NHS Greater Glasgow	NHS GREATER GLASGOW CONTROL OF INFECTION COMMITTEE GUIDELINE		
		Effective from	April 2013
	MANAGEMENT OF OCCUPATIONAL AND NON-OCCUPATIONAL EXPOSURES TO BLOODBORNE VIRUSES INCLUDING NEEDLESTICK INJURIES & SEXUAL EXPOSURES	Review date	March 2017
		Version	3
The most up-to-date version of this guideline can be viewed at the following website: StaffNet > Info Centre > Policies, Procedures and Guideline Documents > NHS GG&C Clinical Guideline Electronic Resource Directory			

Guideline Objective

To update the NHS Greater Glasgow and Clyde guidance on the management of occupational/non occupational exposures to bloodborne viruses including roles and responsibilities.

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Lead Manager	Dr Catriona Milošević, CPHM, NHSGGC
Responsible Director	Dr Jennifer Armstrong, Medical Director, NHSGG&C

Summary:

- The general approach to the management of occupational and non occupational exposures to bloodborne viruses (BBVs) involves undertaking a risk assessment of the incident. The approach to the management of sexual exposures is described in Section 2. Non sexual exposures can be occupational or non occupational. The process for occupational exposures is described below and in detail in section 1.1 - 1.9. The process for non occupational exposures is similar. Details of where it differs can be found in section 1.10 – 1.12.

The risk assessment process has two components:

a) the significance of the injury and,

b) the BBV risk associated with the source patient

- The occupational health/A&E clinician caring for the injured HCW will establish the significance of the injury by reviewing the risk assessment form or from discussion with the injured HCW.

- The clinician assessing the BBV risk associated with the source patient will pass the result to the occupational health/A&E clinician looking after the injured HCW.

- The occupational health/A&E clinician looking after the injured HCW will use these two bits of information to decide what actions need to be taken.

- While BBV testing of the source patient should always be offered, generally, the results will not be available in time to influence the decision as to whether HIV post exposure prophylaxis (PEP) and other treatments should be administered or not. The source patient BBV test results, when they become available (usually 24 hours after the blood sample has been taken), are used to review the decision about HIV PEP and other interventions.

- The main elements of the guidance including roles and responsibilities for the healthcare setting are summarized below (Textbox 1). Detailed actions are included in the main guidance (page 7).

- The general principles and approach for the healthcare setting should also be used for other settings. The parts of the process which differ for each of these are detailed in the relevant section.

Textbox 1: Summary of main roles and actions

Summary of the main roles and actions following a needlestick or similar injury in a healthcare worker (HCW)

Following needlestick or similar injury in a Health Care Worker:

The injured HCW should:

- Apply first aid (page 8).
- Report to their supervisor e.g. night coordinator, ward manager, consultant on call, or lead nurse of the relevant clinical area.
- Contact the Occupational Health Department helpline on 0141 201 0595 8am to 6pm weekdays or A&E if out of hours.

The Supervisor / Head of Department responsible for the injured HCW should:

- Refer the injured person to Occupational Health Department or A&E if out-of-hours.
- Ensure that the risk associated with the source patient has been assessed– liaise with the Nurse in Charge of the area where the source blood/patient is located.

The nurse in charge of the source patient:

- Is responsible for the initial assessment and management of the source patient but can delegate these actions to a doctor or other clinician as appropriate.

The clinician undertaking the source patient risk assessment should:

- Conduct the source patient BBV risk assessment using the *source patient BBV risk assessment letter (Appendix 1).*
- Check the source patient case notes and discuss the risk with the medical team caring for the source patient (page 10).
- Complete the *source patient BBV risk assessment form* (Appendix 2) and give this to the occupational health/A&E clinician looking after the injured HCW.
- Telephone the occupational health/A&E clinician looking after the injured HCW to discuss the results of the source patient BBV risk assessment.
- Consent the source patient for BBV testing.
- Take blood from the source patient for BBV testing (all consenting source patients irrespective of the result of the risk assessment).
- Manage the source patient results including passing the BBV test results to the occupational health/A&E clinician looking after the injured HCW, giving the results to, and if appropriate arranging follow up for, the source patient (see below and page 13).

Textbox 1 continued

The Occupational Health/A&E clinician caring for the injured HCW should:

- See the HCW immediately (within an hour).
- Receive the completed source patient BBV risk assessment form and discuss the results with the clinician looking after the source patient.
- Take bloods from the injured HCW for storage.
- Undertake a risk assessment of the incident including: a) assessment of the injury, and b) assessment of the risk from the source patient and decide on appropriate action.
- Consult with the Infectious Disease physician on call if prescribing PEP or are unsure if PEP is indicated.
- Give PEP/ HBV immunoglobulin/immunisation/ arrange follow up for BBV testing as required based on the risk assessment.
- Receive the anonymised result of the source patient BBV testing.
- Review the need for PEP/ HBV immunisation/ follow up for BBV testing based on the source patient BBV test results if and when available taking in to account the window period where appropriate.

Follow up of the injured HCW/person. Ensure all appropriate follow up is arranged:

- Arrange follow up with the Infectious Disease Physician if HIV PEP started.
- For all HCWs who have sustained a significant injury (irrespective of whether the source patient is high risk or not) arrange follow up with Occupational Health. This is for follow up hepatitis B vaccination, and BBV testing as appropriate. As stated above, the need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate the follow up BBV testing of the injured person can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured person should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- For non-HCWs follow up should be arranged with the GP, or if the injury was sustained at their place of work, via their own Occupational Health Dept if there is one. This is for follow up hepatitis B vaccination, and BBV testing as appropriate. As stated above, the need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate, the follow up BBV testing of the injured person can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured person should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- NB All HCWs/persons who have been exposed to HIV infected blood should have follow up post exposure testing, medical evaluation and be offered specialist advice and support whether or not they have received PEP.
- Follow up can be arranged with the Sandyford Sexual Health Advisors for support if required.

Clinician looking after the source patient:

Source patient follow up:

- Only laboratory confirmed results should be communicated to the source patient.
- Give the source patient their BBV test results. The Sandyford Sexual Health Advisors can support you in this process.
- If the source patient has been discharged and is not contactable contact the Sandyford Sexual Health Advisor Team, who will try to follow up the source patient directly.
- If the source patient is positive for BBVs:
  - Refer the patient to the appropriate treatment and care services.

  (All HIV and hepatitis B positive results are automatically copied to the Sandyford Sexual Health Advisors who will contact the testing clinician to facilitate follow-up and referral).
- Inform the source patient's consultant that the source patient actions have been completed.

Main guidance

1.1 The risk of infection following a needlestick or similar injury

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

HBV: HCWs 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 positive 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%.

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 a person who injects drugs (PWID) 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]

Table 1: Estimated risks associated with a needlestick injury with a used needle from an IDU in Scotland

Infections	Probability of infection in the IDU population in Scotland	Risk of transmission if exposed	Estimated risk following exposure to needle		
			Very short interval after use (second/minutes)	Intermediate interval after use (minutes/hours)	Long interval after use (hours/days)
HIV	1/1000	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	1/2	1/50	1/100	1/10,000	1/100,000

[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's PWID is similar to that quoted for Scotland in the table above; however, the prevalence rate of HCV infection in Glasgow PWIDs is higher than in Scotland as a whole. In 2010 the prevalence of HCV among IDUs in Glasgow was 68% (HCV antibody positive). It is estimated that approximately 75% of these would be HCV PCR positive.

The following factors are associated with an increased risk of BBV transmission from a needlestick injury:

- 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.

With regard to the source patient, the following factors are recognised risk factors for BBV infection:

- Current or past injecting drug use.
- Blood transfusion in a country without blood screening, or in the UK before blood screening was introduced.
- Having invasive procedures in countries where infection control /decontamination standards cannot be guaranteed.
- Coming from a country which is higher risk for BBVs.
- Men who have sex with men.
- Having sex with an individual from a high risk group or area.

1.2 Needle stick and similar injuries: initial actions following injury

The injured HCW should undertake first aid as described below:

- 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.
- Report the incident to the supervisor e.g. night coordinator, ward manager, consultant on call, or lead nurse of the relevant clinical area.
- Contact the Occupational Health Department helpline on 0141 201 0595 8am to 6pm weekdays or A&E if out of hours.

The Supervisor / Head of Department responsible for the injured HCW should:

- Refer the injured HCW to Occupational Health Dept or A&E if out-of-hours.
- Ensure that the BBV risk associated with the source patient has been assessed – liaise with the nurse in charge of the area where the source blood / patient is located.
- Ensure that the incident is reported through the Datix reporting system.
- Investigate the cause of the injury.
- Adopt any appropriate preventative strategies, e.g. safe positioning of sharps boxes or other measures that will reduce the likelihood of further injuries. Liaise with the infection control team and Health and Safety, if necessary.

The nurse in charge of the source patient

- The nurse in charge of the source patient is responsible for the initial assessment and management of the source patient but can delegate these actions to a doctor or other clinician as appropriate.

1.3 Establishing the BBV risk associated with the source patient

When a needlestick injury occurs, the identity of the source patient may be known or unknown.

Establishing the BBV risk associated with an unknown source patient in the hospital setting

- In hospital, if it is not possible to identify which patient relates to a particular needle, undertake a risk assessment to determine the likelihood that the needle was used on a patient with a BBV infection.

Establishing the BBV risk associated with a known source patient in the hospital setting

- Where the source patient can be identified, assess the BBV risk associated with the source patient to establish if they:
  - Are known to be positive for HIV, hepatitis B surface antigen (HBsAg) or hepatitis C (PCR positive), or
  - Are 'high-risk' for BBVs.

Assessing if the source patient is high-risk for BBVs

The clinician assessing the BBV risk associated with the source patient should:

- Review the case notes of the source patient to establish if the source patient is known to have a BBV infection or if there are any known risk factors for BBVs.
- Ask the source patient to complete the *source patient BBV risk assessment letter* (Appendix 1). The information from this should be entered into the *source patient BBV risk assessment form* (Appendix 2) and the source patient BBV risk assessment letter destroyed.
- If possible, consult with the medical team / GP caring for the source patient to establish if there is any additional information regarding the possibility of BBV infection/risk in the source patient.
- Assess the possibility of a window period infection (i.e. infection unable to be detected by BBV assays as very recently acquired) in the source patient [*]. If this is the case, (i) the HCW may require to continue PEP, and ii) follow up source patient testing advised. Discuss with the Infectious Disease physician on call if uncertain (section 3 for contact details).
- Immediately telephone the occupational health/A&E clinician responsible for managing the injured HCW to inform them of any BBV risk associated with the source patient or the needle if the source patient is unknown.
- Complete *the source patient BBV* risk *assessment form* (Appendix 2) and fax to the Occupational Health or A&E clinician managing the injured HCW. Alternatively put the form IN A SEALED ENVELOPE and give to the injured HCW, to take with them to Occupational Health or A&E. Ensure your name and contact details are recorded on the form.
- Record that the source patient BBV risk assessment has been done in the source patient's case notes. DO NOT record the outcome of the assessment or any details of risk factors in the source patient's notes.
- Ensure your name and contact details are recorded in the source patient's notes.

***The Window Period**

All BBV tests have a window period, which is a time after infection during which the antibody response, and infection itself, cannot be detected by the usual testing methods. It is important to establish whether the person being tested could be in the window period, or has been at risk of exposure to infection during the window period for each virus. If they have been at risk they should be offered re-testing, assuming they are negative, after the appropriate window period. It should also be taken into account in relation to the need to continue HIV PEP in the HCW.

Infection	Window period
HIV	1-3 months
HCV	3-6 months
HBV	3-6 months

HIV Window Period

The Fourth Generation HIV antibody/antigen tests will detect the majority of infected individuals at one month after specific exposure.

A negative result at 4 weeks post exposure is very reassuring/highly likely to exclude HIV infection.

Those who have had a negative fourth generation HIV antibody/antigen test should be advised to have an additional HIV test at 3 months (12 weeks) to definitively exclude HIV infection.

If there is an additional known risk then re-testing should not be delayed.

Hepatitis B and C Window Period

Testing for HCV and HBV is recommended at 3 months and again at 6 months. Hepatitis B and C can have long incubation periods, which is why the official window period is 6 months; however, if the infection is detected earlier, referral should be expedited.

1.4 Consenting the source patient for BBV testing

- Use the *source patient BBV risk assessment letter* (Appendix 1) as part of the discussion about why information and blood testing for BBVs are required.
- Consent the patient for testing as you would do for any procedure.
- Clearly explain to the patient:
  - The decision to be tested lies entirely with them and that refusing to be tested will have no effect on their on-going care.
  - If they refuse, their decision and the discussion will not be recorded in their notes.
  - The benefits of testing, including access to treatment.
  - Details of how the result will be given.
  - A negative HIV test will not affect insurance or mortgage applications, policies or premiums.
  - Similar to other significant medical conditions, positive tests may make it more difficult, but not impossible, to get life policies.
  - If appropriate, the window period should be explained, and retesting of the source advised (page 11).
- Inform the source patient that the results of their tests will be passed to the occupational health/A&E clinician managing the injured HCW, but that, as far as possible, their identity will not be disclosed.
- The source patient can be referred to the Sexual Health Advisors at the Sandyford (section 3 for contact details) for further advice and support if required.
- Negative test results will be available within 24 hours; however, if a result is not negative then the laboratory will need to undertake confirmatory testing. The results of confirmatory tests will not be available until the next working day. Only positive results which are laboratory confirmed should be given to the source patient.
- The option for the patient to be tested, but not to receive the results, is not available. If the source patient does not wish to receive the results, do not perform the test. The BBV risk should still be assessed and communicated to the appropriate staff (section 1.3).

NB: Occasionally the source patient may agree to be tested, but does not want the results to be entered into their case notes or shared with the clinicians (hospital or GP) looking after them. In this situation, patients should be encouraged to be tested following normal procedures; however, if they are adamant, a Sandyford number (NASH number) can be used.

Contact the Sandyford Sexual Health Advisors (section 3 for contact details) to request anonymous BBV testing in relation to HIV PEP. The sexual health advisor will make arrangements to see the source patient, register them on NASH, discuss, consent and test the patient. Arrangements for the patient to receive the results will also be made. Permission will be sought at this stage to give the result to occupational health for the management of the injured HCW. As this process is time consuming it is important that, as usual, HIV PEP should be given on the basis of the result of the BBV risk assessment of the source patient rather than waiting for the blood results.

1.5 Taking blood from the source patient for BBV testing

- Once the source patient has consented, take blood and send it to the lab for testing. See section 3 for details on appropriate samples and arrangements for testing in NHS GGC.
- If the clinician who took blood from the source patient 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 occupational health/A&E clinician managing the injured HCW.
- The clinician who took blood from the source patient must inform the laboratory of the arrangements for reporting the test results and ensure that the lab has contact details for both the testing clinician and the named deputy who will receive and action the results.
- You MUST phone the laboratory to discuss with them that a specimen is being sent urgently (contact details section 3) Mark the sample as URGENT.
- Arrange urgent transport for the bloods to go directly to the West of Scotland Specialist Virologist Centre. Out of hours, contact the on-call virologist via Glasgow Royal Infirmary Switchboard. Tel: 0141 211 4000
- The source patient can be referred to the Sexual Health Advisors at the Sandyford (section 3 for contact details) for further advice and support if required.
- Obtain contact details of the source patient. Remember the source patient may be discharged by the time the results are available.

Managing results of source patient BBV testing

- The laboratory will contact the clinician who took blood from the source patient (or the nominated deputy), with the BBV test results as soon as possible.
- The clinician taking blood from the source patient must ensure that the occupational health/A&E clinician managing the injured HCW is informed of the result (anonymised).
- The clinician taking blood from the source patient (or deputy) must also ensure that the source patient is informed of their test result. Only confirmed results should be given to the source patient. This should be done within 24 hours of the confirmed 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 BBV test result being positive, specialist advice can be sought from the Sandyford Sexual Health Advisors (see section 3 for contact details). A positive result should not be given to the source patient over the phone.
- If a NASH number has been used, confidential arrangements to give the patient the result will be made by the Sandyford Sexual Health Advisor.
- If the source patient test negative for BBVs, consider the possibility of a window period infection in the source patient if a recent or ongoing risk factor has been identified. If this is the case, i) the HCW may require to continue HIV PEP, and ii) the source should be advised of the need for follow up testing. Discuss with the Infectious Disease physician on call. (see section 3 for contact details).

1.6 Management of the injured HCW/person

Occupational Health/A&E Staff:

- The injured HCW/person should be treated and triaged as a priority, within one hour if possible.
- Ensure first aid has been undertaken.
- Obtain the details of the injury. Determine if a significant injury has occurred, as described below, and obtain the results of the source patient BBV risk assessment.
- Assess the need for HIV PEP (page 21). 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 (page 18).
- Consider the need for hepatitis C follow-up (page 25).
- If necessary, offer referral for specialist advice and support:
  - HCWs should be referred to Occupational Health.
  - Non-HCWs should be given the Sandyford Sexual Health Advisors details (section 3 for contact details).
- For all significant injuries, take blood from the injured HCW/person for storage. Use TrakCare and ensure you select the correct item from the drop-down list – 'needlestick recipient'
- Consult the on call Infectious Disease Physician if prescribing HIV PEP or unsure if PEP should be prescribed. Inform the Infectious Disease Physician of the details of the injury and the source patient BBV risk assessment.

Follow up of the injured HCW/person. Ensure all appropriate follow up is arranged:

- Arrange follow up with the Infectious Disease Physician if HIV PEP started.
- For all HCWs who have sustained a significant injury (irrespective of whether the source patient is high risk or not) arrange follow up with Occupational Health. This is for follow up hepatitis B vaccination, and BBV testing as appropriate. As stated above, the need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate the follow up BBV testing of the injured person can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured person should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- For non HCWs follow up should be arranged with the GP, or if the injury was sustained at their place of work, via their own Occupational Health Dept if there is one. This is for follow up hepatitis B vaccination, and BBV testing as appropriate. As stated above, the need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate, the follow up BBV testing of the injured person can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured person should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- NB All HCWS/persons who have been exposed to HIV infected blood should have follow up post exposure testing, medical evaluation and be offered specialist advice and support whether or not they have received PEP.
- Follow up can be arranged with the Sandyford Sexual Health Advisors for support if required.

Significance of injury

The occupational health/A&E clinician caring for the injured HCW will assess the significance of the injury. A significant injury is one with the potential to transmit a bloodborne virus. The significance of the injury depends on two factors:

1. The type of injury and,
2. The body fluid involved (tables 2 and 3).

Table 2: Injury Type

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

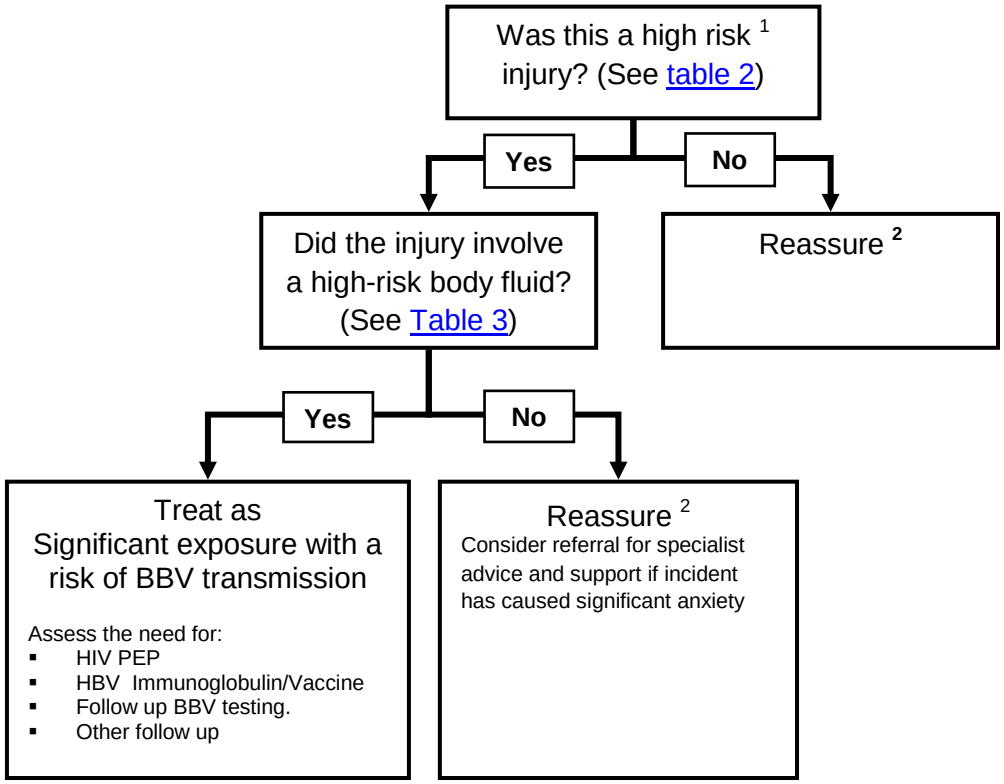
Table 3: Body Fluids

High-Risk Body Fluid **Exposure to any of these fluids whether through percutaneous injury, contact with a mucus membrane, contact with non-intact skin, sexual exposure or sharing injection drug equipment poses a risk.**		**Low-Risk Body Fluid** **Exposure to these fluids is not considered an exposure unless they contain visible blood**
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 Nasal secretions Sputum Sweat Tears

Assessing the significance of the injury

For an injury to be considered significant - other than human bites (see page 30) - both the type of injury incurred and the body fluid involved must be high-risk.

Figure 1: Flow diagram to assess the significance of the injury



1. If the injury involves contact with HIV positive blood (whether or not it is a significant injury) discuss with the Infectious Disease Physician on call.
   Persons who have had an exposure to HIV infected blood should have follow-up post-exposure testing, medical evaluation and be offered specialist advice and support, whether or not they have received HIV PEP.

2. 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.

If the injury has been assessed as significant, consider the BBV risk associated with the source patient. The details of the appropriate actions for each BBV are detailed below (pages 17-23).

1.7 Hepatitis B virus (HBV)

The occupational health/A&E clinician managing the HCW should follow the guidance detailed above. This section refers to exposures following needlestick or similar injury. For management following sexual exposure to HBV (see section 2).

Establish injured HCW's HBV vaccination status

The HCW's HBV vaccination/immune status, if available, should be taken into account when assessing which actions are required for HBV as indicated in table 4. This result may be available from:

- The employee.
- The Occupational Health Department record.
- The West of Scotland Specialist Virology Centre.

For significant injuries

- Offer to take blood for storage.
- Consider the need for hepatitis B vaccine +/- hepatitis B immunoglobulin (HBIG) using the table below (table 4).
- Where indicated, give prophylaxis as soon as possible after the injury has occurred. Do not wait for the source patient blood test results before initiating.
- 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.

For non-significant injuries

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

Table 4: HBV post exposure prophylaxis for reported significant injury

	Significant exposure		Non-significant exposure		
HBV status of person exposed	**HBsag positive source**	**Unknown source**	**HBsag negative source**	**Continued risk**	**No further risk**
≤ 1 dose HB vaccine Accelerated	Accelerated course of HB vaccine* HBIG x 1	Accelerated course of HB vaccine*	Initiate course of HB vaccine	Initiate course of HB vaccine	No HBV prophylaxis. Reassure
≥ 2 doses HB vaccine pre-exposure(anti-HB not known)	One dose of HB vaccine followed by second dose one month later	One dose of HB vaccine	Finish course of HB vaccine	Finish course of HB vaccine	No HBV prophylaxis. Reassure
Known responder HB vaccine (anti-HBs > 10mIU/ml)	Consider booster dose of HB vaccine	Consider booster dose of HB vaccine	Consider booster dose of HB vaccine	Consider booster dose of HB vaccine	No HBV prophylaxis. Reassure
Known non-responder to HB vaccine(anti-HBs < 10mIU/m 2–4 months post-immunisation)	HBIG x 1 Consider booster dose of HB vaccine A second dose of HBIG should be given at one month	HBIG x 1 Consider booster dose of HB vaccine A second dose of HBIG should be given at one month	No HBIG Consider booster dose of HB vaccine	No HBIG Consider booster dose of HB vaccine	No HBV prophylaxis. Reassure

*An accelerated course of vaccine consists of doses spaced at zero, one and two months.
A booster dose may be given at 12 months to those at continuing risk of exposure to HBV.
Source: PHLS Hepatitis Subcommittee (1992).

Table 4 is from the Joint Committee on Vaccination and Immunisation, Green Book[3]

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, people who inject drugs (PWID) and prisoners.

Access to hepatitis B vaccine / HBIG

Occupational Health and A&E have access to stocks of hepatitis B vaccine. Hepatitis B immunoglobulin can be accessed by contacting the on call hospital pharmacist.

Follow-up

- For all HCWs who have sustained a significant injury (irrespective of whether the source patient is high risk or not) arrange follow up with Occupational Health. This is for follow up hepatitis B vaccination, and BBV testing as appropriate. The need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative, taking into account the window period where appropriate, the follow up BBV testing of the injured HCW can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured HCW should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- For non HCWs who have sustained a significant injury (irrespective of whether the source patient is high risk or not) follow up should be arranged with the GP, or if the

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

injury was sustained at their place of work, via their own Occupational Health Dept if there is one. This is for follow up hepatitis B vaccination, and BBV testing as appropriate. The need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate, the follow up BBV testing of the injured person can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured person should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.

- Occupational Health will give further doses of hepatitis B vaccine as required, to complete the vaccination course. If the injured party is at continuing risk of exposure to HBV, e.g. a HCW, check their antibody titre 2-3 months after completing the vaccination course to establish whether there has been an adequate response to the vaccine. Other workers who require HBV vaccine should go to their own occupational health for follow up. Members of the public should go to their GP for follow up.

1.8 HIV

The Occupational Health/A&E clinician managing the injured HCW should follow the guidance as detailed above. This section refers to management following a needlestick or similar.

For management following sexual exposure to HIV (see section 2).

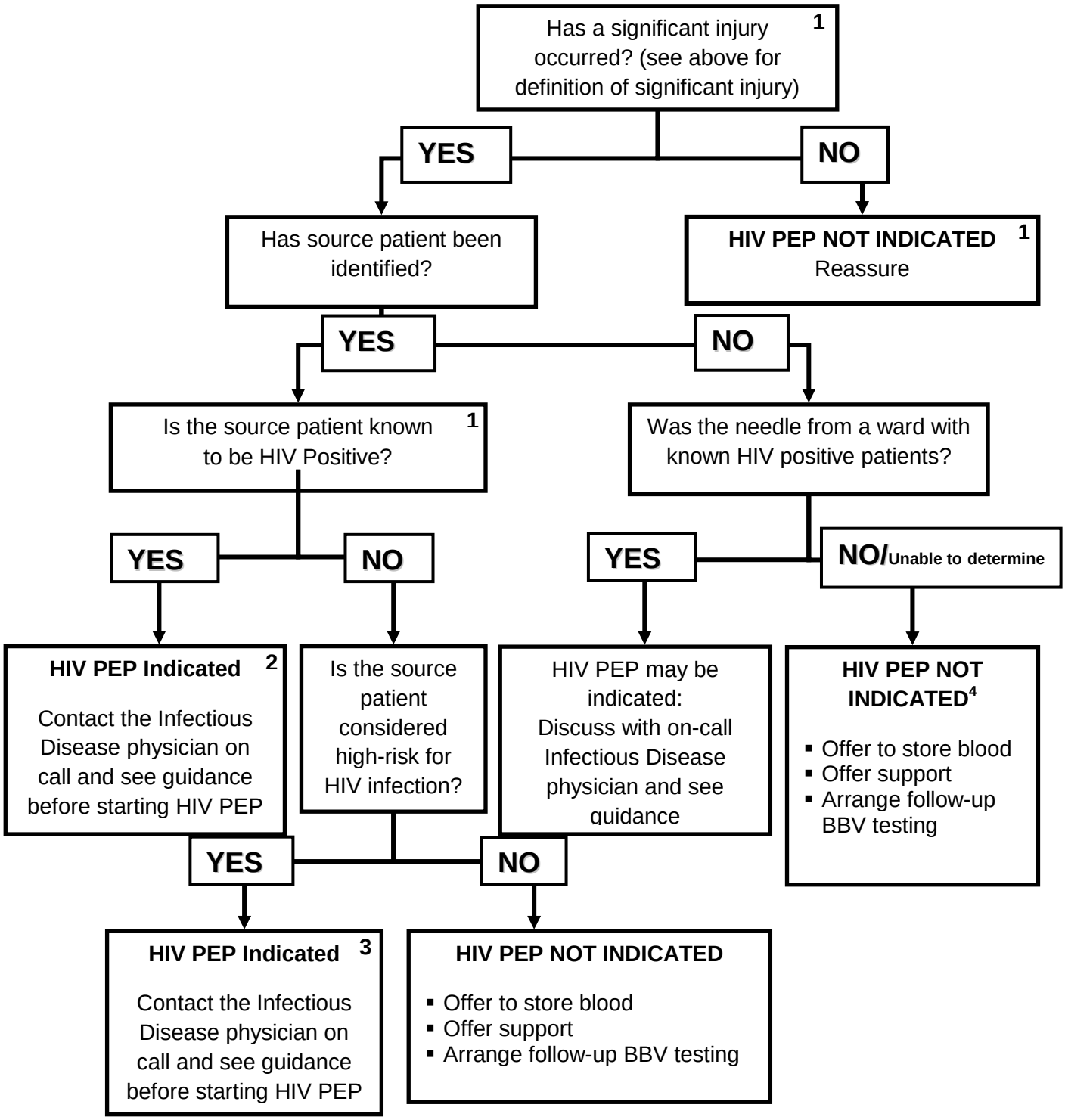
For all significant injuries

- Offer to take blood for storage.
- For all significant injuries consider the need for HIV PEP - see flow diagram below (figure 2).
- Time is of the essence and therefore if HIV PEP is indicated, start therapy within one hour of injury. If the injury occurred more than 72 hrs ago, discuss with the on-call Infectious Disease physician before initiating HIV PEP.

Arrange follow-up as appropriate:

- If HIV PEP has been started arrange follow-up via the Infectious Disease physician on-call at the Brownlee Centre (contact via Gartnavel General Switchboard on 0141 211 3000).
- If the injury involves contact with HIV infected blood (whether or not a significant injury) discuss with the Infectious Disease physician oncall.
- All persons who have had an injury which involved exposure to HIV infected blood should have follow-up post-exposure testing, and support, whether or not they have received HIV PEP. Encourage all HCWs exposed to blood to seek medical advice about any acute illnesses that occur during the follow-up period.
- Undertake HIV antibody/antigen testing at 6 weeks, and 12 weeks depending on the source patient HIV test result if and when available taking into account the window period.
- All HCWs should be followed up by the Occupational Health Department regardless of whether HIV PEP is indicated.
- Offer advice and support in the Occupational Health Department or via Sandyford Sexual Health Advisors see section 3 for contact details.

Figure 2 : Flowchart to determine the need for HIV PEP



1. If the injury involves contact with HIV positive blood (whether or not it is a significant injury) discuss with ID Physician on call.
   Persons who have had an injury which involved exposure to HIV infected blood should have follow-up post-exposure testing, medical evaluation and be offered specialist advice and support, whether or not they have received HIV PEP.
2. 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.
3. HIV PEP can be discontinued of the source patient HIV antibody test is negative (taking into account the risk of a source patient window period of infection).

Starting HIV PEP:

What the Infectious Disease consultant needs to know

Injury

- Details and time of the injury.
- Did the injury occur more than 72 hours ago?

Injured HCW/person

- Confirmation that first aid measures have been undertaken.
- Does the injured HCW/person have an existing medical condition?
- Is the injured HCW/person taking any medications (including herbal remedies) that might intact with HIV PEP? See information leaflet provided in HIV PEP packs for a list of common drug interactions. Further information can be accessed at www.hiv-druginteractions.org
- List of medical conditions and medications of the injured HCW/person.
- Could the injured HCW/person be pregnant?

Source patient

- Location of the source patient.
- Name of consultant with current clinical responsibility for the source patient.
- Name and contact details of person who undertook source patient BBV risk assessment.
- HIV status (if known) and outcome of source patient BBV risk assessment.
- Risk of source patient window period infection
- If the source patient is HIV positive, are they attending the Brownlee Centre for treatment?
- If the source patient is HIV positive but does not attend the Brownlee Centre, is their current or former treatment regimen known?
- Name of HIV specialist with clinical responsibility for the source patient (if known HIV positive).
- List of medications of source patient (if known HIV positive).

Dispensing HIV PEP

- Take baseline bloods: FBC, U&Es, LFTs, lipids, glucose. (and blood for storage page 20)
- Give the HIV PEP starter pack and information leaflet.
- Arrange follow-up by contacting the Infectious Disease physician on call for the Brownlee Centre (contact via Gartnavel Switchboard, Tel: 0141 211 3000). Injured HCW/persons will be offered urgent follow-up. All the information above must be provided when arranging the appointment.
- Liaise with clinician undertaking the source patient BBV risk assessment to ensure source blood has been sent for urgent BBV testing – HIV PEP may be discontinued if the test result is HIV negative (taking into account the risk of a source patient window period infection, section 1.3).

HIV PEP starter packs

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

1.9 Hepatitis C virus

The Occupational Health/A&E clinician managing the injured HCW/person should follow the guidance as detailed above. The guidance below refers to exposures following needlestick or similar injury. For management following sexual exposure to HCV (section 2).

For all significant injuries:

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

Follow-up

If a significant injury has occurred (pages 15 and 16) arrange follow up:

- Offer to take blood for storage
- For all HCWs who have sustained a significant injury (irrespective of whether the source patient is high risk or not) arrange follow up with Occupational Health this is for HBV vaccination and for BBV testing (including HCV testing) as appropriate. The need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate the follow up BBV testing of the injured HCW can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured HCW should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- For non HCWs follow up should be arranged with the GP, or if the injury was sustained at their place of work, via their own Occupational Health Dept if there is one. This is for follow up hepatitis B vaccination, and BBV testing (including HCV testing) as appropriate. The need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate, the follow up BBV testing of the injured person can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured person should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- Offer advice and support in the Occupational Health Department or via Sandyford Sexual Health Advisors if required (section 3 for contact details).

HCV test results

If the injured HCW/person tests positive, prompt referral should be made to a specialist HCV centre (section 3 for contact details).

1.10 Other situations involving needlestick or similar injuries

The general approach described above can be applied to most situations; however, the situations where the process differs are detailed below.

Testing when the source patient is unable to give consent for BBV testing

When the source patient has died, is unconscious or unable to give informed consent for any other reason, seek further advice from the on-call Infectious Diseases physician before undertaking any BBV testing of the source patient. The source patient's next of kin should not be asked to provide consent in this situation. The decision to start HIV PEP should be made on the basis of a source patient BBV risk assessment and, as usual, should not be delayed.

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 *the source patient assessment letter* (Appendix 1) should be asked, not only regarding the child, but also the mother where appropriate. 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. Do not take blood from children under 18 months without prior discussion with the virology lab as to appropriate specimens.

Establishing the BBV risk associated with the source patient and BBV testing of the source patient following an occupational exposure in the community healthcare or dental healthcare setting

The Occupational Health Department should be informed immediately following any significant injury that takes place in the community or dental healthcare setting. The Occupational Health Team will then be able to offer guidance on conducting the source patient BBV risk assessment and managing the injured HCW. 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 HIV PEP is indicated it should, ideally, be started within one hour of exposure.

The source patient BBV risk assessment should be undertaken by a GP, senior nurse, or senior member of the dental team at the time that the incident occurs. The injured HCW should not conduct the risk assessment. If possible, test the source patient for BBVs before they leave the surgery. If this is not possible, ensure that practice staff have a record of the source patient's contact telephone number and their GP details. The source 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 advise on the how to proceed with the BBV risk assessment and testing of the source patient.

Following needlestick or similar injury in a member of the public

Initial actions:

- Advise the injured person to apply first aid (Page 9).
- Undertake an initial assessment to confirm if a significant injury has occurred (Page 17-23) and if so, refer to A&E immediately for further assessment and management.
- If a significant injury has not been sustained, then referral to the A&E is not required, and the member of the public can be reassured.

The significance of the injury and, if available, BBV risk assessment of the source patient, should be used to decide whether HIV PEP/HBV immunisation/ HBV Immunoglobulin/follow up for BBV testing is required.

Offer to take blood for storage, and follow the general guidance in section one and guidance for each BBV on pages 17 –23.

Follow up arrangements:

- Arrange follow up with the Infectious Disease Physician if HIV PEP started or if you are unsure.
- Follow up should be arranged with the GP, or if the injury was sustained at their place of work, via their own Occupational Health Dept if there is one. This is for follow up hepatitis B vaccination, and BBV testing as appropriate. The need for follow up BBV testing will be based on the source patient's BBV test results if available. If the source patient's BBV test results are negative taking into account the window period where appropriate, the follow up BBV testing of the injured person can be stopped. If any of the source patient's BBV test results are positive or not available follow up BBV testing of the injured person should continue. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks. The injured person's GP or Occupational Health Dept should be given written details of the incident and what follow up is required. This should include details of the rest of the HBV immunisation schedule and BBV testing, and when these are required.
- NB All persons who have been exposed to HIV infected blood should have follow up post exposure testing, medical evaluation and be offered specialist advice and support whether or not they have received PEP.
- Follow up can be arranged with the Sandyford Sexual Health Advisors for support if required.

Injuries from needles discarded in the community e.g. in the park / street

The risk of BBV 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 HCV being acquired following injury with such needles.

Following such an injury, basic first aid should be undertaken (page 9) and, after an initial assessment to confirm that a significant injury has occurred, (page 15-16), the patient should be referred to A&E for further management. The A&E clinician should follow the guidance for each virus as above including:

- Take blood for storage. It is usually 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.

Generally,

- Hepatitis B vaccination/immunoglobulin should be given as per Table 4.
- HIV PEP is not indicated unless there is reason to believe the needle is from an HIV infected source.
- Give tetanus vaccination as appropriate as per the green book[4].

Follow-up

Adults

- Follow up should be arranged with the GP, or if the injury was sustained at their place of work, via their own Occupational Health Dept if there is one. This is for follow up hepatitis B vaccination as per Table 4, and BBV testing.
- GP to take a sample for all BBVs (HCV and HBV tests at 6, 12 and 24 weeks post injury and HIV at 6 and 12 weeks).
- Sandyford Sexual Health Advisors (see section 3 for contact details) can provide support if required.

Children

- Children can be offered follow up testing at 3 months. This should be done by referral to the paediatric consultant.

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

1.11 Human bites that break the skin

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 as per the Green book[5].

- Give antibacterial prophylaxis as appropriate[6].

- 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 and 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.

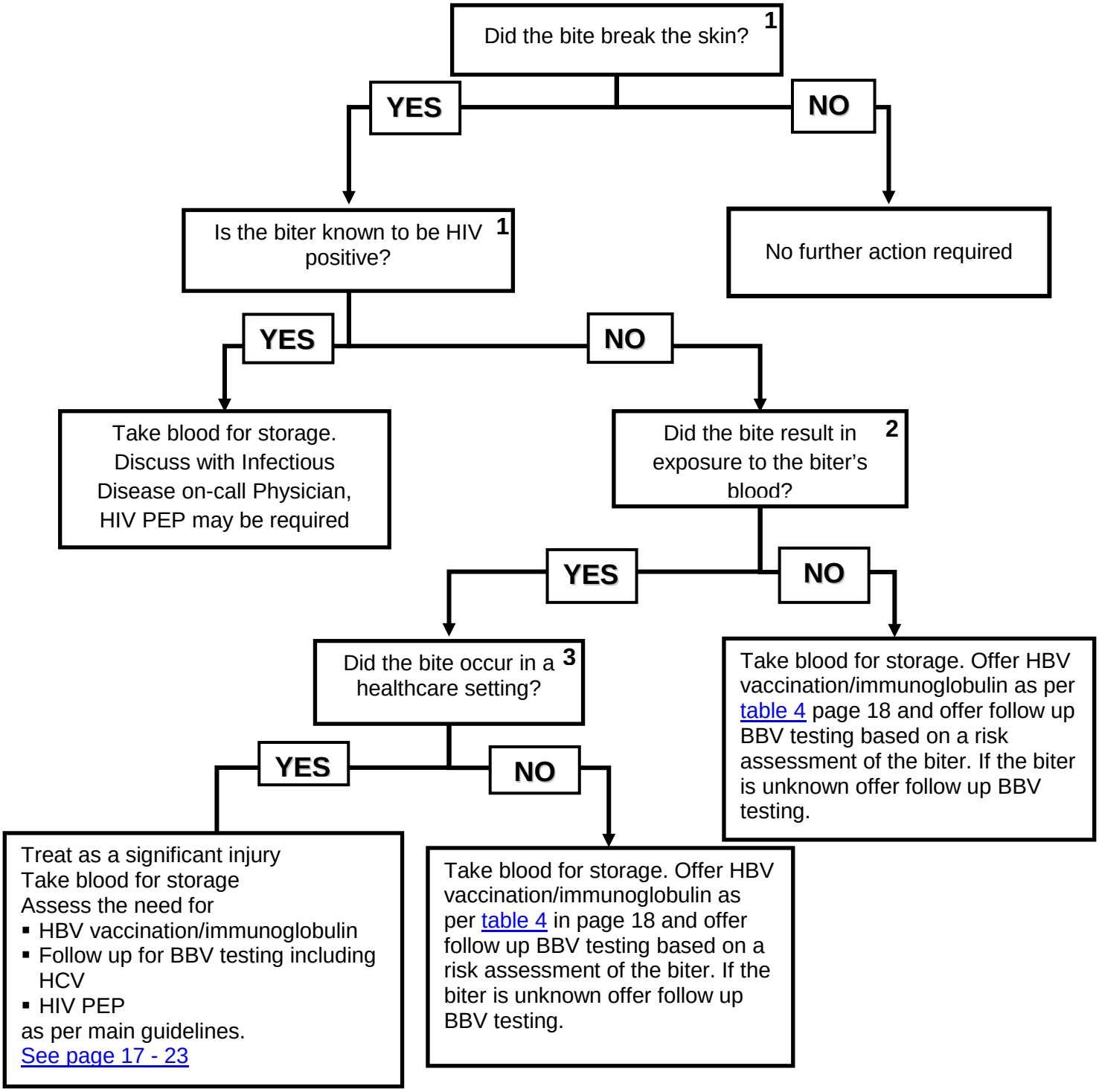
- Take blood for storage as appropriate ie if follow up BBV testing is indicated .

- Assess the risk of BBV transmission and manage appropriately (see flowchart page 30).

- If the biter is available or also presenting the BBV risk to the biter should be considered and managed as per the guidance above.

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

Figure 3 : Flowchart: risk assessment of human bites that break the skin



1. If the injury involves contact with HIV positive blood (whether or not it is a significant injury) discuss with Infectious Disease Physician on call.
   Persons who have had an injury which involved exposure to HIV infected blood should have follow-up post-exposure testing, medical evaluation and be offered specialist advice and support, whether or not they have received HIV PEP.
2. 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.
3. For bite injuries occurring outside the healthcare 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 positive.

1.12 Management of patients who have been exposed to blood from a HCW

Circumstances that could allow the transmission of BBVs from a HCW to a patient include:

- Visible laceration of 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[7]. 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 supervisor.
- Inform the occupational health department without delay.
- Complete a DATIX form.

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

Someone other than the injured HCW e.g. a senior doctor, should undertake a risk assessment 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 HIV PEP if indicated.

If the HCW tests positive for any BBVs, 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 HIV PEP in the absence of a positive HIV test for the HCW.

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 Government 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

Section 2: Management of sexual exposures

2.1 Management of sexual exposure to HIV infection

The management of sexual exposure to BBVs is based on a risk assessment.

2.2 Risks of HIV transmission

The risk of an individual acquiring HIV following a sexual exposure is dependent on the risk that the source is HIV positive (table 5) and the risk of infection following exposure from an HIV positive individual (table 6) (textbox 2).

Textbox 2 risk of HIV transmission

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 HIV viral load and bleeding)

This guideline is based on UK guideline for the use of post-exposure prophylaxis for HIV following sexual exposure (2011) International Journal of STD & Aids 2011; 22:695 – 708

Benn P, Fisher M, and Kulasegaram, R, on behalf of the BASHH PEPSE Guidelines Writing Group Clinical Effectiveness Group

The tables from this guideline are included in this document.

A simplified version of table 8 for use in Accident and Emergency Depts. is included in appendix 4.

The estimated HIV prevalence (including both diagnosed and undiagnosed infection) in adults aged over 15 years in the UK 2009 (table 5).

Table 5: Risk that the source is HIV positive

	HIV prevalence (%)	
Population Group	**Men**	**Women**
Men who have sex with men (MSM)*		
UK	4.4	-
London	8.1	-
Elsewhere in the UK	3.1†	-
Heterosexuals (region of birth)ŧ		
Sub Saharan Africa	3.1	6.2
Elsewhere	0.05	0.03
Injecting drug users§ (IDU ever injected)		
London	0.9	
Elsewhere in the UK	0.4	

* An estimate of the size of the HIV infected MSM population was 3.4 % within the UK, 7.0% within London and 2.8% in areas outside of London (Presanis 2010). This was applied to the male population aged over 15 years (derived from ONS) to provide the population denominator. The numerator was derived from MPES (ibid) adjusted with SOPHID data to take account of MSM living with HIV aged over 59 years.

† The prevalence of HIV among MSM varies across the UK and is higher in metropolitan areas with large MSM populations, including Brighton and Manchester, where community based prevalence studies have suggested rates of 13.7% and 8.6%, respectively.

ŧ The denominator for sub-Saharan African-born was approximated from ONS ("black or black British, black African") aged over 15 years. Heterosexuals 'born elsewhere' were estimated from ONS (total population minus the black African population) aged over 15 years. The numerator was derived from MPES (Presanis, 2010) adjusted with SOPHID data to take account of heterosexuals living with HIV aged over 59 years. These data are for England and Wales only.

§ Current and former injectors are included. An estimate of the size of the IDU population was derived from Harris (2011). This was applied to the adult population (derived from ONS) to provide the population denominator. The numerator was taken from MPES (Presanis, 2010). This was adjusted with SOPHID data to account for IDUs living with HIV aged over 59 years.

Contemporaneous prevalence estimates can be obtained at http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/HIV/

Prevalence rates for exposures outside of the UK or for individuals recently moved to the UK can be obtained at http://www.unaids.org

N.B: the prevalence of individuals who have moved to the UK tends to be below that in their original country.

Local prevalence estimates

The estimated population prevalence of HIV among MSM in NHS GGC is 3-5%; however, individuals within this group may have a higher risk of infections.

High prevalence groups, for the purpose of this guidance, are those where there is a significant likelihood of the source being HIV positive. Within the UK (and NHSGGC) at present this is:

- Men who have sex with men. MSM from Glasgow are included in this high prevalence group.
- Individuals who have immigrated to the UK from areas of high HIV prevalence, particularly sub-Saharan Africa.

Factors which increase the risk of HIV transmission

The following factors may increase the risk of HIV transmission:

- A high plasma HIV viral load in the source (this may be particularly relevant during primary HIV infection). Although low or undetectable plasma viral loads reduce the risk, transmission may still be possible.
- Viral loads in the genital tract normally correlate with plasma viral loads. In general the genital tract viral load is also undetectable when the plasma viral load is undetectable. When this is not the case the viral load in the genital tract is usually low.
- Breaches in the mucosal barrier such as mouth or genital ulcer disease and trauma following sexual assault or first intercourse may increase the risk of HIV acquisition. Menstruation or other bleeding may also facilitate transmission.
- STIs enhance HIV transmission in epidemiological studies and increase HIV shedding from the genital tract. (This may not be the case in individuals receiving effective ART).
- The risk of HIV transmission is likely to be greater if ejaculation occurs.
- Non circumcision may increase the risk of HIV acquisition. Circumcision has been shown to significantly reduce HIV acquisition among heterosexual men in high prevalence countries, but has little impact upon HIV acquisition among MSM.

Table 6 : Risk of HIV transmission following an exposure from a known HIV positive individual

Type of exposure	Estimated median (range) risk of HIV transmission per exposure (%)
Receptive anal intercourse	1.11 (0.042 – 3.0%)
Insertive anal intercourse	0.06 (0.06 – 0.065%)
Receptive vaginal intercourse	0.1 (0.004 – 0.32%)
Insertive vaginal intercourse	0.082 (0.011 – 0.38%)
Receptive oral sex (giving fellatio)	0.02 (0-0.04)
Insertive oral sex (receiving fellatio)	0
Blood transfusion (one unit)	(90 - 100%)
Needlestick injury	0.3 (95% CI 0.2-0.5%)
Sharing injecting equipment	0.67
Mucous membrane exposure	0.63 (95% CI 0.018-3.47%)*

NB: All sexually related risk probabilities are for unprotected sexual exposure; it is assumed similar risks will exist where condom failure has occurred.

* The writing committee has concern regarding the risk estimate following mucous membrane exposures, which is derived from a single study including only small numbers of health-care workers exposed to HIV following mucous membrane exposures. This is likely to significantly overestimate the risk.

Table 7 : Examples of estimates the risk of HIV transmission according to the likelihood that the source is HIV positive and the risk following in style exposed with someone known to be HIV positive.

Type of exposure	Population group	Risk of HIV transmission (source of unknown HIV status)*		Risk of HIV transmission (source is HIV positive)*	
Unprotected receptive anal intercourse	MSM in London	0.081 x 1.11% = 0.09%	1/1,112	1 x 1.11% = 1.11%	1/90
	MSM elsewhere in the UK	0.031 x 1.11% = 0.034%	1/2,906†		
Unprotected insertive anal intercourse	MSM in London	0.081 x 0.06% = 0.0049%	1/20,408	1 x 0.06% = 0.06%	1/1667
	MSM elsewhere in the UK	0.031 x 0.06% = 0.0019%	1/52,632†		
Unprotected receptive oral intercourse (giving fellatio)	MSM in London	0.081 x 0.02% = 0.0016%	1/62,500	1 x 0.02% = 0.02%	1/5000
	MSM elsewhere in the UK	0.031 x 0.02%= 0.0006%	1/166,667		
Unprotected receptive vaginal intercourse	Heterosexual man born in sub-Saharan Africa	0.031 x 0.1% = 0.0031%	1/32,258	1 x 0.1% = 0.1%	1/1000
	Heterosexual man born in UK	0.005% x 0.1% = 0.0005%	1/200,000		
Unprotected insertive vaginal intercourse	Heterosexual woman born in sub-Saharan Africa	0.062% x 0.082% = 0.0051%	1/19,608	1x 0.082% = 0.082%	1/1220
	Heterosexual woman born in UK	0.003 x 0.082% = 0.00025%	1/400,000		
Sharing injecting equipment	IDU in London	0.009% x 0.67% = 0.006%	1/16,667	1 x 0.67% = 0.67%	1/149
	IDU elsewhere in the UK	0.004 x 0.67% = 0.0027%	1/37,037		

MSM = men who have sex with men; IDU = intravenous drug user

*Risk is calculated using data from Tables 5 and 6 according to the formula; risk of HIV transmission = risk the source is HIV positive x risk of exposure

In some circumstances the risk of HIV transmission is clearly greater than that following occupational exposure in which PEP is routinely considered 1/300 for a known HIV positive 'source'[1] There may be special circumstances that may increase or decrease the risk of an exposure, including the presence of concurrent sexually transmitted infections, circumcision or acute HIV seroconversion

† The prevalence of HIV amount MSM across the UK varies and is high in some regions, including Brighton and Manchester

2.3 PEPSE: Risk assessment approach

A risk benefit analysis should be undertaken for every individual presenting following an exposure, and the decision to initiate HIV PEPSE made on a case by case basis. This should include:

- The risk of transmission according to exposure (table 6).
- The risk of the source being HIV positive (table 5).
- If available, the viral load in the source.

Co-factors such as STIs, viral load and bleeding may affect the risk estimate. Where individuals have had multiple exposures within 72 hours of presentation, the cumulative risk should be considered.

The situations where PEPSE should be considered are shown in (table 8). It is recommended that PEPSE is indicated when the estimated risk is 1 in 1000 or greater.

Where the estimated transmission risk is between 1 in 1000 and 1 in 10,000 PEP may be considered. When the exposure is classified as 'consider', PEPSE should only be prescribed if there are additional factors that may increase the likelihood of transmission i.e. following sexual assault, in the presence of an STI (i.e. where the source is known to have and STI or the exposed individual has symptoms or signs suggesting an STI) or where the source is suspected to have acute HIV infection.

Scope of recommendations

- The use of PEPSE following potential exposure to HIV is only recommended where the individual presents within 72 hours of exposure. Within that time frame, it is recommended that PEPSE (if given) should be administered as early as possible.
- All 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 PEPSE.

General considerations

- Consideration should be given to the individual already having been infected with HIV and the ability to adhere to and tolerate the proposed antiretroviral regimen.
- The potential exposure to other STIs needs to be considered.
- The wishes of the individual should be considered at all times.

Recommendations for Prescribing HIV PEPSE

Table 4 provides guidance as to whether PEPSE is “recommended”, “not recommended” or should be “considered” in various situations. Further explanation of the advice provided in the table is given below:

- Unprotected receptive anal intercourse with someone of unknown HIV status from a high HIV prevalent group or area (MSM or individuals who have immigrated to the UK from areas of high HIV prevalence (particularly sub Saharan Africa) is included in the “recommend category”, even though the risk may be less than 1/1000 given this is the major route of transmission in the UK.
- Similarly unprotected insertive anal intercourse with someone known to be HIV positive with a detectable viral load is included in the “recommend” category, despite having slightly lower risk estimate, for simplicity and in light of recent data.
- Where the estimated transmission risk is between 1 in 1000 and 1 in 10,000 HIV PEPSE may be considered. When an exposure is classified as “consider” PEPSE should only be prescribed if there are additional factors that may increase the likelihood of transmission i.e. following sexual assault, in the presence of an STI (i.e. where the source is known to have an STI or the exposed individual has symptoms or signs suggesting an STI) or where the source is suspected to have an acute HIV infection. Local seroprevalence estimates should be taken into consideration (page 35). In the absence of additional factors PEPSE should not be prescribed when the exposure is classified as “consider”.
- Where the estimated transmission risk is below 1 in 10,000 PEPSE is not recommended.

Other situations in which PEPSE would be considered

Source individual is known to be HIV positive

When the source individual is known to be HIV positive:

- It is important to determine the viral load, resistance profile and treatment history in the source individual as soon as possible.
- Where the viral load is undetectable it is assumed that the risk will be significantly reduced.
- Where the source is known to be HIV positive with undetectable plasma viral load HIV PEPSE is not recommended unless the exposure is unprotected receptive anal intercourse for which it is recommended.
- If the viral load is not available, follow the guidance as for a detectable viral load.

Source individual is of unknown status

- If the source is from a group or area of high HIV prevalence then PEPSE is recommended following receptive anal sex only.
- High prevalence groups within this recommendation are those where there is a significant likelihood of the source individual being HIV positive. Within the UK at present this is likely to be men who have sex with men (including Glasgow MSM groups) and individuals who have immigrated to the UK from areas of high HIV prevalence (particularly sub Saharan Africa).
- Where the source is not from a group or area of high HIV prevalence the PEPSE is not recommended.

Other circumstances: Sexual assault

Transmission of HIV is likely to be increased following aggravated sexual intercourse (anal or vaginal) such as that experienced during sexual assault. Clinicians may recommend using PEPSE more readily in such situations.

Other factors which may alter the strength of the recommendation

Where factors are present which are believed to influence the probability of HIV transmission, including the presence of STI, seroconversion in the source, or circumcision status, the strength of these recommendations may be increased or decreased as appropriate.

Special scenarios

Pregnancy

Pregnancy is not a contraindication for PEPSE-expert advice should be sought.

Table 8: Situations when post-exposure prophylaxis (PEP) is considered [§]

	Source HIV status*			
	HIV-positive [§]		Unknown from high prevalence group/area*	Unknown from low prevalence group/area
	Viral load detectable	Viral load undetectable		
Receptive anal sex	Recommend	Recommend	Recommend	Not Recommended
Insertive anal sex	Recommend	Not Recommended	Consider[†]	Not Recommended
Receptive vaginal sex	Recommend	Not Recommended	Consider[†]	Not Recommended
Insertive vaginal sex	Recommend	Not Recommended	Consider[†]	Not Recommended
Fellatio with ejaculation[‡]	Consider	Not Recommended	Not Recommended	Not Recommended
Fellatio without ejaculation[‡]	Not Recommended	Not Recommended	Not Recommended	Not Recommended
Splash of semen into eye	Consider	Not Recommended	Not Recommended	Not Recommended
Cunnilingus	Not Recommended	Not Recommended	Not Recommended	Not Recommended

*** High prevalence groups within this recommendation are those where there is a significant likelihood of the source individual being HIV-positive. Within the UK at present, this is likely to be men who have sex with men and individuals who have immigrated to the UK from areas of high HIV prevalence (particularly sub-Saharan Africa)**

[†] **More detailed knowledge of local prevalence of HIV within communities may change these recommendations from consider to recommended in areas of particularly high HIV prevalence**

[‡] PEP is not recommended for individuals receiving fellatio i.e. inserting their penis into another's oral cavity

[§] **If the viral load is not available follow the guidance for viral load detectable.**

Obtaining the information required to undertake a risk assessment: what 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?**
2. **What type(s) of sexual exposure occurred, including use of condoms?**
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 or area?**
6. **Is the patient taking medication (including herbal remedies) that might interact with PEPSE?****

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 Infectious Disease / GUM consultant for further discussion on which antiretrovirals should be given.

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

2.4 Starting HIV PEPSE

Baseline investigations

- FBC, U&Es, LFTs, lipids and glucose should be sent by the prescribing doctor before HIV PEP is commenced.
- Individuals for whom HIV PEPSE 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; however, a baseline HIV test can be performed with appropriate advice and support at follow-up at Sandyford.

Patient information

- The rationale for HIV PEP:

  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 effectiveness of HIV PEP:

  Prospective randomised controlled trials to determine the effectiveness of HIV PEP are not feasible due to a) the ethical problems of withholding a potentially effective 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 effectiveness 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 HIV PEP:
  See patient information leaflet supplied in HIV PEP packs.
- The follow-up arrangements with the Sandyford:

  Patients who are prescribed HIV PEPSE should be followed up at the Sandyford at the first available opportunity. Patients should attend Sandyford Central, 2-6 Sandyford Place, Glasgow G3 7NB. Clinics are open on a walk-in basis or they can call the Sexual Health Advisors to arrange follow-up. They will also have to see the GUM consultant at 2 and 4 weeks after starting PEP.

  Additional supplies of HIV PEPSE will be provided through Gartnavel General Hospital pharmacy.

  Those receiving PEPSE should also be informed of:
  - The need to continue PEPSE for 4 weeks if the baseline HIV test is negative.
  - The need to continue to have a follow up HIV test 12 weeks post completion of PEPSE.
  - The need for safer sex for the following four months.
  - Issues around disclosure.
  - Coping strategies.

Other points to consider

- Consider the risk of transmission of other bloodborne viruses as detailed below.
- Consider the need for post-coital contraception.

Follow up of patients who are not being prescribed HIV PEPSE

For patients who are not prescribed HIV PEPSE:

- Consider the risk of transmission of other bloodborne viruses as detailed below.
- Consider the need for post-coital contraception.
- Advise of the importance of having a sexual health screen and be given details of Sandyford Services (see Section 3 for contact details).
- Individuals can be referred directly to Sandyford Sexual Health Services during opening hours (contact Sexual Health Advisors on 0141 211 8634, Monday to Friday 09:00-16:30). Individuals presenting outwith these hours should be referred to A&E and managed according to this guideline (a simplified algorithm for use in A&E is included in Appendix 4.

2.5 Management of sexual exposure to Hepatitis B infection

Sexual partners of individuals with known hepatitis B infection

Sexual partners of individuals suffering from acute hepatitis B infection, 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 are already infected. Contacts shown to be HBsAg, anti-HBs or anti-HBc positive do not require further immunisation.

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 people who inject drugs (PWID). 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 the person has been exposed to someone from the above risk groups, commence an accelerated course* of hepatitis B vaccine.

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, PWID and prisoners*.

Follow up

- Follow up BBV testing will be undertaken at the Sandyford. Follow up BBV testing comprises HIV at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks. Patients are also advised to:
    - Avoid unprotected sex & blood donation until follow-up serology.
    - Contact clinic if symptoms of hepatitis.

* Immunisation against infectious disease: The Green Book. Department of Health 2006

2.6 Management of sexual exposure to Hepatitis C infection

People who have had a sexual partner who is HCV infected should be offered advice and if appropriate testing for HCV - refer to the Sandyford (section 3 for contact details). Blood should be taken to determine if the person is already infected. Follow up HCV testing should be undertaken at 6.12 and 24 weeks.

Section 3: Further information/Contact Details

3.1 Laboratory/Clinic Information

Laboratory information

Specimens taken for storage and for BBV testing should be sent to The West of Scotland Specialist Virology Centre at Glasgow Royal Infirmary (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, however, if this is not readily available; fill a 4 ml Full Blood Count bottle.

During working hours (i.e. Monday to Friday, between 08:45am- 5pm) the West of Scotland 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 clinician 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. All positive HIV antibody tests will require confirmatory testing: this will be undertaken on the next working day.

Telephone: 0141 201 8722

Delivery Address for samples (08:45 - 17:00):

West of Scotland Specialist Virology Centre,
Main Specimen Reception (Level 4),
New Lister Building,
Glasgow Royal Infirmary
10-16 Alexandra Parade,
Glasgow
G31 2ER

Outwith these times testing should be arranged with the on-call virologist.

Out of hours via switchboard (24 hours):**0141 211 4000**

Delivery address for urgent Out of Hours Samples (17:00 and 08:45)

Urgent out of hours samples once agreed with the on-call virologist, should be dropped off at the Wishart Street Emergency Admissions entrance of the Princess Royal Maternity.

- A map can be viewed on the WSSVC website
- Satellite navigation use postcode G31 2HT
- Diagonally opposite the entrance is Crystal Canopies Ltd, Crystal House.
- Enter under the blue canopy. On the right hand wall, before the security office is a black box for urgent virology samples

GARTNAVEL GENERAL SWITCHBOARD: Telephone 0141 211 3000

BROWNLEE CENTRE, GARTNAVEL GENERAL HOSPITAL

To arrange follow-up:
Contact doctor on-call for Brownlee via Gartnavel General Switchboard (24 hours) 0141 211 3000.

For specialist advice:
Contact on-call Infectious Disease physician via Gartnavel General Switchboard (24 hours) 0141 211 3000 (page – 5295)

SANDYFORD SEXUAL HEALTH SERVICES, 2-6 SANDYFORD PLACE, GLASGOW G3 7NB

For professional and patient advice and support, including post exposure advice and support, and to arrange anonymous testing:

Sexual Health Advisors: **Tel: 0141 211 8634**.

This number can be also given to patients (contact details can be left on answering machine and health advisors will call back).

For routine sexual health screens:

Patients can arrange an appointment at the Sandyford Central which is open 5 days a week.

Services are also available at Sandyford Hubs and Satellites in community locations across NHS GGC.

For details of locations, services and opening times phone the Sandyford on 0141 211 8130 or check www.sandyford.org

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 0141 211 3000.

Professional Helpline – 0141 211 8646

For support and advice around clinical issues, the professional helpline is available Monday to Friday 9.00-12.30 and 1.00-4.30 pm. Calls are answered by an experienced sexual health nurse who also has access to medical staff.

PAEDIATRICS

Royal Hospital for Children - Glasgow
1345 Govan Road
Govan
Glasgow
G51 4TF

For specialist advice and referral for follow-up testing contact on-call Infectious Disease consultant via switchboard on 0141 201 0000.

OCCUPATION HEALTH SERVICE - NHSGG&C

If you need to report a needlestick or exposure to body fluids incident, or require advice, telephone **0141 201 0595.**

The line is open Monday to Friday, 8am - 6pm.

Any incidents that occur out with these times should be reported to your local Accident & Emergency unit. Please ensure that you then report your injury to Occupational Health on the next working day.

For advice or an appointment, please contact our hub:

The Occupational Health Service is located on the 6th floor of the hospital.
West Glasgow ACH
Dalnair Street
Glasgow
G3 8SJ

Main Number: 0141 201 0600

BLOOD TRANSFUSION SERVICE

Tel: 0141 357 7700 (24 hours)

Section 4: Appendices

Appendix 1: Source patient BBV risk assessment letter

Dear Patient,

I would like to inform you that a member of staff has come into contact with your blood or body fluids. When this happens we assess if the member of staff has been put at risk of any infectious diseases i.e. HIV, Hepatitis B or Hepatitis C. If this is the case we can give the member of staff treatment to prevent infection occurring. This treatment needs to be given very quickly if potential infection is to be avoided.

To make this assessment we need to ask two things of you:

1. that you answer some personal questions. These are important to help us understand if there is likely to be any risk to the staff member and if treatment is required.
2. your permission to take a blood sample to test for Hepatitis B and C, and HIV infections.

Please complete the questions below. Once you have completed them the information provided will be entered onto another form which does not have your name on it, and this letter will be destroyed. The form will be passed to the doctor looking after the injured member of staff.

A doctor/nurse will explain the blood tests to you, make arrangements to give you the results, and organise any follow up that might be required.

The results of your blood test will be sent to the doctor caring for the injured member of staff to help ensure the member of staff is getting the right treatment as quickly as possible if it is required.

We apologise for the inconvenience this has caused to you and are very grateful for your help.

Once again, thank you very much for your assistance in this matter.

Yours sincerely,

Occupational Health Service

Please answer the following questions:

Question 1 Have you ever been diagnosed with HIV Yes ❑ No ❑

Question 2 Have you ever been diagnosed with Hepatitis B Yes ❑ No ❑

Question 3 Have you ever been diagnosed with Hepatitis C Yes ❑ No ❑

Question 4 Have you ever injected drugs? Yes ❑ No ❑

Question 5 Have you ever had sex with anyone who injected drugs? Yes ❑ No ❑

Question 6 If you are male, have you ever had sex with another man? Yes ❑ No ❑

Question 7 Have you ever had sex with someone from a country outside the UK, Western Europe, North America, Australia or New Zealand?

Yes ❑ No ❑

If so please state the country _____

Question 8 Have you ever had a blood transfusion in a country outside UK, Western Europe, North America, Australia or New Zealand?

Yes ❑ No ❑

If yes, please state the country? _____

Question 9 Have you ever had an operation or injection in a country outside UK, Western Europe, North America, Australia or New Zealand?

Yes ❑ No ❑

If yes, please state the country? _____

Question 10 Are you from a country outside the UK, Western Europe, North America, Australia or New Zealand?

Yes ❑ No ❑

If yes please state which country you are from _____

Question 11

For those with identified risk factors, is there any risk of a window period infection? Yes ❑ No ❑

Please give details_____

For the clinician undertaking the BBV risk assessment:

When this form has been completed with the patient please:

- 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.
- Once this has been undertaken please destroy the *source patient assessment letter.*
- Follow actions in the NHS GGC guidance and summarised on the *source patient BBV risk assessment form (Appendix 2).*
- *Make arrangements for the source patient to receive the BBV test results and record these arrangements in the source patient's case notes.*

Appendix 2 : **Source patient BBV risk assessment form**

Refer to : MANAGEMENT OF NEEDLESTICK INJURIES AND EXPOSURES TO BLOOD AND HIGH-RISK BODY FLUIDS GUIDELINE

PART A : Anonymised source patient risk assessment form: for use following needlestick or similar injury

Name of injured HCW :_____ **Location where injury took place :** _____

Consultant/GP responsible for source patient :_____

Contact number: _____ **Date :** _____

IMMEDIATE ACTIONS (Click here for full guidance)

1. **Risk assess the source patient**
   a. Undertake the source patient BBV risk assessment urgently, Use source patient risk assessment letter – Appendix 1)
   b. Review of the case notes of the source patient
   c. Speak to the source patient's medical team
2. **Decide on the results**
   a. Establish if the source patient is known to have a bloodborne virus or is high risk for a bloodborne virus infection. If the source patient answers 'yes' to any of questions 4 – 10, then they are HIGH RISK for bloodborne virus infection.
   b. Is there a risk of a source patient window period infection?
3. **IMMEDIATELY COMMUNICATE THE RESULTS**
   a. TELEPHONE the occupational health/A&E clinician looking after the injured HCW with an initial verbal report of the results and details of the source patient BBV risk assessment.
   b. Include details of when the source patient BBV test results will be available
   c. Complete this form and forward to Occupational Health/A&E as appropriate by fax or by giving it to the injured HCW in a sealed envelope to take with them. Do not delay referral of the injured HCW (HIV PEP should be started within one hour).
4. **BBV testing**
   a. Consent and test the source patient for BBVs
   b. Arrange urgent BBV testing with the lab. (Telephone the on-call virologist) tel : 0141 211 3000
5. **Record your actions**
   a. 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.
   b. Record your name, grade and contact details in source patient's case notes
   c. Destroy the source patient BBV risk assessment letter**.**
6. **Source patient follow up**
   a. Arrange follow up for the source patient to receive the BBV test results, and if any positive results make appropriate referral arrangements as per GGC guidance
   b. Advise the need for repeat testing to cover the window period if appropriate
   c. Inform the nurse in charge of the source patient and the consultant of the source patient of the results/need for follow up.

PART B : To be completed by the clinician undertaking the source patient BBV risk assessment

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

_____

_____

(***Please tick appropriate box***)	**Yes**	**No**
Outcome of risk assessment:		
Has the source patient been diagnosed with a blood borne virus infection?	❑	❑
Following discussion with the source patent's medical team, does the patient have any possible syndrome related to HIV (could they have a new infection or acute infection)?	❑	❑
Is the patient HIGH RISK for blood borne virus?	❑	❑
Is the source patient at risk of a window period infection ?	❑	❑
Give details:		
Communicating the source patient BBV risk assessment to the occupational health/A&E clinician looking after the injured HCW		
Has the Occupational Health/A&E clinician looking after the injured HCW been informed of the BBV risk status of the source patient?	❑	❑
Source patient BBV testing		
Has consent been sought and granted for source blood to be tested for BBV? Has the sample been taken? When will the results be available? Date_____Time_____	❑ ❑	❑ ❑
Source patient follow up		
Has follow up to give the source patient the results of BBV testing and advice been arranged?	❑	❑

Clinician looking after the source patient

Clinician's name_____ **Post**_____

Page/contact number _____

PART C : To be completed by the occupational health/A&E clinician managing the injured HCW/person

ACTIONS

1. **See the injured HCW/person within 1 hour of the injury**
2. **Assess the significance of the injury**
   a. For an injury to be significant both the type of injury and the body fluid involved must be high risk.
3. **Receive the source patient BBV risk assessment**
   a. Discuss the result and details of the source patient BBV risk assessment with the clinician looking after the source patient.
   b. Receive the source patient risk assessment form.
4. **Injured HCW/person**
   a. Decide on the need for HIV PEP/ HBV immunisation/immunoglobulin/ follow up BBV testing based on the above (follow NHS GGC guidance).
   b. If giving HIV PEP or if unsure contact the Infectious Disease physician on call.
   c. Give HIV PEP/ HBV vaccination/immunoglobulin / follow up BBV testing as appropriate.
   d. Take blood for storage from the injured HCW/person.
5. **Arrange all required follow up for the injured HCW/person with**
   a. Infectious Disease physician at the Brownlee if HIV PEP is given.
   b. Occupational health (HCW) or GP (others) for HBV vaccination and follow up BBV testing as required.
   c. Referral to Sandyford services for support if required.
   d. Instruct the injured HCW to inform occupational health regardless of the outcome of the risk assessment.
6. **Source patient blood results**
   a. Advise with the clinician looking after the source patient re who is to be contacted when these are available.
   b. Inform the clinician looking after the injured HCW/person of the anonymised source patient BBV test results so that the injured HCW/person's need for HIV PEP/ HBV/ follow up BBV testing can be reviewed.

PART D : To be completed by the occupational health/A&E clinician managing the injured HCW/person

Management of the injured HCW/person (***Please tick appropriate box***)	**Yes**	**No**
Assessment of the injury		
Has first aid been undertaken?	❑	❑
Was the type of injury high risk?	❑	❑
Was the body fluid assessed as high risk?	❑	❑
Is this a significant injury?	❑	❑
Source patient BBV risk assessment		
Has the source patient been diagnosed with a BBV?	❑	❑
Does the source patient have a syndrome related to HIV?	❑	❑
Is the patient high risk for any BBV?	❑	❑
Is there a risk of a window period infection?	❑	❑
Give details:_____		
Injured HCW/person		
HBV vaccination given?	❑	❑
HBV immunoglobulin given?	❑	❑
Follow up BBV testing	❑	❑
HIV PEP commenced?	❑	❑
Follow up of the injured HCW/ person arranged with		
Infectious Disease physician Brownlee (HIV PEP)	❑	❑
Occupational health (HCW) or GP (others)	❑	❑
Sandyford services for support if required	❑	❑
Occupational health for all HCWs regardless of outcome of the assessment	❑	❑
Source patient BBV test results		
Have the arrangements for who is to receive the anonymised source patient BBV test results been made with the clinician looking after the source patient?	❑	❑
Has the clinician looking after the injured HCW/person been informed of the anonymised source patient BBV test results?	❑	❑

Occupational health/A&E clinician managing the injured HCW/person

Clinician's name: _____ **Post**_____

Page/contact number: _____ **Date:**_____

Copies of this assessment form can be downloaded from
http://www.staffnet.ggc.scot.nhs.uk/Info%20Centre/PoliciesProcedures/Pages/default.aspx

Appendix 3 : UK and worldwide HIV prevalence rates

UK*

MSM: HIV prevalence in Glasgow and in Scotland is 3 - 5%. Higher prevalence areas in the UK include London and Brighton.

Heterosexuals: HIV prevalence in Glasgow and in Scotland is < 0.5%. Similarly in England and Wales prevalence of HIV is < 0.5% (1% in London).

IDU: HIV prevalence in Glasgow and the rest of the UK (excluding London) is <1%. In London, the prevalence of HIV is around 3%.

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

Outside UK

Many countries within Africa have high overall HIV prevalence rates these are listed in the table below. It should be noted that this table only includes those countries for which data are known.

High HIV prevalence rates 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/

Prevalence Rates by Country

List of High HIV* Prevalence Countries
(Source: HIV - UNAIDS Global Report 2012)

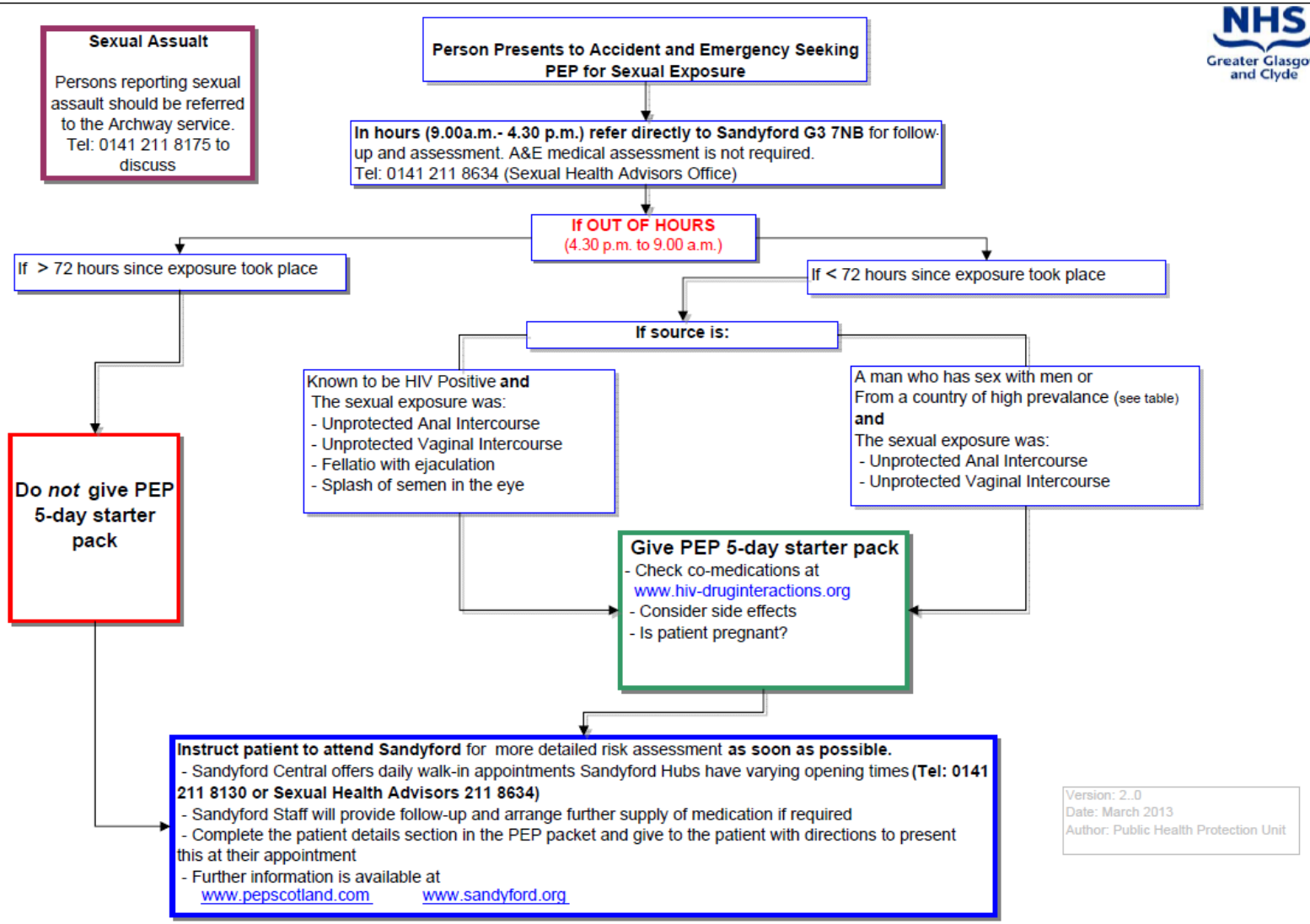
E. Europe & Asia	HIV ≥1%
Armenia	-
Azerbaijan	-
Brunei	-
Bulgaria	-
Burma	-
Cambodia	-
China	-
East Timor	-
Estonia	1.3
Georgia	-
Indonesia	-
Kazakhstan	-
Korea North & South	-
Kyrgyzstan	-
Laos	-
Malaysia	-
Moldova	-
Mongolia	-
New Guinea	-
Philippines	-
Russian Federation	1.4***
Taiwan	-
Tajikistan	-
Thailand	1.2
Turkmenistan	-
Uzbekistan	No Data
Vietnam	-
Arctic and North America	
Baffin Island	-
Banks Island	-
Canada (Around Hudson	-
Greenland	-
North West Territories	-
Nunavut	-
Quebec (Around Hudson	-
Queen Elizabeth Islands	-
Victoria Island	-
Caribbean	
Bahamas	2.8
Haiti	1.8
Jamaica	1.8
Trinidad & Tobago	1.5

African Continent	HIV ≥1%
	2.1
Benin	1.2
Botswana	23.4
Burkina Faso	1.1
Burundi	1.3
Cameroon	4.6
Cape Verde	1
Cent. African Rep.	4.6
Chad	3.1
Congo	3.3
Cote d'Ivoire	3
Dem. Rep. Congo (2010)	1.2
Djibouti	1.4
Equatorial Guinea	4.7
Eritrea	0.6**
Ethiopia	1.4
Gabon	5
Gambia	1.5
Ghana	1.5
Guinea	1.4
Guinea-Bissau	2.5
Kenya	6.2
Lesotho	23.3
Liberia	1
Madagascar	-
Malawi	10
Mali	1.1
Mauritania	1.1
Mauritius	1
Mozambique	11.3
Namibia	13.4
Niger	-
Nigeria	3.7
Rwanda	2.9
Sao Tome & Principe	1
Senegal	-
Sierra Leone	1.6
Somalia	0.7**
South Africa	17.3
Sudan (HIV - South)	3.1
Swaziland	26
Togo	3.4
Uganda	7.2
United Rep. Of Tanzania	5.8
Western Sahara	No data
Zambia	12.5
Zimbabwe	14.9

Middle East	HIV ≥1%
Jordan	No data
Saudi Arabia	-
South America	
Belize	2.3
Bolivia	-
Brazil	-
Chile	-
Colombia	-
Guatemala	0.8**
Guyana	1.1
Peru	-
Suriname	1

*Estimates for 15-49 year olds in adult population - estimates usually significantly higher in sub-groups (e.g. IVDU, sex workers, MSM)
**Country included as it borders on one or more countries with prevalence of 1% or higher, and upper estimate for this country is 1% or higher
***Upper estimate used - no data for average prevelance provided
No data for: Bahrain, Cyprus, Iraq, Kuwait, Libyan Arab Jamahiriya, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Algeria, Oman, India, Democratic People Republic of Korea

Appendix 4 : A&E Decision Tree



Abbreviation glossary

A	A&E - Accident and Emergency EDTA - Ethylenediaminetetraacetic acid
B	BBV - Blood Bourne Virus BNF – British National Formulary
C	CSF - Cerebrospinal fluid
D	
E	
F	FBC – Full Blood Count
G	GUM - Genitourinary Medicine
H	HB - Hepatitis B HBIG - Hepatitis B Immune Globulin HBV - Hepatitis B Virus HBeAg - Hepatitis B "e" Antigen. HBsAg - Hepatitis B surface Antigen HC – Hepatitis C HCW - Health Care Worker HIV - Human Immunodeficiency Virus HIV PEP - Human Immunodeficiency Virus Post-Exposure Prophylaxis HVC - Hepatitis C Virus
I	IDU – Injecting Drug User
J	
K	
L	LFTs – Liver Function Test
M	MSM – Men who have sex with Men
N	NASH - National Sexual Health Clinic Information System NHSGG&C – National Health Service Greater Glasgow & Clyde
O	ONS - Office for National Statistics
P	PCR - Polymerase Chain Reaction PEP - Post-Exposure Prophylaxis PEPSE - Post-Exposure Prophylaxis for Sexual Exposure PWID-people who inject drugs
Q	
R	
S	SOPHID - Survey of Prevalent HIV Infections Diagnosed STIs - Sexually Transmitted Diseases
T	
U	U&Es - Urea & Electrolytes
V	
W	
X	
Y	
Z	