximise compliance; e.g. in those travelling to areas of high endemicity, IDUs and prisoners[1].

Access to hepatitis B vaccine / HBIG

Emergency Departments and Occupational Health Departments have access to stocks of hepatitis B vaccine. Hepatitis B immunoglobulin can be accessed by contacting the local blood bank or through the Blood Transfusion Service on 0141 357 7700.

2.10.2. Follow-up

Patients should be referred to their Occupational Health Department (HCW) or GP (others) for follow-up. Further doses of hepatitis B vaccine should be given, as required, to complete the vaccination course. If at continuing risk of exposure to HBV, e.g. health care worker, antibody titre should be checked 2-3 months after completing vaccination to establish whether there has been an adequate response to the vaccine.

[1] Immunisation against infectious disease: The Green Book. Department of Health 2006
[2] Center for disease control and prevention. Updated US public health service guidelines for the management of occupational exposures to HBV, HCV and HIV and recommendations for postexposure prophylaxis. MMWR 2001;50 (No.RR-11)

2.11. Management of exposure to HIV

The guidance below refers to exposures following significant needlestick or similar injury (see section 2.9 for definition of significant injury).

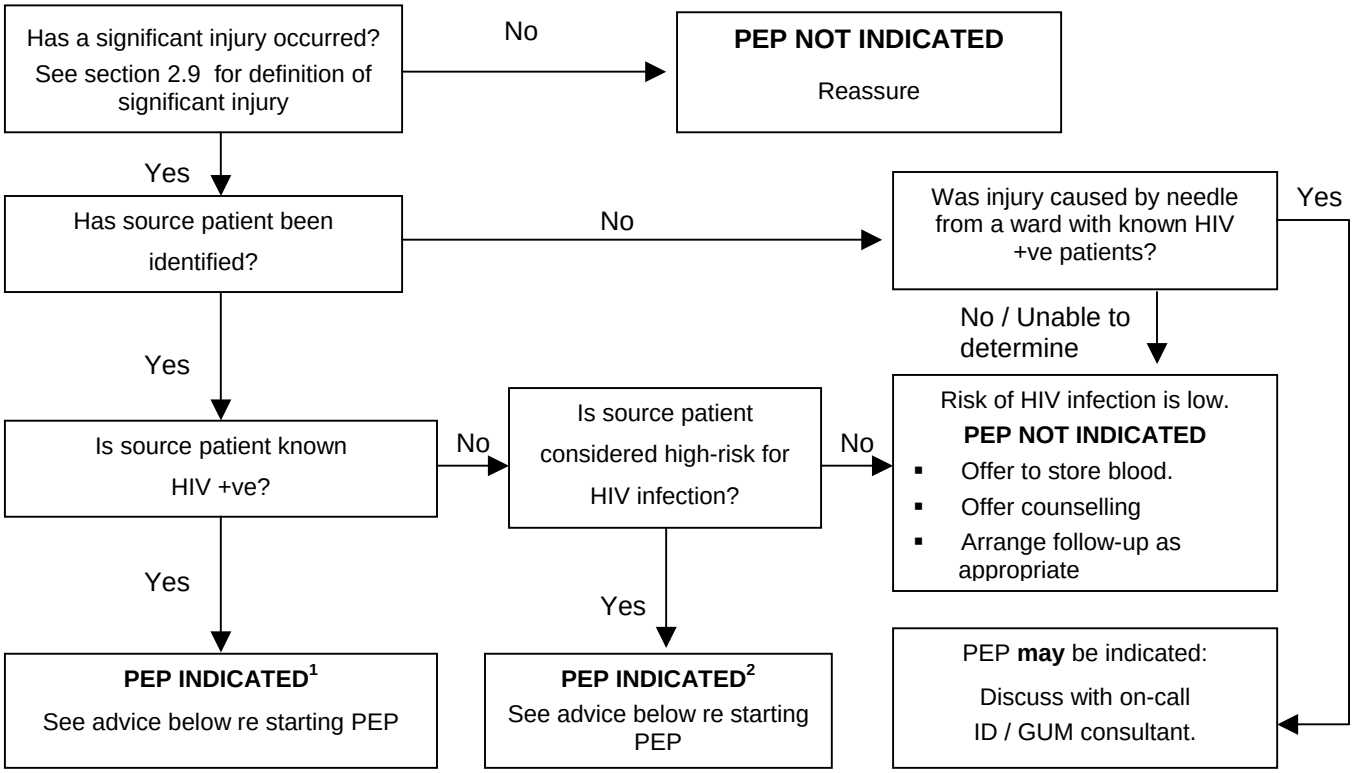
For management following sexual exposure to HIV, see section 3.1.

For all **significant** injuries:

- Offer to take blood for storage.
- Establish risk status of source blood / source patient*.
- Consider the need for HIV post-exposure prophylaxis (PEP) - see flow diagram below. If PEP is thought to be necessary, time is of the essence and therapy should ideally be started within one hour of injury. If the injury occurred more than 72 hrs ago, discuss with the on-call ID / GUM consultant before initiating PEP.
- Arrange follow-up as appropriate:
  - If the source patient's HIV antibody test is negative and there are no other high-risk factors present, then the injured person can be reassured.
  - For all other injuries, offer counselling in the Occupational Health Department or via the specialist counsellors at the Brownlee Centre, Gartnavel General Hospital or the Sandyford Initiative. See section 5.2 for contact details. Follow-up should include post-exposure testing as appropriate.
  - If PEP has been started arrange follow-up via the on-call doctor at the Brownlee Centre (contact via Gartnavel General Switchboard on 0141 211 3000).
  - All persons exposed to HIV-infected blood should have follow-up counselling, post-exposure testing, and medical evaluation **whether or not** they have received PEP. All should be encouraged to seek medical advice about any acute illness that occurs during the follow-up period. HIV antibody testing should be carried out at 3 and 6 months.
  - All HCWs should be followed up by the Occupational Health Department regardless of whether PEP is indicated.

*****Liaise with person carrying out source patient risk assessment. If unsure who is carrying out risk assessment, contact the clinical manager responsible for the area where the source patient is located.

The following flow diagram can be used to assess whether PEP is indicated:



1. When source patient is known to be HIV positive, determine (if possible) what anti-retroviral therapy they are currently receiving (or have taken in the past) and which consultant has responsibility for their care.
2. PEP can be discontinued if the source patient HIV antibody test is negative.

2.11.1. Starting PEP

Points to consider before dispensing PEP:

- Does the injured person have an existing medical condition?
- Is the injured person taking any medications (including herbal remedies) that might interact with PEP? See information leaflet provided in PEP packs for a list of common drug interactions. Further information can be accessed at **www.hiv-druginteractions.org**
- Could the injured person be pregnant?
- If the source patient is HIV +ve, are they attending the Brownlee Centre for treatment?
- If the source patient is HIV +ve but does not attend the Brownlee Centre, is their current or former treatment regimen known?
- Did the injury occur > 72 hours ago?

If the answer to any of these questions is yes then contact on-call ID / GUM consultant to discuss before dispensing PEP. Ensure **all** relevant information has been obtained **before** contacting ID / GUM consultant (see below).

What the ID / GUM consultant needs to know:

1. Details and time of the injury.
2. Confirmation that first aid measures have been carried out.
3. Location of the source patient.
4. Name of consultant with current clinical responsibility for the source patient.
5. Name and contact details of person who carried out source patient risk assessment.
6. HIV status (if known) and outcome of source patient risk assessment.
7. Name of HIV specialist with clinical responsibility for the source patient (if known HIV positive)
8. List of medications of source patient (if known HIV positive).
9. List of medical conditions and medications of the injured person.
10. If the injured person is (or could be) pregnant.

Dispensing PEP

- Take baseline bloods: FBC, U&Es, LFTs, Lipids, Glucose.
- Give starter pack and information leaflet.
- Arrange follow-up by contacting the doctor on call for the Brownlee Centre (contact via Gartnavel Switchboard, Tel: 0141 211 3000). Patients will be offered urgent follow-up. All the information above (what ID / GUM consultant needs to know) must be provided when arranging the appointment.
- Liaise with person carrying out source patient risk assessment to ensure source blood has been sent for **urgent** testing – PEP may be discontinued if test result is negative.

PEP starter packs

Starter packs containing the most up-to-date regimen are available in all Emergency Departments and Occupational Health Departments. In general, PEP will be continued for one month under the supervision of an HIV specialist.

2.12. Management of exposure to Hepatitis C virus

The guidance below refers to exposures following needlestick or similar injury. For management following sexual exposure to HCV, see section 3.3.

Following needlestick or similar injury:

Offer to take and store blood following all significant injuries.

There is no vaccine or post exposure prophylaxis presently available for HCV. There are effective treatments, however, and it is therefore important that those exposed receive appropriate follow-up so that treatment can be initiated should they become infected.

Follow-up

If a significant injury has occurred (see section 2.9) **and** the source patient is known HCV positive or considered high-risk for HCV*, then:

- Offer counselling in the Occupational Health Department (HCWs) or via the specialist counsellors at the Brownlee Centre or the Sandyford Initiative. See section 5.2 for contact details.
- Refer patient to Occupational Health Department (HCWs) or GP (others) for HCV screening (see below). Clear information detailing what action is required should be given to the GP.

HCV Screening

HCV PCR testing should be performed at 6, 12 and 24 weeks with anti-HCV testing at 12 and 24 weeks. If the patient tests positive, prompt referral should be made to a specialist HCV centre.

*Source patients who are known to be past or current injecting drug users should be considered high-risk for HCV infection.

Section 3: Management of sexual exposures

3.1. Management of sexual exposure to HIV infection

Adapted from UK national guidelines for the use of post-exposure prophylaxis for HIV following sexual exposure[1]

If a patient presents for PEP during GU Medicine opening hours, he / she can be referred directly to the GU Medicine Department, Sandyford Initiative (contact professional helpline on 0141 211 8646, Monday to Friday 09:00-12:30 and 13:00 – 16:30). Patients presenting out-of-hours should be managed in the Emergency Department using the following guideline:

3.1.1. What is the risk of infection after exposure?

HIV status of partner unknown:

Risk of HIV transmission = Risk that source is HIV positive x Risk of exposure[†]
([†]Including cofactors such as sexually transmitted infections (STIs), high viral load and bleeding)

A table of estimated risks calculated for different exposures using Glasgow HIV prevalence rates can be found in section 1.2.

Partner HIV positive:

The following table (adapted from the national guidelines) shows the risk of transmission following an exposure from a **known** HIV-positive individual. Risks given are for unprotected sexual exposures.

Type of exposure	**Estimated risk of HIV transmission per exposure (%)**
Receptive anal intercourse	0.1-3.0
Receptive vaginal intercourse	0.1- 0.2
Insertive vaginal intercourse	0.03 - 0.09
Insertive anal intercourse	0.06
Receptive oral sex (fellatio)	0 - 0.04

[1]Fisher M, Benn P, Evans B, Pozniak A, Jones M, MacLean S et al. UK Guideline for the use of post-exposure prophylaxis for HIV following sexual exposure. International Journal of STD and AIDS. 2006;17:81-92.

3.1.2. What do you need to ask the patient?

The following questions should be asked in a sensitive manner. The discussion should take place in a location where privacy is maintained:

1. **When did the exposure occur?**
   If > 72 hours since exposure, discuss with GUM / ID consultant on call before initiating PEP
2. **What type(s) of sexual exposure occurred?**
3. **Was there any bleeding or trauma?**
4. **Is the partner known to be HIV positive?***

   If yes:

   a) Which centre does he / she attend for management of his / her HIV?
   b) Is he / she currently taking antiretroviral therapy or has he / she ever been on antiretroviral therapy? If yes, which drugs?
5. **Is the partner known to be from a high prevalence group?** (see section 5.3)
6. **Is the patient taking medication (including herbal remedies) that might interact with PEP?****
   See information leaflet provided in PEP packs for a list of common drug interactions. Further information on drug interactions can be accessed at **www.hiv-druginteractions.org**
7. **Could the patient be pregnant?****

* If the partner attends the Brownlee Centre or if he / she is currently taking (or has ever been on) treatment for HIV, then contact the on-call GUM / ID consultant for further discussion on which antiretrovirals should be given.

** If answer to either of these questions is yes, contact GUM / ID consultant on call (via Gartnavel General switchboard) before prescribing PEP.

3.1.3. Assessing the need for PEP

A risk vs. benefit analysis should be undertaken, and a decision made on a case-by-case basis for every individual presenting following exposure. This should consider both the risk of transmission according to coital act and the risk of the source being HIV positive. In practice, if the risk of HIV transmission is calculated to be less than 1 in 500, then the risk vs. benefit analysis becomes less attractive and it would be rare to prescribe PEP in this situation. Examples of some of the more common requests for PEP following sexual exposures, and how they should be managed, are given in section 4.1. If there are any doubts as to whether PEP should be prescribed, the GUM / ID consultant on call should be contacted for discussion.

The table below can be used as a tool to decide whether PEP is indicated. Recommendations are for either unprotected sexual exposure or where condom failure has occurred. Recommendations regarding fellatio are where the partner giving fellatio is presenting for PEP.

Table to be used as a tool for deciding if PEP is indicated

<table>
<tr><th rowspan="2">RISK ACTIVITY</th><th colspan="3">SOURCE HIV STATUS / PREVALENCE</th></tr>
<tr><th>Known HIV+</th><th>High prevalence group (>10%)</th><th>Low prevalence group (<10%)</th></tr>
<tr><td>Receptive anal sex</td><td rowspan="4">Recommended[1]</td><td>Recommended[1]</td><td rowspan="4">Considered[2]</td></tr>
<tr><td>Insertive anal sex</td><td rowspan="4">Considered[2]</td></tr>
<tr><td>Receptive vaginal sex</td></tr>
<tr><td>Insertive vaginal sex</td></tr>
<tr><td>Fellatio (performing oral sex on a man) with ejaculation</td><td rowspan="2">Considered[2]</td><td rowspan="4">Not recommended</td></tr>
<tr><td>Splash of semen into eye</td></tr>
<tr><td>Fellatio without ejaculation</td><td rowspan="2">Not recommended</td><td rowspan="2">Not recommended</td></tr>
<tr><td>Cunnilingus (performing oral sex on a woman)</td></tr>
</table>

1. Start PEP and arrange follow-up at GUM clinic (see sections 3.1.4 – 3.1.6)
2. Discuss with on-call GUM / ID consultant

Prevalence

Information on worldwide HIV prevalence rates, including a list of high prevalence countries, is provided in section 5.3.

For the UK*:

MSM: HIV prevalence in Glasgow, and in Scotland as a whole, is low (< 5%). High prevalence areas in the UK (>10%) include London and Brighton.

Heterosexuals: HIV prevalence in Glasgow, and in Scotland as a whole, is very low (< 0.5%). Similarly in England and Wales prevalence of HIV is < 0.5% (1% in London).

Injecting drug users: HIV prevalence in Glasgow and the rest of the UK (excluding London) is very low (<1%). In London, the prevalence of HIV is low at around 3%.

*Figures quoted are based on overall HIV prevalence rates for GUM clinic attendees. Country of origin should also be considered when carrying out individual risk assessments as this may affect the probability of the source being HIV positive: see section 5.3.

3.1.4. Starting PEP

What tests should be done?

FBC, U&Es, LFTs, Lipids and Glucose should be sent by the prescribing doctor before PEP is commenced.

Individuals for whom PEP is provided must undertake an HIV test with results available as soon as possible after initiating therapy. Future management of undiagnosed HIV infection may be severely compromised by short-course antiretroviral therapy. Individuals are by definition at higher risk of HIV infection. However, a baseline HIV test can be performed with appropriate counselling at follow-up in the GUM clinic.

What does the patient need to know?

- The rationale for PEP
  - Certain types of studies have shown that there may be a chance to prevent infection with HIV in someone who has been exposed to the virus, if medications against HIV are started within 72 hours of exposure. However, it cannot be guaranteed that taking this medication will prevent HIV infection - it is estimated that the risk of transmission may be reduced by around 50%.
- The lack of conclusive data for the efficacy of PEP
  - Prospective randomised controlled trials to determine the efficacy of PEP are not feasible due to a) the ethical problems of withholding a potentially efficacious treatments and b) the difficulty in recruiting the high number of patients that would be required to conduct such a trial. The recommendations for using PEP following sexual exposures to HIV have therefore been made on the basis of animal studies, and on retrospective human studies examining the efficacy of PEP when given to prevent occupational, vertical and sexual transmission of HIV. These studies suggest that the use of PEP following HIV exposure may be protective.
- The potential risks and side effects of PEP
  - See patient information leaflet supplied in PEP packs.
- The follow-up arrangements with the GUM clinic (see section 3.1.6).
- Patients must have a baseline HIV test to exclude HIV infection already present. This can be carried out at follow-up in the GUM clinic.

3.1.5. Other points to consider

- Does the patient require hepatitis B vaccination? For example, post sexual assault or sex between men who have sex with men (see section 3.2).
- Does the patient require post-coital contraception?

3.1.6. Follow up

- Patients who are prescribed PEP should be followed up at the **next** GUM clinic at the Sandyford Initiative, 2-6 Sandyford Place, Glasgow G3 7NB. Clinics are open on a walk-in basis from 08:30 to 10:00 weekdays. They will also have to see the GUM consultant at 2 and 4 weeks after starting PEP.
- Additional supplies of PEP will be provided through Gartnavel General Hospital pharmacy.
- Patients who are not prescribed PEP should be reminded of the importance of having a sexual health screen and be given details of the GUM clinic at the Sandyford Initiative as follows:
  - "Walk in" service Monday to Friday 08.30 – 10:00
  - Appointments: afternoon and evening. Phone 0141 211 8130 (patient can self-refer)

3.2. Management of sexual exposure to Hepatitis B infection

3.2.1. Sexual partners of individuals with known hepatitis B infection

Sexual partners of individuals suffering from acute hepatitis B, and who are seen within one week of last contact, should be offered protection with hepatitis B immunoglobulin (HBIG) and an accelerated course* of HBV vaccine. Ideally, both HBV vaccination and HBIG should be given within 48 hours of exposure, although they should still be considered up to a week after exposure.

Sexual contacts of an individual with newly diagnosed chronic hepatitis B should be offered an accelerated course* of vaccine; HBIG may be added if unprotected sexual contact occurred in the past week. Blood should be taken at the time of the first vaccine to determine if they have already been infected. Contacts shown to be HBsAg, anti-HBs or anti-HBc positive do not require further immunisation.

3.2.2. Sexual partners of high-risk individuals

HBV vaccine is recommended as routine for all men who have sex with men (MSM), those with sexual partners overseas, and sexual partners of injecting drug users (IDUs). Vaccine status is less likely to be known for non-NHS staff although many MSM will already have been vaccinated. Where vaccine status is uncertain and person has been exposed to someone from the above risk groups, commence an accelerated course* of hepatitis B vaccine.

3.2.3. Following sexual assault

An accelerated course* of HBV vaccine should be offered following any sexual assault.

*An accelerated course of vaccine consists of doses spaced at zero, one and two months. A fourth dose should be given at 12 months. A very rapid course consisting of the first three doses given at 0, 7 and 21 days, with a fourth dose at 12 months, can also be used in adults where rapid protection is desirable, and to maximise compliance e.g. in those travelling to areas of high endemicity, IDUs and prisoners[1].

3.3. Management of sexual exposure to Hepatitis C infection

People who have had a sexual partner who is HCV infected should be offered counselling and testing for HCV – refer to the Sandyford Initiative (see section 5.2 for contact details).

[1] Immunisation against infectious disease: The Green Book. Department of Health 2006

Section 4: Common scenarios and frequently asked questions

4.1. Common scenarios

4.1.1. Managing injuries from needles discarded in the community e.g. in the park / street

The risk of bloodborne virus transmission from a needle found discarded in the community is very low. To date, there have been no published reports in the UK of HIV or Hepatitis C infection being acquired following injury with such needles. Estimates of the risk of BBV transmission following needlestick with a used needle from an injecting drug user are given in section 1.2.

Following such an injury, basic first aid should be carried out (see section 2.1) and, after an initial assessment to confirm that a significant injury has occurred (see section 2.9), the patient should be referred to the Emergency Department for further management as follows:

- Offer to take blood for storage. It is not necessary to take storage bloods from children (as the risk of their being already infected are so small), unless there are other concerns that would warrant taking blood.
- Hepatitis B vaccination should be given as per the table in section 2.10.
- Hepatitis B immunoglobulin is **not indicated**
- HIV PEP is **not indicated**

Follow-up

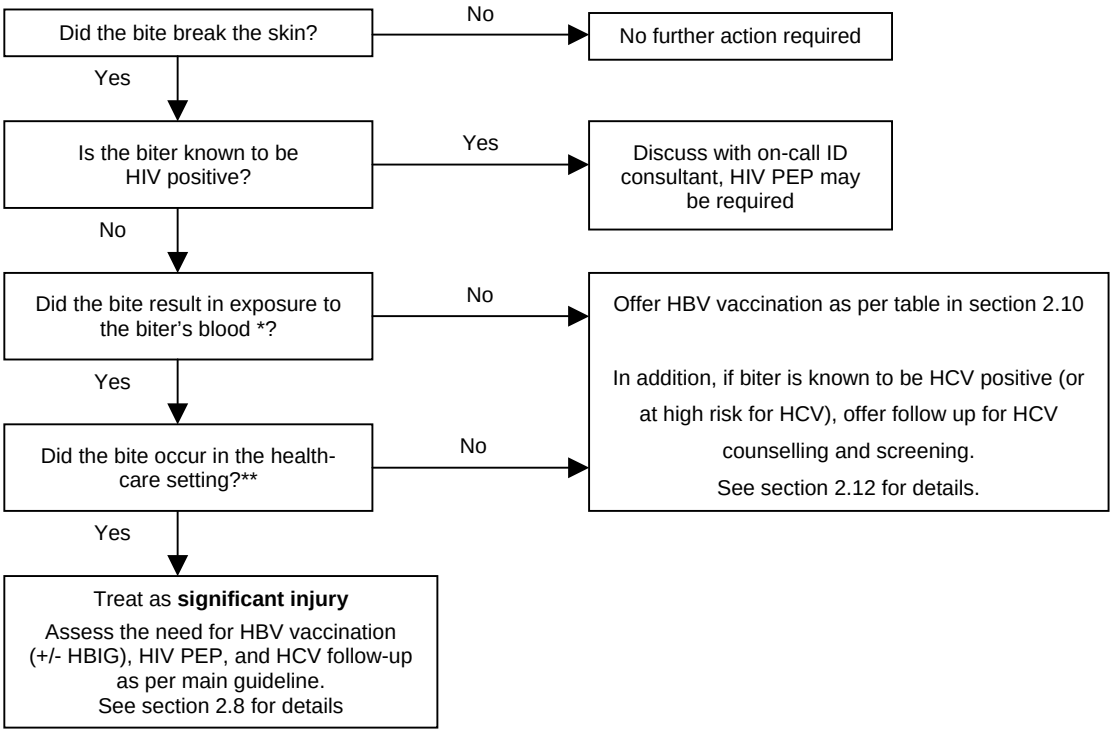
- Adults should be offered counselling through the specialist counselling services at the Brownlee Centre or Sandyford Initiative (see section 5.2 for contact details). These services can also be offered for parental counselling where the injured person is a child.
- Children can be offered follow-up testing at 3 months. This should be done by referral to the local paediatric consultant (see section 5.2 for referral details).

4.1.2. Managing human bite injuries

The risk of bloodborne virus transmission from a bite injury is extremely low. HBV infection has the greatest potential for transmission via this route; therefore when a patient presents following a bite injury that breaks the skin, hepatitis B vaccination should be offered. HIV transmission has, rarely, been reported following a bite injury. Between 1987 and 2006 there have been only four published cases of HIV transmission from a bite. In all of these cases the bite broke the skin and there was a history of bleeding from the biter's mouth. Worldwide, there has been at least one published report of HCV infection being transmitted via a bite; however there have been no published reports of transmission via this route in the UK.

For bites that break the skin:

- Apply first aid
  - Encourage wound to bleed, unless it is bleeding freely
  - Irrigate wound thoroughly in warm running water
  - Cover with a waterproof dressing
  - Seek medical attention
- Give tetanus vaccination as appropriate
  - If immunisation schedule is incomplete or unknown, a dose of tetanus containing vaccine should be given at time of treatment. Follow up with the GP / Occupational Health should be arranged for further doses if required. See Green book for further details.[1]
- Give antibacterial prophylaxis as appropriate[2]
  - Antibacterial prophylaxis should be prescribed for all human bite wounds under 72 hours old. A seven-day course of co-amoxiclav is recommended (refer to BNF / BNF for children for alternative if penicillin allergic). If the injury is over 72 hours old and there are no signs of infection then antibacterial prophylaxis is probably not of value.
- Assess the risk of BBV transmission and manage appropriately:



* The clinical evaluation should also include the possibility that the person who inflicted the bite may have been exposed to bloodborne pathogens during the incident.

For bite injuries occurring outside the health care setting, it is likely that the biter will not be available for risk assessment or testing. HIV PEP would **not be recommended in this situation unless the biter was known to be HIV +ve.

[1] Immunisation against infectious disease: The Green Book. Department of Health 2006
[2] Health Protection Agency North West. Guidelines for the management of human bite injuries. June 2005

- Arrange follow-up
  - All health care workers should be referred to their Occupational Health Department
  - Refer others to GP if required e.g. for completion of HBV or tetanus vaccination

4.1.3. Management of patients who have been exposed to blood from a HCW[1]

Following any incident that results in a blood spillage, no matter how minor, care must be taken to ensure that any contaminated materials are disposed of correctly and all surfaces are cleaned and disinfected immediately. Guidance on procedures for decontamination following body fluid spillages can be found in the NHSGGC Prevention and Control of Infection Manual. Advice can also be provided by local infection control teams.

Circumstances that could allow the transmission of bloodborne viruses from HCW to patient include:

- Visible laceration occurring to a HCW's hand where the patient's open tissues or mucous membranes could be contaminated with the HCW's blood.
- Visible bleeding from a HCW from any other site, e.g. nosebleed, leading to significant bleed-back into a patient's open tissues or mucous membranes.
- An instrument or needle contaminated with the blood of the HCW is inadvertently introduced into the patient's tissues.

Full advice on how to manage such exposures can be found in guidance issued by the Department of Health[1.] This can be accessed on-line at http://www.advisorybodies.doh.gov.uk/eaga/publications.htm In summary, the following steps should be taken following any of the incidents detailed above:

The injured worker should:

- Stop the procedure as soon as reasonably practicable, wash and dress the wound and stem the bleeding.
- Clean and disinfect any contaminated areas.
- Report the incident to the clinical supervisor or line manager.
- Inform the occupational health department without delay.
- Complete an accident / incident form (IR1).

A risk assessment should then be carried out by someone other than the injured HCW, e.g. a senior doctor, to ascertain whether or not a significant exposure has occurred. If the incident is considered to be a significant exposure, involving bleed-back into the patient, the injured HCW should routinely be asked to consent to testing for HIV, HBV and HCV. HIV testing of the HCW should be conducted as soon as possible to maximise the benefit of PEP if indicated.

[1]Department of Health. HIV Post-Exposure Prophylaxis: Guidance from the UK Chief Medical Officers' Expert Advisory Group on AIDS. February 2004.

If the HCW tests positive for any bloodborne virus, the patient should be notified of an intra-operative exposure without revealing which member of the clinical team is infected. PEP for HIV should only be offered and recommended following a positive test in the HCW. Only in exceptional circumstances (e.g. high likelihood of HIV infection in the HCW and / or refusal of the HCW to consent to an HIV test) would it be warranted to initiate PEP in the absence of a positive HIV test.

A written record of the incident and test results should be entered in the HCW's occupational health notes.

The following documents from the Scottish Executive give further guidance on the management of infected health care workers:

- AIDS/HIV infected health care workers: Guidance on the management of infected health care workers and patient notification. http://www.scotland.gov.uk/Publications/2002/09/15338/10619

- Hepatitis C infected health care workers. http://www.scotland.gov.uk/Publications/2002/11/15811/13927

- Addendum to guidance issued in august 1993: Protecting health care workers and patients from Hepatitis B. http://www.sehd.scot.nhs.uk/mels/1996_93b.pdf

4.1.4. Source patient risk assessment and testing in the community and dental setting

The occupational health department should be informed immediately following any significant injury that takes place in the community or dental setting. The occupational health team will then be able to offer guidance on conducting the source patient risk assessment and managing the injured person. Notification of the incident to the occupational health team should **not** be delayed until the end of the clinical session or the working day. Time is of the essence and if PEP is indicated it should, ideally, be started within one hour of exposure.

The source patient risk assessment should be carried out by a GP, senior nurse, or senior member of the dental team at the time that the incident occurs. The injured person should not conduct the risk assessment. If possible, a source patient blood test should also be taken before the patient leaves the surgery. If this is not possible, practice staff should ensure that they have an up-to-date record of the patient's GP details and a contact telephone number for the patient. The patient should be informed that the incident has occurred and that they may need to be contacted later for further information. The occupational health department can then help to coordinate the risk assessment and testing in the source patient.

4.1.5. Assessing the need for PEP following sexual exposures

Examples of more common requests for PEP following sexual exposures, and how they should be managed, are given below:

A man reporting unprotected anal sex with a gay man in Glasgow

PEP should be discussed in this situation. The prevalence of HIV in gay men in Glasgow is low at less than 5% but some men may prefer to take PEP despite this. Risk assessment should include whether there are factors present that may increase the risk of HIV transmission; e.g. the risks are higher for receptive anal sex, or if there has been trauma. The risks and benefits of PEP need to be discussed.

An accelerated course of hepatitis B vaccine should be administered (if not already vaccinated) and the client should be advised to attend for a sexual health screen two weeks after unprotected sexual intercourse.

A woman reporting unprotected sex with a heterosexual man in Glasgow

A risk assessment and discussion should be carried out based on the likelihood of the partner being HIV positive. The prevalence of HIV in the Scottish male heterosexual population is low and therefore PEP would not normally be recommended in these circumstances. However it may be considered if the partner is from a high prevalence country (see section 5.3). If there has been a sexual assault, an accelerated course of hepatitis B vaccine should be administered. Emergency contraception may need to be considered also.

A man presenting following unprotected sex with an HIV positive partner, known to be under the care of the Brownlee centre and to have a complicated treatment history.

In this situation, PEP would be recommended and should be discussed with the on-call GUM or ID consultant. Find out as much as possible about the HIV positive partner: e.g. name, age, current treatment, and recent viral load. Contact the GUM / ID consultant to discuss which PEP regimen is best in this situation, given the fact that the partner may have drug resistant HIV and standard PEP may not be effective.

Hepatitis B vaccination should also be recommended if unvaccinated. The hepatitis B status of partner will probably be known to the Brownlee.

4.2. Frequently asked questions

4.2.1. What can be done to reduce the risk of needlestick injury?

Needlestick injuries and other blood exposures can be prevented if proper care is taken. It is essential that managers ensure that staff members perform tasks in a safe manner, using safer devices where available.

Preventive measures which should be encouraged include:

- The protection of existing wounds and skin lesions.
- The use of gloves.
- Personal protective measures to avoid contamination and protection of mucous membranes of eyes, nose and mouth from blood splatters.
- Control of any work surface contamination through containment and disinfection. Guidance on procedures for decontamination following body fluid spillages can be found in the NHSGGC Prevention and Control of Infection Manual. Advice can also be provided by local infection control teams.
- Care in the disposal of sharps e.g. don't overfill the sharps container, don't re-sheath needles, place sharps container at the site of the procedure.
- Reusable medical equipment must be disinfected and sterilised in accordance with national guidelines.
- Safe and correct disposal of contaminated waste and linen.
- Use of safer devices where available.

4.2.2. What factors increase the risk of BBV transmission?

Occupational exposures

The following factors are associated with an increased risk of BBV transmission:

- Deep injury.
- Hollow needle.
- Visible blood on the device that caused the injury.
- Injury with a needle that has been placed in a source patient's artery or vein.
- The risk of hepatitis B transmission is increased if the source patient is HBeAg positive.
- A high plasma viral load in the source is associated with an increased risk of HIV transmission.

Sexual exposures

The following factors may increase the risk of HIV transmission following sexual exposure:

- A high plasma viral load in the source.
- Breaches in mucosal barrier e.g. mouth / genital ulcers or trauma.
- Menstrual bleeding.
- Presence of concurrent sexually transmitted infection (STI).

There is an increased risk of sexual transmission of hepatitis C infection in patients with HIV co-infection.

4.2.3. What should be done if the source patient consents to HIV testing but does not wish to know the result?

If the source patient states that they do not wish to know the result of the test, then they should be referred for further specialist counselling to either the Brownlee Centre or the Sandyford Initiative (section 5.2 for contact details). The blood test should **not** be taken until the patient has received specialist counselling. The decision on whether to start PEP should be based on the source patient risk assessment, and should not be delayed by waiting for blood test to be carried out.

Section 5: Further information

5.1. Laboratory information

Specimens taken for storage and for bloodborne virus testing should be sent to the local virus or microbiology lab as detailed below:

Greater Glasgow

Specimens should be sent to the West of Scotland Specialist Virology Centre at the Gartnavel General Hospital (formerly the Regional Virus Laboratory).

The preferred sample for both storage and source patient testing is a 9ml EDTA sample. Suitable tubes are available from stores.

During working hours (i.e. Monday to Friday, between 9am- 5pm) the Specialist Virology Centre will test source patients for BBV to reassure staff and aid management of the exposure. Where possible, specimens should be sent during working hours. The person managing the source patient test should phone the laboratory to inform them that a specimen is being sent and to arrange when the result will be available, and to whom the result should be phoned. Contact details are listed in section 5.2. All positive HIV antibody tests will require confirmatory testing: this will be carried out on the next working day.

Outwith these times testing should be arranged with the on call virologist. If an exposure has been assessed 'high risk' and PEP has been given, the source patient will be tested if the specimen reaches the laboratory (or arranged alternative location) before 10pm. Specimens received after 10pm will be tested the following morning (including Sundays and Public holidays).

Clyde

Specimens should be sent to the local microbiology lab.

A 10ml clotted sample should be sent for both storage and source patient testing.

BBV testing is available on a 24-hour basis. During working hours (Monday to Friday, 9am to 5pm), the person managing the source patient test should phone the laboratory to inform them that a specimen is being sent and to arrange when the result will be available, and to whom the result should be phoned. Outwith these hours, requests and arrangements for testing should be discussed with the lab (page via switchboard). Contact details are listed in section 5.2.

Positive HIV antibody tests will be sent on to the West of Scotland Specialist Virology Centre for confirmatory testing.

5.2. Contact telephone numbers / opening hours

GARTNAVEL GENERAL SWITCHBOARD: Telephone 0141 211 3000

BROWNLEE CENTRE, GARTNAVEL GENERAL HOSPITAL

To arrange counselling / anonymous testing:

Telephone: 0141 211 1075

Opening hours: Monday & Wednesday 09:00 - 17:00, Tuesday & Thursday 09:00 - 1900, Friday 09:00 – 16:30

To arrange follow-up:

Contact doctor on-call for Brownlee Ward via Gartnavel General Switchboard (24 hours)

For specialist advice:

Contact on-call ID consultant via Gartnavel General Switchboard (24 hours)

SANDYFORD INITIATIVE, 2-6 SANDYFORD PLACE, GLASGOW G3 7NB

To arrange pre-test counselling / anonymous testing:

Contact Health Advisors on 0141 211 8634.
Alternatively, page the on-call GUM consultant / SpR via Gartnavel General Switchboard (available Monday to Thursday 08:30 – 21:00, Friday 09:00 to 17:00 and some Saturdays 09:00 to 17:00).

To arrange follow-up (including post-exposure counselling):

Follow-up should be arranged via the professional helpline on 0141 211 8646 (Monday to Friday 09:00 - 12.30 and 13:00 – 16:30).

Alternatively, patients can arrange follow-up themselves by contacting the Health Advisors on 0141 211 8634 (contact details can be left on answering machine and health advisors will call back).

For routine sexual health screens:

Patients should be asked to phone the Sandyford Initiative on 0141 211 8130 to arrange an appointment.

Alternatively, they can attend the walk-in clinic at the Sandyford Initiative: open Monday to Friday 08:30 – 10:00

For specialist advice:

On-call GUM consultant / SpR advice is available Monday to Thursday 08:30 – 21:00, Friday 09:00 to 17:00 and some Saturdays 09:00 to 17:00. Contact via Gartnavel General Switchboard.

Sandyford satellite clinics (hubs):

GUM services are also available at a number of hubs across the NHSGGC area. All of these can be accessed via the main Sandyford Switchboard on 0141 211 8130. A list of Sandyford Hubs is given below, an up-to-date list of services can be found at www.sandyford.org

Sandyford Hubs

Sandyford North:	Springburn Health Centre 200 Springburn Way Glasgow G21 1TR	**Sandyford South East:**	Govanhill Health Centre 233 Calder Street Glasgow, G42
Sandyford East:	Parkhead Health Centre 101 Salamanca Street Glasgow, G32	**Sandyford Renfrew:**	Russell Institute Causeyside Street Paisley, PA1 1UR
Sandyford East Renfrewshire:	Barrhead Health Centre 201 Main Street Barrhead G78 1SA	**Sandyford Inverclyde:**	Block 1 & 2 Residentual Complex Inverclyde Royal Hospital Larkfield Road Greenock, PA16 0XN

PAEDIATRICS

Yorkhill Hospital

For specialist advice, contact on-call ID consultant via switchboard on 0141 201 0000

Referrals to consultant paediatrician for follow-up testing:

Glasgow: Refer to Dr Rosie Hague, Consultant ID Physician, Yorkhill Hospital.

Clyde: Refer to Dr Oommen Kurian, Consultant Paediatrician, Inverclyde Royal Hospital.

OCCUPATIONAL HEALTH DEPARTMENTS

Glasgow - Acute division

Occupational Health Departments are open Monday to Friday 08:30 – 16:30.

Glasgow Royal Infirmary / Stobhill Hospital	Tel: 0141 211 0427
Western Infirmary / Gartnavel General	Tel: 0141 211 2058
Southern General / Victoria Infirmary	Tel: 0141 201 2375
Yorkhill Hospital	Tel: 0141 201 0455

Glasgow - Primary care

Partnerships Occupational Health Services

The William Street Clinic, William Street, Glasgow G3 8HS

Tel: 0141 314 6203 Fax: 0141 314 6254

Open Monday to Friday 08:30 – 16:30

Clyde – Acute division & primary care

Occupational Health Departments are open Monday to Thursday 09:00 – 17:00, Friday 09:00 – 16:00

Dykebar Hospital	Tel: 0141 314 4393
Royal Alexandra Hospital	Tel: 0141 314 6867
Inverclyde Royal Hospital	Tel: 01475 504549
Vale of Leven Hospital	Tel: 01389 817533

WEST OF SCOTLAND SPECIALIST VIROLOGY CENTRE

Monday to Friday, 09:00 to 17:00 Tel: 0141 211 0080

Out of hours: Contact on call virologist via Gartnavel General Switchboard, Tel: 0141 211 3000

MICROBIOLOGY LABORATORIES

Royal Alexandra Hospital

Monday to Friday, 09:00 to 17:00 Tel: 0141 314 6172

Out of hours: page lab via switchboard Tel: 0141 887 9111

Inverclyde Royal Hospital

Monday to Friday, 09:00 to 17:00 Tel: 01475 504 461

Out of hours: page lab via switchboard Tel: 01475 633 777

Vale of Leven Hospital

Monday to Friday, 09:00 to 17:00 Tel: 01389 817 567

Out of hours: page lab via switchboard Tel: 01389 754 121

BLOOD TRANSFUSION SERVICE

Tel: 0141 357 7700 (24 hours)

5.3. UK and worldwide HIV prevalence rates

UK*

MSM: HIV prevalence in Glasgow, and in Scotland as a whole, is low (< 5%). High prevalence areas in the UK (>10%) include London and Brighton.

Heterosexuals: HIV prevalence in Glasgow, and in Scotland as a whole, is very low (< 0.5%). Similarly in England and Wales prevalence of HIV is < 0.5% (1% in London).

Injecting drug users: HIV prevalence in Glasgow and the rest of the UK (excluding London) is very low (<1%). In London, the prevalence of HIV is low at around 3%.

* Figures quoted are based on overall HIV prevalence rates for GUM clinic attendees. Country of origin should also be considered when carrying out individual risk assessments as this may affect the probability of the source being HIV positive.

Outside UK

Many countries within Sub Saharan Africa have high overall HIV prevalence rates (>10%), these are listed in the table below. Also included, to help inform discussions with patients, are countries with moderate (>5%) HIV prevalence rates. It should be noted that this table only includes those countries for which data is known.

Outwith Sub Saharan Africa, high HIV prevalence rates (>10%) may be found in 'at-risk' groups (MSM, IDUs, and sex workers) in many countries within the following regions: Middle East and North Africa, South and South East Asia, Eastern Europe and Central Asia, the Caribbean, and Central and Latin America.

Further information can be accessed at the UNAIDS website: http://www.unaids.org/en/

Country	HIV prevalence (%)
Swaziland	38.8
Botswana	37.3
Lesotho	28.9
Zimbabwe	24.6
South Africa	21.5
Namibia	21.3
Zambia	16.5
Malawi	14.2
Central African Republic	13.5
Mozambique	12.2
Guinea-Bissau	10
Tanzania	8.8
Gabon	8.1
Cote d'Ivoire	7
Sierra Leone	7
Cameroon	6.9
Kenya	6.7
Burundi	6
Liberia	5.9
Haiti	5.6
Nigeria	5.4
Rwanda	5.1

Adult HIV prevalence as at 01/01/2005

Source: CIA World Factbook

5.4. Glossary of abbreviations

Anti-HBc	Antibody to hepatitis B core antigen
Anti-HBs	Antibody to hepatitis B surface antigen
BBV	Bloodborne virus
CSF	Cerebrospinal fluid
FBC	Full blood count
GP	General practitioner
GUM	Genitourinary medicine
HBIG	Hepatitis B immunoglobulin
HBeAg	Hepatitis B envelope antigen
HBsAg	Hepatitis B surface antigen
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HCV PCR	Diagnostic test for active HCV infection
HCW	Health care worker
HIV	Human immunodeficiency virus
ID	Infectious disease
IDU	Injecting drug user
IR1	Incident report form
LFT	Liver function tests
MSM	Men who have sex with men
NHSGGC	NHS Greater Glasgow and Clyde
PCR	Polymerase chain reaction (diagnostic test which detects DNA e.g. viral DNA)
PEP	HIV post exposure prophylaxis
U&E	Urea and electrolytes

5.5. List of Contributors

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