IMPORTANT: These guidelines are not intended to define the standard of care for the purpose of litigation.

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1. Introduction

All employers have a statutory responsibility under Section 2 (1) of the Health and Safety at Work Act (1974) to create as safe an environment as is reasonably possible. The Management of Health & Safety at Work Regulations 1992 and 1999 specify these responsibilities, which include: appropriate training and education of staff in clean working procedures; providing a written policy on infection control; ensuring that patients and visitors to the practice are protected from harm; regular risk assessment within the practice with corresponding changes; systematically examining work activity and formally recording findings. In addition, all employees have a legal duty to take reasonable care to avoid any action or working pattern that might cause injury to themselves, their colleagues or other persons using the surgery, or surgery premises.

All practice staff need to be aware of this inoculation injury policy. It should be kept in a convenient and prominent position in case needed in an emergency. The policy should also be available in all branch surgeries and should form part of the induction for new staff.

Inoculation injuries are defined as follows:

(i) Needle-stick or Sharps injury: These may be caused by needles, scalpels, razor blades, broken glass or any sharp instrument. Sharp tissues such as spicules of bone or teeth may also pose a risk. Glass items such as ampoules, capillary tubes, and glass slides must be treated as sharps and disposed of accordingly. If there is any doubt about whether an item should be treated as a sharp, it must be treated as one.
(ii) Human bites and scratches which break the skin and involve visible blood.
(iii) Contamination or splashing of the conjunctiva and mucous membranes (eyes, nose, mouth) with blood or body fluids.
(iv) Contamination or splashing of any open wound or skin lesion e.g. eczema or psoriasis with blood or body fluids.

The major blood-borne pathogens associated with inoculation injuries are hepatitis B, hepatitis C and HIV.

Hepatitis B is a blood-borne viral infection that can be prevented through vaccination. The hepatitis B virus (HBV) causes hepatitis (inflammation of the liver) and can also cause long-term liver damage.

Hepatitis C infection (also known as Hep C or HCV) is another virus that can cause long-lasting infection and can lead to liver disease.

Human immunodeficiency virus (HIV) causes Acquired Immune Deficiency Syndrome (AIDS). HIV destroys the body’s ability to fight infection by attacking the immune system. This results in infected individuals becoming susceptible to opportunistic infections.
**CHILD PROTECTION ISSUES**

At all stages, there should be consideration of any issues relating to the safeguarding of children, whether the child is the source, the recipient or a child in the family of the source/recipient.

### 2. Evidence base for Guidelines

The definitions of the types of evidence and the grading of recommendations used in this guideline originate from the US Agency for Health Care Policy and Research and are set out in Tables 1-3.

#### Table 1: Statements of evidence

- **Ia** Evidence obtained from meta-analysis of randomised controlled trials.
- **Ib** Evidence obtained from at least one randomised controlled trial.
- **IIa** Evidence obtained from at least one well-designed controlled trial without randomisation.
- **IIb** Evidence obtained from at least one other type of well-designed quasi-experimental study.
- **III** Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.
- **IV** Evidence obtained from expert committee reports or clinical experiences of respected authorities.

#### Table 2: Grades of Recommendations

- **A** Requires at least one randomised controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation. *(Evidence levels Ia, Ib)*
- **B** Requires the availability of well-conducted clinical studies but no randomised clinical trials on the topic of recommendation. *(Evidence levels IIa, IIb, III)*
- **C** Requires evidence obtained from expert committee reports or clinical experiences of respected authorities. Indicates an absence of directly applicable clinical studies of good quality. *(Evidence level IV)*

#### Table 3: Good Practice Points

- Recommended best practice based on the clinical experience of the Inoculation Injuries guideline development group

The search strategy for the guidelines is shown in Appendix 1a
3. Guideline objectives

The objective of this guideline is to:

Provide guidance on how to minimize the harm done by inoculation injuries and blood splashes, and how to prevent them. Guidance on recording and reporting incidents to meet statutory and medico-legal obligations is included.

4. Clinical questions covered by this guideline

How should inoculation injuries, presenting in Health Care Workers, and members of the public in Wales, be managed appropriately, to reduce the risk of transmission of blood-borne viruses (BBVs), specifically hepatitis B, hepatitis C and HIV?

5. Target population covered by this guideline

5.1 Groups and categories that will be covered

(a) Inoculation injuries in staff employed within general medical practice.
(b) Injuries in members of the public presenting to general medical practices, including injuries in some other occupations e.g. domestic refuse workers, domestic cleaning staff.
(c) Non-occupational inoculation injuries in members of the public presenting to general medical practices.

5.2 Groups and categories that will not be covered

(a) Inoculation injuries occurring in secondary and tertiary care.
(b) Inoculation injuries presenting outside normal surgery hours, which should be dealt with by A&E departments.?

6. Target users covered by this guideline

(a) The guideline will cover the care received from primary care professionals who have direct contact with, and make decisions about people who have sustained inoculation injuries.
(b) The guideline will address care in primary care, but will not address care in secondary care and tertiary centres.
(c) The guideline will also be relevant to the work, but will not cover the practice of those working in:

(i) Health Protection
(ii) A&E departments
(iii) NHS Direct
(iv) The voluntary sector
(v) Occupational Health
(vi) Other healthcare settings, for example allied health professionals, dentists, clinicians in secondary care and pharmacists.
RETURN TO INTRODUCTION

7. Management of inoculation injuries

The following definitions are used in this document.

The responsible doctor (RD) is a general medical practitioner who has accepted responsibility for assessing the injured individual as an “Immediately Necessary Patient.”

The source patient is known as the source.

The person suffering from the exposure/injury is called the recipient.

7.1 Summary of Management

The 13 steps should be followed when managing inoculation injuries. See Appendix 1b for flow-chart & Appendix 1c for risk assessment and treatment record.

**Step 1** Use appropriate first aid measures when an inoculation injury has been sustained.

**Step 2** Decide whether inoculation injury is occupational or non-occupational.

**Step 3** Report the incident.

**Step 4** Assess the exposure risk to recipient.

**Step 5** If non-significant exposure has occurred, reassure the recipient and proceed to Step 13.

If significant exposure has occurred, follow Steps 6-13

**Step 6** Counsel the recipient.

**Step 7** Assess the status of the source.

**Step 8** Assess the potential for communicability at time of exposure.

**Step 9** If source refuses consent for blood testing, and is not known to carry any of these infections, assess risk factors for blood-borne viruses (BBVs).

**Step 10** Assess the immune status of recipient with regards to hepatitis B/take blood samples from recipient.

**Step 11** Clinically manage the recipient.

**Step 12** Follow-up the recipient.

**Step 13** Document the exposure incident.
7.2 Full Instruction

**CHILD PROTECTION ISSUES**

At all stages, there should be consideration of any issues relating to the safeguarding of children, whether the child is the source, the recipient or a child in the family of the source/recipient. Particular examples may be:

- a child with a needle stick injury in the home, where the parents are using intravenous drugs – there will be a need to consider the physical safety of the child and any compromised parenting capacity
- a child with a human bite from any source
- a child where there are concerns re: sexual transmission.

There should always be consideration of a Child in need/ in need of protection referral to Social Services, as per the All Wales Child Protection Procedures.

**Step 1** Use appropriate first aid measures when an inoculation injury has been sustained.

(a) In the event of a contaminated needle-stick or sharps injury:  
- **RD** should instruct recipient to immediately go to the nearest hand basin and encourage bleeding from the puncture wound for 5 minutes.
- **RD** should instruct recipient not to suck, scrub or rub the injury site.
- **RD** should instruct recipient to wash area with soap and warm water and dry (antiseptics and skin washes should not be used – there is no evidence of their efficacy, and their effect on local defences is unknown).
- **RD** should instruct recipient to cover area with waterproof dressing if necessary.

(b) If bitten or scratched, or if skin lesions or wounds become contaminated with blood or body fluids:  
- **RD** should instruct recipient to thoroughly wash the area with soap and water and cover with a waterproof dressing.

(c) If contamination of the conjunctiva or mucous membrane (eyes, nose, mouth) occurs:  
- **RD** should instruct recipient to immediately irrigate the area thoroughly with copious amounts of normal saline or water (before and after removing any contact lenses).

(d) **RD** should ensure that source of sharp is located to prevent further injury.

(e) **RD** should ensure that spillages of blood/body fluids are cleaned up promptly and surfaces disinfected. Gloves should be worn and disposable wipes used. Gloves should be disposed into a yellow clinical waste bag. Chlorine releasing solutions (e.g. ‘Domestos’) are available for hard surface disinfection. These chemicals are toxic and must be used only as directed on the containers. NaDCC granules MUST only be used for blood spillages.
Step 2 Decide whether inoculation injury is occupational or non-occupational.

The RD should decide whether the inoculation injury is occupational or non-occupational, using Table 4 as a guide:

<table>
<thead>
<tr>
<th>Occupational</th>
<th>Non-occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>An occupational exposure is defined as an exposure which occurs to a Health Care Worker (HCW), defined as:(^{11})</td>
<td>A non-occupational exposure is an exposure that occurs to a member of the general public outside perinatal period.</td>
</tr>
<tr>
<td>(a) Clinical and other staff who have regular, clinical contact with patients. This includes staff such as doctors, dentists and nurses and physiotherapists.</td>
<td>Those that may present to general medical practices include:</td>
</tr>
<tr>
<td>(b) Non-clinical ancillary staff who may have social contact with patients, but not usually of a prolonged or close nature. This group includes managers, receptionists, cleaners and other administrative staff working in primary care settings</td>
<td>(a) Used needles or other sharps discarded in public places or in domestic waste (so called “dry needle sticks”).</td>
</tr>
<tr>
<td></td>
<td>(b) NSIs occurring in people in low risk (e.g. parkworkers) or high risk (e.g. prison officers) occupations</td>
</tr>
<tr>
<td></td>
<td>(c) Sexual Assault.(^{9})</td>
</tr>
<tr>
<td></td>
<td>(d) Condom breaking during sex between HIV discordant partners.</td>
</tr>
<tr>
<td></td>
<td>(e) Having shared injecting equipment with known HIV positive individual.</td>
</tr>
</tbody>
</table>

If occupational, follow the left hand columns in the subsequent steps, if non-occupational, follow the right hand columns.

Step 3 Report the incident.

The RD should ensure that all exposure incidents within the practice are reported promptly. This is important for three reasons:\(^{8}\)

(a) To ensure appropriate management to reduce the risk of BBV transmission.
(b) To document the incident and the circumstances of it, in case of later claim for occupational injury or infection.
(c) Accurate surveillance, so that effective data analysis can inform measures to reduce the risk of further exposures.
Table 5

<table>
<thead>
<tr>
<th>Occupational</th>
<th>Non-occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>All occupational incidents</td>
<td>Members of the public should be reported to the Practice Manager and Senior Nurse/GP.</td>
</tr>
</tbody>
</table>

**Step 4** Assess the exposure risk to recipient.

The RD should assess the exposure risk to the recipient. This is dependent on the type of body fluid to which the recipient is exposed and route and severity of exposure.7,14,15 A combination of a significant injury with a high-risk material constitutes a significant exposure.16 **EVIDENCE**

A high-risk material (i.e. that with a significant risk of transmission of infection to the recipient) includes:7

- blood.
- amniotic fluid, CSF, human breast milk, pericardial fluid, peritoneal fluid, pleural fluid, synovial fluid, unfixed human tissues and organs, exudative or other tissue fluid from burns or skin lesions, vaginal secretions, semen.
- any other body fluid containing visible blood.
- saliva in association with dentistry.

A low risk material (i.e. with no significant risk of transmission of infection to recipient) includes:7

- urine, vomit, saliva, faeces unless blood is visibly present.

Is material high risk? No>reassure – **GOTO STEP 5** Yes>proceed to ask: Is injury high risk? No>reassure – **GOTO STEP 5** Yes>**GOTO STEP 6**

A significant injury would include the following examples:7,14

- percutaneous injury involving visible damage to the skin with a needle or other sharp object sufficient to draw blood.7,14
- contact of blood or bodily fluid with the mucous membranes or the eyes or mouth.7,14
- contact of blood or bodily fluid with NON INTACT skin elsewhere on the body (chapped skin, damaged skin by abrasion or eczema).7,14
- sexual exposure (unprotected sexual intercourse or other penetrative contact).15
- Human bite where source had visible blood around mouth.
- Scratch where source had visible blood around fingers/nails prior to scratching.
A non-significant injury would be:

- superficial graze not breaking the skin.
- exposure to intact undamaged skin.
- Exposure to sterile or uncontaminated sharps.\(^{15}\)

**Step 5** If non-significant exposure has occurred, reassure the recipient.

If the exposure is non-significant i.e. it does not have the potential for BBV transmission, the RD should advise the recipient that the potential side effects and toxicity of taking Post-Exposure Prophylaxis (PEP) outweigh the negligible risk of transmission posed by the type of exposure, whether or not the source patient is known or considered likely to be HIV infected. However, the opportunity should be taken to offer the recipient HBV immunization, if they have not already had this.

**GOTO STEP 13.**

**Step 6** If significant exposure had occurred, counsel the recipient (See Appendix 2).

If significant exposure has occurred, the RD should counsel the recipient about the exposure. The recipient should be given the opportunity to talk about their concerns following the incident, and discuss the available information about risks from the exposure.

In counselling the patient, the following should be considered.\(^4\)

1. Although the major concern for accidental exposures to blood involves hepatitis B, hepatitis C and HIV, other infective organisms are also a hazard.
2. The prevalence of hepatitis and HIV infection within the Welsh population is low, except in certain ‘at risk’ groups.
3. Although the risk of infection with BBVs from such injuries is very low, the circumstances of each case should be considered on an individual basis.
4. Although the risk is low, psychological effects can be profound.
### Table 6

<table>
<thead>
<tr>
<th>Occupational</th>
<th>Non-occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>In managing occupational cases, the following should also be considered:</td>
<td>In managing non-occupational cases, the following should also be considered:</td>
</tr>
<tr>
<td>5a The risk of BBV infection from a known source will depend on the BBV status of that source.</td>
<td>5b The risk of BBV transmission from an unknown source depends on the prevalence of these infections in the population which will vary with locality and will be expected to be higher in inner city areas.(^{15})</td>
</tr>
<tr>
<td>6a In the non-immune person, the risk of acquiring HBV from needle-stick exposure to HBeAg positive blood is about 1 in 3.(^{15})</td>
<td>6b As a rough guide, upper limit of risk of HBV transmission might be expected to occur in around 1 in 2,000 unknown source percutaneous exposures involving a penetrative injury with fresh blood.(^{20}) Risk will be an order of magnitude lower for “dry needlestick” injuries – needles discarded in the community containing old dried blood.</td>
</tr>
<tr>
<td>7a The risk from percutaneous exposure to blood from a HCV + patient is 1 in 50.(^{17})</td>
<td>7b Upper limit of risk of HCV transmission might be expected to occur in around 1 in 222 unknown source percutaneous exposures involving a penetrative injury with fresh blood.(^{21}) “Dry needlestick” risks as above.</td>
</tr>
<tr>
<td>8a Staff exposed to blood from a known HIV infected patient have a risk of 1 in 300 for percutaneous exposure to HIV infected blood (needle-stick and sharps injuries)(^{18,19}) or 1 in 1,000 for mucocutaneous exposure to HIV infected blood.(^{19})</td>
<td>8b Upper limit of risk of HIV transmission might be expected to occur in around 1 in 65,000 unknown source percutaneous exposures involving a penetrative injury with fresh blood.(^{22}) “Dry needlestick” risks as above.</td>
</tr>
<tr>
<td>9b Important to note that no children have been reported as acquiring a BBV from a “dry needle-stick.”(^{23,24,25})</td>
<td>10b Most inoculation injuries occurring outside health care will involve “dry needlesticks” where donor is not known. However, some jobs e.g. working with prisoners, may sustain injuries where source is known and may be considered high risk e.g. IDUs. In such cases the RD must make a judgement, as some of the guidance for managing health care occupational injuries may be applicable.</td>
</tr>
<tr>
<td>In cases of doubt seek advice (see [17 Further Help/Information])</td>
<td></td>
</tr>
</tbody>
</table>

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Risks of infection with HIV for other routes of transmission are shown in Table 7:

<table>
<thead>
<tr>
<th>Exposure Route</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood transfusion</td>
<td>1 in 1.1</td>
</tr>
<tr>
<td>Needle-sharing injection drug use</td>
<td>1 in 150</td>
</tr>
<tr>
<td>Receptive anal sex</td>
<td>1 in 200</td>
</tr>
<tr>
<td>Receptive vaginal sex</td>
<td>1 in 1000</td>
</tr>
<tr>
<td>Insertive anal sex</td>
<td>1 in 1,500</td>
</tr>
<tr>
<td>Insertive vaginal sex</td>
<td>1 in 2,000</td>
</tr>
<tr>
<td>Receptive oral sex (fellatio)</td>
<td>1 in 10,000</td>
</tr>
<tr>
<td>Insertive oral sex</td>
<td>1 in 20,000</td>
</tr>
</tbody>
</table>

Counselling should include information regarding:
- statistics regarding seroconversion risks.
- risks involved in this particular incident.
- steps to reduce the risk of BBV infection.
- follow-up procedure and rationale behind it.
- ‘window period’ if the source patient has ongoing risk factors for BBV infection.
- infection control precautions i.e. safe sex during follow-up period, but no additional work restrictions.
- establishing support networks: friends, family etc.
- allowing time to express anxieties and concerns and to answer questions.
- HIV and HCV follow-up tests (and HBV if not immune).
- Confidentiality.

Counselling is an ongoing process and so not everything in this list will be covered in this step; some points above should be covered in **Step 12**.

Most people will have varying degrees of anxiety until the serological follow-up is completed. While the majority of individuals will cope with this anxiety, a small number will require more intensive support. This may involve informal discussions, formal counselling or psychiatric intervention. It is important to make the arrangements for follow-up flexible and to allow ready access to help.

While most attention is usually focused on the injured person, the donor also requires counselling and support during this process.

**Step 7** If significant exposure has occurred, assess the status of the source (see **Appendix 3** for info to give to source).

The RD should assess the status of the source with regard to Hepatitis B, Hepatitis C and HIV if the exposure is deemed to be significant.

If a staff member sustains an injury then a medical colleague/nurse must be asked to undertake the risk assessment and blood tests. It is unethical for the victim of an inoculation injury to ask the source to consent to blood tests.
Table 8

<table>
<thead>
<tr>
<th>Occupational</th>
<th>Non-occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>In most occupational injuries, the source will be known and can be approached for blood testing.</td>
<td>In a non-occupational setting, the only guide you have is a full risk assessment because the source patient is often unknown e.g. is there any indication of the origin of the device or the body fluid? Taking account of the fact that risks will be much lower for old discarded needles and sharps. If the risk assessment suggests intervention, then intervene as if the source was positive for BBVs.</td>
</tr>
<tr>
<td>When the status of the source is unknown, risk assessment should be on an individual basis e.g. the RD needs to consider whether the device was from a surgery with patients known to have hepatitis B or C or HIV?</td>
<td>In the small number of cases where the donor is known and approaching them to seek consent to test for BBV’s is feasible, then the RD should arrange this.</td>
</tr>
</tbody>
</table>

Prior to taking blood to test for BBVs, the source should be counselled. There should, especially, be pre-test discussion prior to HIV antibody testing. This should be part of the mainstream clinical care and does not need specialist counselling training or qualification. During a discussion with the source, the following points should be covered:

a. The reason why he/she is being asked to have this blood testing – certain infections (HBV, HCV and HIV) are carried in the blood and body fluid and the recipient has been exposed to the source’s blood/body fluid – explain what the clinical procedure was (if relevant). Details of the recipient concerned should be kept confidential.

b. The difficulties of the recipient’s situation should be discussed – either in terms of not missing the opportunity to benefit from PEP, or conversely not being subjected unnecessarily to its potentially unpleasant short-term and unknown long-term side effects.

c. Medication/vaccination may be offered to the recipient depending on the results of testing, which may considerably reduce the chance that they will be infected. To be effective this would need to be started as soon as possible.

d. The results of testing will be given to the source, and will be kept confidential – they will be filed in the patient’s records. The recipient will also be informed of the results.

e. Describe the procedure for having blood taken. Ask the source if they want to know their result, and if so, organize a time to give them the results.

f. If any test results are positive, the source will be offered appropriate advice and care to deal with the infection.

g. The source’s other care/management will not be affected whether testing is agreed or not.

h. Discuss possible routes of transmission of HBV, HCV and HIV. If high-risk behaviour occurred within the preceding 3 months explain the
window period (6-10 weeks from infection to the detection of measurable antibodies). Consider organizing a test after the window period.

i. Discuss the practical implications of the test (positive or negative) e.g. on sexual relationships, work situations, medical follow-up and life assurance (existing policies will not be affected. If taking out a new policy, insurance companies ask if the applicant has tested positive for HIV, HBV or HCV. If the result is negative the insurance will not be affected. If positive the premium may be increased or insurance refused).

j. Consent for taking source’s blood should be obtained from the source in writing (see Appendix 4).

k. If the source is a child under 16 – consent must be given by a person with Parental Responsibility; the consent of the child/young person should also be sought (if the child is the subject of a care order, the leave of the court may be required).

l. If the source objects to having the blood taken or tested, for whatever reason, this must be accepted.

m. If the source refuses consent, if it would be detrimental for the source to be approached, if there are any other reasons why testing is not done, this should be recorded and the staff member informed.

n. Sometimes a source is unable to give consent. Consent cannot be given by a third party e.g. next of kin. In these circumstances, a decision has to be made whether it is justifiable and appropriate to take the blood without consent, with reference to the GMC’s guidance on Serious Communicable Diseases (paras 8–11) (see Appendix 5).

o. If the source dies, you may test for a serious communicable disease if you have good reason to think that the source may have been infected, and a HCW has been exposed to the patient’s blood or other body fluid. The RD should usually ask for the agreement of a relative before testing.

p. If a test is done without consent, a specific note to this effect should be made in the patient’s records and signed by the doctor involved. If the source patient is unwilling or unable to consent, it may be considered an assault to take blood for this purpose, and may be unlawful to test a sample obtained previously.

1. Blood specimens should be taken by the doctor, phlebotomist or nurse.

2. Take 10 ml of clotted blood from source. Request HBsAg, HCV antibody and HIV antibody test on the pathology form.


4. If appropriate (i.e. patient ‘HIGH RISK’) label blood and request form with yellow ‘Danger of Infection’ stickers and double bag in plastic bag.

5. Place in specimen transport box prior to dispatch to microbiology laboratory, and inform laboratory staff that high-risk specimen is on the way.

6. The blood will be tested as a matter of priority and the results will be telephoned to the requesting doctor as soon as is reasonably possible.

The following blood tests should be performed (Table 9):

<table>
<thead>
<tr>
<th>Version: 2</th>
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</thead>
<tbody>
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<td></td>
</tr>
</tbody>
</table>
### Table 9
Testing the source, upon consent

<table>
<thead>
<tr>
<th>Bloodborne Pathogens</th>
<th>TEST THE SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV&lt;sup&gt;15&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ If source is known to be HbsAg positive, immediate HbsAg testing of sample will not be necessary.</td>
</tr>
<tr>
<td></td>
<td>▪ Test for hepatitis B surface antigen (HBsAg) at the time of injury if the source has an <em>unknown</em> HBV status.</td>
</tr>
<tr>
<td></td>
<td>▪ Take and store serum sample from all sources for a minimum of 2 years.</td>
</tr>
<tr>
<td>HCV&lt;sup&gt;14&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ If source is of <em>unknown</em> status, test for HCV antibodies (anti-HCV) at the time of injury.</td>
</tr>
<tr>
<td></td>
<td>▪ Sources who are found to be anti-HCV positive should be further investigated for HCV RNA (an EDTA plasma may be required by the local laboratory).</td>
</tr>
<tr>
<td></td>
<td>▪ In immunocompromised patients (including those on renal dialysis) or in sources suggestive of acute hepatitis C infection, the use of genome detection should be considered even if the donor is found to be HCV negative.</td>
</tr>
<tr>
<td></td>
<td>▪ Store serum sample from all sources for a minimum of 2 years in a secure archive at a temperature at or below -20°C.</td>
</tr>
<tr>
<td>HIV&lt;sup&gt;7&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Test for HIV antibodies at the time of injury, regardless of whether HIV status of source is known.</td>
</tr>
<tr>
<td></td>
<td>▪ Store serum sample from all sources for a minimum of 2 years.</td>
</tr>
</tbody>
</table>

**Step 8.** If significant exposure has occurred, assess potential for communicability at time of recipient exposure.

The RD should assess for the potential for communicability at time of recipient exposure, if significant exposure has occurred.<sup>36</sup>

The incubation period of Hepatitis B is 45 to 180 days, and the period of communicability is as long as HbsAg is present in the blood.

The incubation period of Hepatitis C is 14 to 180 days, and the period of communicability is as long as HCV is present in the blood.

The incubation period of HIV is usually 30 to 90 days but may be longer. The period of communicability is from the time the virus is present in the blood and throughout life.
Step 9 If significant exposure has occurred and the source refuses consent for blood testing, and is not known to carry any of these infections, assess risk factors for BBVs.

The RD should assess risk factors for BBVs if the source refuses consent for blood testing and is not known to carry Hepatitis B, Hepatitis C or HIV:

- The risk of being infected with hepatitis B is increased in intravenous drug users, men who have sex with men (MSM) and in people with hepatitis B-infected mothers or sexual partners.\(^8\)

- The risk of being infected with hepatitis C is increased by receipt of unscreened blood or untreated plasma products in the UK prior to September 1991 and 1985 respectively; sharing of injecting equipment while misusing drugs; sharps injury or mucous membrane splash exposure to blood from patients known to be infected, or at risk of infection with hepatitis C; involvement as a healthcare worker or patient in invasive medical, surgical, dental or midwifery procedures in parts of the world where infection control procedures may have been inadequate; or with populations with a high prevalence of hepatitis C (e.g. Egypt).\(^8\)

- The risk of being infected with HIV is increased in people from sub-Saharan Africa, MSM, intravenous drug users (especially from London), people with HIV infected mothers or sexual partners.\(^8\)

Step 10 If significant exposure has occurred, assess immune status of recipient with regards to Hepatitis B and Take blood samples from recipient.

The RD should assess the immune status of the recipient with regards to Hepatitis B\(^15\), and take the following samples if the results of testing indicate the source is positive for HBsAg, anti-HCV or HIV antibodies, or if the status of the source is 'high-risk' or unknown (Table 10).
Table 10
Testing the recipient, if the source is positive or the status of the source is unknown or is negative but has risk factors

<table>
<thead>
<tr>
<th>Bloodborne Pathogens</th>
<th>TEST THE RECIPIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>▪ Baseline serum should be obtained from the recipient and stored in a secure archive at –20°C for 2 years.15 (NOT USUALLY NECESSARY FOR DRY NEEDLE-STICK INJURIES IN CHILDREN, THOUGH ASSESS ON CASE-BY-CASE BASIS)</td>
</tr>
<tr>
<td></td>
<td>▪ Check records for HBV immune status.37</td>
</tr>
<tr>
<td></td>
<td>▪ Measure anti-HBs levels in recipients who have received two or more doses of vaccine.15</td>
</tr>
<tr>
<td></td>
<td>▪ If found to have had a level of anti-HBs &gt; 100 miU/ml at or around the time of exposure, further HBV prophylaxis for the incident will not be needed.15</td>
</tr>
<tr>
<td>HCV</td>
<td>▪ Baseline serum should be obtained from the recipient and stored in a secure archive at -20°C for 2 years.14 (NOT USUALLY NECESSARY FOR DRY NEEDLE-STICK INJURIES IN CHILDREN, THOUGH ASSESS ON CASE-BY-CASE BASIS)</td>
</tr>
<tr>
<td>HIV</td>
<td>▪ Baseline serum should be obtained from the recipient and stored in a secure archive at -20°C for 2 years7 (NOT USUALLY NECESSARY FOR DRY NEEDLE-STICK INJURIES IN CHILDREN, THOUGH ASSESS ON CASE-BY-CASE BASIS).</td>
</tr>
</tbody>
</table>

Blood samples should be sent to the local virology or microbiology laboratory for serum to be saved and stored. They should be clearly marked ‘needlestick/mucous membrane/exposure injury baseline blood for long term storage.’3 There is no point in testing this sample for blood-borne viruses at this stage, unless the exposed member of staff has reason to believe that they may already be infected. The purpose of this sample is to be able to show that, in the unlikely event of subsequent sero-conversion, the recipient not infected at the time of exposure, and therefore the infection was occupationally acquired.

The RD should consider the recipient to be immune to HBV where there is evidence of 3 doses of Hepatitis B vaccine given at 0,1 and 6 months and one documented adequate anti-HBs titre, according to standard laboratory tests, done at least 4-8 weeks after immunization; or if the recipient is anti-HBs positive, anti-HBc positive, or HbsAg positive from hepatitis B infection.36

The RD should consider all recipients to be susceptible to Hepatitis C and HIV even with laboratory documentation of previous infection, since infection with one genotype of virus is not protective against infection with another.36

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Author: Dr Rob Atenstaedt Page: 18 of 52
Step 11 If significant exposure has occurred, clinically manage the recipient

The RD should clinically manage the recipient, taking the following into consideration (Table 11):

<table>
<thead>
<tr>
<th>Occupational</th>
<th>Non-occupational</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is good evidence for the effectiveness of PEP following exposure to HIV in a healthcare setting.</td>
<td>No data exists on the efficacy of PEP following exposure to HIV other than occupational exposure in a health care setting. However, the Expert Advisory Group on AIDS (EAGA) is aware that some physicians have prescribed PEP outside the occupational exposure context on a case-by-case basis. Due to lack of any evidence of the efficacy at present, EAGA cannot recommend in favour or against its use.</td>
</tr>
<tr>
<td>Exposed staff members should be counselled about the possible side-effects and the potential risks and benefits of PEP, so that staff can make an informed choice over whether to take PEP or not. Expert advice may be required.</td>
<td>Because the risk of HIV transmission in this setting is very low, the decision regarding testing, follow-up and use of antiretroviral agents to prevent HIV transmission should depend on the individual circumstances of the injury (and in the case of children follow discussion of the issues with the child’s parents or caregivers).</td>
</tr>
<tr>
<td>In extreme cases, it may be necessary to approach the donor for urgent HIV testing, out of hours, if there are relative contraindications to PEP.</td>
<td>Following a non-occupational exposure, PEP is more likely to be of benefit when:</td>
</tr>
<tr>
<td></td>
<td>Risk of HIV transmission is high</td>
</tr>
<tr>
<td></td>
<td>Exposure is unlikely to be repeated</td>
</tr>
<tr>
<td></td>
<td>PEP can be commenced rapidly</td>
</tr>
<tr>
<td></td>
<td>The exposed person is likely to adhere to the PEP regimen</td>
</tr>
</tbody>
</table>

If the recipient consents to treatment, then manage in line with the guidance in the following table (Table 12):
Table 12
Post-exposure prophylaxis for the recipient, if the source is positive or status is unknown or is negative

<table>
<thead>
<tr>
<th>Pathogens</th>
<th>PROPHYLAXIS FOR THE RECIPIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Significant exposure</td>
</tr>
<tr>
<td><strong>HBV</strong>¹⁵</td>
<td>HBV status of person exposed</td>
</tr>
<tr>
<td>&lt;1 dose HB vaccine pre-exposure</td>
<td>Accelerated course of HB vaccine</td>
</tr>
<tr>
<td>&gt;2 doses HB vaccine pre-exposure (anti-HBs not known)</td>
<td>One dose of HB vaccine followed by second dose one month later</td>
</tr>
<tr>
<td>Known responder to HB vaccine (anti-HBs &gt; 10mIU/ml)</td>
<td>Booster dose of HB vaccine</td>
</tr>
<tr>
<td>Known non-responder to HB vaccine (anti-HBs &lt; 10mIU/ml 2-4 months post vaccination)</td>
<td>HBGX1 consider booster dose of HB vaccine</td>
</tr>
</tbody>
</table>

NB: HBG = Hepatitis B Immunoglobulin

- Effective post-exposure prophylaxis is not available at this time. Immunoglobulin is not effective.

Note: An Accelerated course of HB Vaccine consists of doses spaced at 0, 1 and 2 months. A booster dose is given at 12 months to those at continuing risk of exposure to HBV.
### RECOMMENDATIONS

<table>
<thead>
<tr>
<th>POST-EXPOSURE PROPHYLAXIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

#### 1. According to exposure

- **Percutaneous injury**: Recommended
- **Exposure of mucous membrane**: Considered
- **Exposure of non-intact skin**: Considered
- **Exposure of intact skin**: Discouraged
- **Bite**: Considered

#### 2. According to material

- **Blood**: Recommended
- **Body materials containing visible blood**: Recommended
- **Cerebrospinal fluid**: Recommended
- **Concentrated virus in research lab or production facility**: Recommended
- **Semen; vaginal secretions; synovial, pleural, peritoneal, pericardial, or amniotic fluid, and tissues.**: Considered
- **Urine, vomit, saliva, faeces, tears, sweat, sputum**: Discouraged

#### 3. According to source patient

- **Known to be HIV infected**: Recommended
- **Serostatus unknown**: Considered
- **Who denies his/her consent to HIV test**: Considered
- **Unknown or cannot be HIV tested**: Considered
- **HIV seronegative**: Discouraged
Specific recommendations for unprotected sexual exposure or where condom failure has occurred are shown in Table 13:

<table>
<thead>
<tr>
<th>Source is known to be HIV positive</th>
<th>Source is of unknown HIV status but is from a group or area of high HIV prevalence*</th>
<th>Source is of unknown status but is not from a group or area of high HIV prevalence*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Receptive Anal Sex</strong></td>
<td>Recommended</td>
<td>Recommended</td>
</tr>
<tr>
<td><strong>Insertive Anal Sex</strong></td>
<td>Recommended</td>
<td>Considered</td>
</tr>
<tr>
<td><strong>Receptive Vaginal Sex</strong></td>
<td>Recommended</td>
<td>Considered</td>
</tr>
<tr>
<td><strong>Insertive Vaginal Sex</strong></td>
<td>Recommended</td>
<td>Considered</td>
</tr>
<tr>
<td><strong>Fellatio with Ejaculation</strong></td>
<td>Considered</td>
<td>Considered</td>
</tr>
<tr>
<td><strong>Splash of Semen into Eye</strong></td>
<td>Considered</td>
<td>Considered$^*$</td>
</tr>
<tr>
<td><strong>Fellatio without Ejaculation</strong></td>
<td>Not Recommended</td>
<td>Not Recommended$^*$</td>
</tr>
<tr>
<td><strong>Cunnilingus</strong></td>
<td>Not Recommended</td>
<td>Not Recommended$^*$</td>
</tr>
</tbody>
</table>

* MSM and individuals who have emigrated to the UK from areas of high HIV prevalence (particularly sub-Saharan Africa).
$^*$ personal communication with Dr Fisher.
**Hepatitis B**

(see schedule on p. 20)

Hepatitis B immunoglobulin is available in 2ml ampoules containing 200 i.u. and 4ml ampoules containing 500 i.u.\(^40\)

Dose: Newborn and children aged 0-4  200 i.u.  
Children aged 5-9 years  300 i.u.  
Adults and children aged 10 years or more:  500 i.u. of Hepatitis B immunoglobulin IM.\(^40\)

For adults and children not exposed at birth, HBIG should be given preferably within 48 hours and not later than a week after exposure.\(^40\)

One dose of Hepatitis B vaccine in a different intramuscular (deltoid) site, according to following dosage schedules:

- **Engerix B**  
  Age 0-15 years: 10mcg (0.5ml)  
  16 years and over: 20mcg (1.0ml)
- **Fendrix**  
  Patients with renal insufficiency aged 15 years and over: 20mcg (0.5ml)
- **HBvaxPRO Paediatric**  
  Age 0-15 years: 5mcg (0.5ml)
- **HBvaxPRO**  
  16 years and over: 10mcg (1.0ml)
- **HBvaxPRO40**  
  Adult dialysis and pre-dialysis patients: 40mcg (1.0ml)

**HIV**

In the case of definite exposure to blood or other high-risk body fluids known or considered to be at high risk of HIV infection, post-exposure prophylaxis (PEP) should be offered as soon as possible, preferably within 1 hour of the incident.\(^7\)

If there is doubt or anxiety, it may be reasonable for recipient to take the first dose of PEP (unless there are contraindications). This takes away the need for an urgent decision and allows time for further consideration.

PEP may still be worth considering up to 2 weeks after the exposure, but the relative benefit of prophylaxis diminishes with time.\(^7\) The time interval from exposure after which PEP should be discouraged is 72 hours.\(^38\)

Anti-retroviral drugs are not licensed for PEP, so must be prescribed on a 'named patient basis', by a doctor.\(^8\)

Informed consent should be obtained from the exposed person prior to prescribing PEP (see **Appendix 7** and **Appendix 8** should also be given to the recipient.

The recipient’s understanding of the following should be documented:\(^7\)

- The need to start or resume relevant measures to reduce the risk of exposure to HIV.
- The lack of evidence of efficacy of PEP in these circumstances and the differing views of experts about its use in this context (in non-occupational exposures only).
- Known side effects and unknown toxicity of the drugs to be prescribed
- The importance of close adherence which may improve any efficacy and reduce the risk of infection with drug-resistant HIV, should infection supervene despite PEP
- Arrangements for follow-up
- Symptoms and signs which may be associated with HIV sero-conversion.

The current standard recommended regimen for PEP is a 28-day course of:

Zidovudine 250mg or 300mg bd
Lamivudine 150mg bd
Nelfinavir 1250 mg bd (or 750mg tds).

Information sheets on these medications should be given to the recipient (see Appendix 9 & Appendix 10)

Any drug regimen will have to take into account factors such as:

- whether the recipient is allergic to any of these medications
- whether the recipient is pregnant. Pregnancy does not preclude the use of HIV PEP. In these cases, expert advice should be sought and urgent pregnancy tests should be undertaken if a woman cannot rule this out.
- where there is the possibility that the donor is infected with a virus that is resistant to the standard PEP drugs. In this case, specialist advice should be sought from the HIV physician treating the source patient.
- where there would be an interaction with other medications. Possible drug interactions which should be considered are:
  - Astemizole and terfenadine should not be taken with nelfinavir;
  - St John’s Wort should not be taken with any of the PEP drugs;
  - Aspirin, co-proxamol, co-trimoxizole, phenytoin, sertraline, dexamethasone and prednisolone may interact with PEP drugs.

Anti-retroviral drugs have the following side effects: nausea, vomiting, abdominal pain, lethargy, fatigue, diarrhoea (nelfinavir), headache, bone-marrow suppression, rashes and liver function.

Anti-emetics such as metoclopramide, domperidone, cyclizine, ondansetron and anti-motility drugs such as loperamide can be prescribed for the side effects.

UK guidelines say that ‘It would normally be appropriate for the starter packs of PEP drugs to be made available to community based health workers through A&E Departments on a 24 hour basis’.

Different hospitals have different departments in charge of PEP, it can be the HIV team, occupational health. GPs should familiarise themselves with their own local arrangements and seek expert advice. Hospitals will have “starter packs” of PEP in casualty for access out of hours.

If HIV PEP is needed, a written assessment of the recipient should accompany them to A&E.

**Tetanus**

The indications for other treatments such as tetanus immunisation and human tetanus immunoglobulin should also be reviewed in accordance with good practice, but such measures are outside the scope of this policy.
**Step 12** If significant exposure has occurred, follow-up the recipient

The RD should arrange for on-going follow-up management and testing of the recipient over 6 months, unless it is determined that in a specific case follow-up should be longer. They should follow Table 14:

<table>
<thead>
<tr>
<th>Bloodborne Pathogen</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV&lt;sup&gt;15&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ The recipient exposed to HBV should advise their sexual partner(s) of the potential risk. Discussion of the possible benefits of adopting safer sex practices (such as use of condoms) and the avoidance of pregnancy during follow-up is recommended. HBV prophylaxis should be considered for sexual and other close contacts of any exposed person considered to be HBsAg positive. Blood donation should be avoided.</td>
</tr>
<tr>
<td></td>
<td>▪ A follow-up blood specimen should be obtained from the recipient 6 months after the exposure incident.</td>
</tr>
<tr>
<td></td>
<td>▪ Follow-up specimens from all exposed persons at continuing risk of HBV exposure, except those were known to be responders to Hepatitis B vaccine at the time of the incident and those who PEP consisted of HBIG alone, should be tested for anti-HBs. Where these are not detectable, the specimen should be tested for anti-HBc (and HBsAg if appropriate) in parallel with serum stored from the initial post-exposure specimen.</td>
</tr>
<tr>
<td></td>
<td>▪ Follow-up specimens from exposed persons given HBIG but not Hepatitis B vaccine post-exposure should be tested for anti-HBc and HbsAg in parallel with the initial post-exposure specimen.</td>
</tr>
<tr>
<td></td>
<td>▪ Any exposed person developing an illness compatible with a diagnosis of acute hepatitis in the 6 months after the exposure incident should have appropriate diagnostic tests performed at the time.</td>
</tr>
<tr>
<td></td>
<td>▪ If HCW if found to be infected with HBV, they should be advised to stop performing exposure prone procedures.</td>
</tr>
<tr>
<td>HCV&lt;sup&gt;14&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ The recipient exposed to HCV should advise their sexual partner(s) of the potential risk. Discussion of the possible benefits of adopting safer sex practices (such as use of condoms) and the avoidance of pregnancy during follow-up is recommended. Blood donation should be avoided.</td>
</tr>
<tr>
<td></td>
<td>▪ If the source is known not to be infected with hepatitis C, no further follow up will be required unless the recipient develops liver disease or they request additional testing after counselling. At a minimum, this should include testing for anti-HCV at 6 months.</td>
</tr>
<tr>
<td></td>
<td>▪ Those exposed to a source known to be positive for anti-HCV or HCV-RNA (or a source whose hepatitis C status is unknown but who is assessed to be at ‘high risk’) should have serum obtained and tested for HCV RNA at 6 and 12 weeks and for anti-HCV at 12 weeks and 24 weeks. <strong>EVIDENCE</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Recipients found to be anti-HCV and/or HCV RNA positive at any stage during follow-up should have their baseline sample tested for HCV antibodies and also be referred to a consultant with an interest in hepatitis C.</td>
</tr>
<tr>
<td></td>
<td>▪ If HCW is found to be infected with HCV (RNA positive), then they should be advised to stop performing exposure prone procedures.</td>
</tr>
</tbody>
</table>
### HIV

- The recipient exposed to HIV should advise their sexual partner(s) of the potential risk. Discussion of the possible benefits of adopting safer sex practices (such as use of condoms) and the avoidance of pregnancy during follow-up is recommended. Blood donation should be avoided.\(^7\)
- During the follow-up period and in the absence of sero-conversion, recipients need not be subject to any modification of their working practices, for example avoidance of exposure prone procedures.\(^7\)
- If receiving PEP, the person should be followed up weekly for:
  - repeat prescription of the drugs
  - psychological support
  - blood samples including biochemistry (urea and electrolytes), Liver function tests (including gamma GT and amylase) and haematology (full blood count)
  - monitoring acceptability and possible toxicity of PEP drugs.
  - Any need for sickness absence associated with adverse effects of PEP following an occupational exposure should not contribute to the individuals’ sickness absence record.\(^7\)
- A first HIV test should be performed shortly after exposure i.e. within a few days.\(^38\) The first follow-up appointment for testing and physical examination should be scheduled for 6 weeks and 3 months post-exposure; thereafter the recipient should be tested at least once more at 6 months post-exposure\(^39\) (virtually all sero-conversions occur within 6 months of exposure\(^43\), although there have been rare reports of sero-conversions after 6 months.\(^44\))
- Given the very low probability of sero-conversion after 6 months and the unnecessary anxiety that would be caused by extending the testing period beyond 6 months, testing at 12 months is not recommended, but may be considered on a case-by-case basis.
- The routine use of direct virus assay (HIV p 24 antigen or tests for HIV-RNA) to detect infections in exposed individuals is not usually recommended.\(^38\) The availability of these tests can be discussed with the local consultant virologist or microbiologist.
- If individual positive for HIV antibodies, it will be necessary to test the stored baseline sample and refer them to a specialist in HIV medicine. For HCW, manage according to EAGA recommendations.\(^46\) If HCW tests positive for HIV, then they should be advised to stop performing exposure prone procedures.

Blood test results should not be given to the staff member over the telephone, because of the difficulty in confirming identity and confidentiality.

Counselling facilities for individuals anxious about the possibility of having contracted HIV infection can be arranged via the specially appointed counsellors at the local GU medicine Department (daytime) or by telephoning the AIDS HELPLINE 029 2922 3443 (evenings) or the NATIONAL AIDS HELPLINE 0800 567 123 (24 HOURS).

**Step 13** Document the incident

The RD should record the details of the incident.

This must include the following (“three 7's”)

**Info on Incident**
1. Name and details of recipient
2. Date and time of incident
3. Place of incident
4. Any witness to incident?
5. Type of incident

<table>
<thead>
<tr>
<th>Version: 2</th>
<th>Date: 8/12/06</th>
<th>Status: Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author: Dr Rob Atenstaedt</td>
<td>Page: 26 of 52</td>
<td></td>
</tr>
</tbody>
</table>
6. Source of needle/sharp instrument
7. First aid applied

**Info on Management**
1. Risk assessment and explanations given to patient
2. Can source be identified?
3. Is source in an identified high-risk group & their HBV/HCV/HIV status known?
4. Has recipient received Hepatitis B immunization?
5. Tests ordered
6. Drugs prescribed
7. Time between exposure and receiving PEP

**Info on follow-up**
1. Follow up arrangements for receiving test results and continuing vaccinations
2. Precautions advised during follow up period
3. Any persons who have given advice and the advice given
4. The action taken to prevent recurrence
5. Compliance with medication prescribed
6. Adverse effects of drugs
7. Results of any follow-up testing

Signed by RD

| **Table 15** |
|------------------|------------------|
| **Occupational** | **Non-occupational** |
| Details of the incident should be recorded in practice’s accident book. | Details of incident should be recorded in the patient’s case-notes. |

It is the responsibility of staff suffering injury to ensure that completion of the appropriate documentation is in accordance with Health & Safety Regulations. (HCW should complete part 1 of accident form HS1 within 4 hours).

Complete Health & Executive Agency Form F2508 ‘Accidental release of a biological agent likely to cause severe human illness’, rather than an injury (unless the exposure results in three or more days absence from work). Reports can be made online at [www.riddor.gov.uk](http://www.riddor.gov.uk)

All cases of significant occupational exposure to the blood or body fluid from patients who are anti-HIV positive, anti-HCV positive, or HBsAg positive should also be reported to HPA Centre for Infections. Please contact:

Jane Aston or Sarah Tomkins
Surveillance of Occupational Exposures to BBVs Tel 020 8327 7152/7095/6423
Fax 020 8200 7868
[jane.aston@hpa.org.uk](mailto:jane.aston@hpa.org.uk)
[sarah.tomkins@hpa.org.uk](mailto:sarah.tomkins@hpa.org.uk)
8. Prevention of Inoculation Injuries

It is far better to prevent inoculation injuries occurring than react to them. Every effort should be made to avoid blood and body fluids occurring through safe systems of work.

8.1 General Recommendations

Everyone involved in providing care in the community should be educated about standard principles and trained in hand decontamination, the use of protective clothing and the safe disposal of sharps.

Adequate supplies of liquid soap, hand rub, towels and sharps containers should be made available wherever care is delivered.

8.2 Hand hygiene

Hands must be decontaminated immediately before each and every episode of direct patient contact or care and after any activity or contact that could potentially result in hands being contaminated.

Decontamination should be with an alcohol based hand rub, unless hands are visibly soiled, when liquid soap and water should be used.

Before regular hand decontamination begins, all wrist and hand jewellery should be removed and cuts and abrasions covered with waterproof dressings.

When handwashing, the hands should be rubbed together vigorously for a minimum of 10-15 seconds, paying particular attention to the tips of the fingers, the thumbs and the areas between the fingers.

An emollient hand cream should be applied regularly to protect hands from the drying effects of regular hand washing.

8.3 Use of personal protective equipment

Gloves should be worn during invasive procedures, contact with sterile sites and non-intact skin or mucous membranes, and all activities that have been assessed as carrying a risk of exposure to blood, body fluids, secretions and excretions, or to sharp or contaminated instruments.

Gloves should be worn as single-use items. They must be put on immediately before an episode of patient contact or treatment and removed as soon as the activity is completed. Gloves must be changed between caring for different patients, and between different care or treatment activities for the same patient.

Gloves must be disposed of as clinical waste and hands decontaminated after the gloves have been removed.

Gloves that are acceptable to healthcare personnel and that conform to European Community (EC) standards must be available.
Sensitivity to natural rubber latex in patients, carers and healthcare personnel must be documented, and alternatives must be available.

Powered gloves and polythene gloves should not be used in healthcare activities.

Disposable plastic aprons should be worn when there is a risk that clothing may be exposed to blood, body fluids, secretions or excretions, with the exception of sweat. Plastic aprons should be used as single-use items, for one procedure or episode of patient care, and then discarded and disposed of as clinical waste.

Full-body fluid repellent gowns must be worn where there is a risk of extensive splashing of blood, body fluids, secretions of excretions (except sweat), onto the skin or clothing of healthcare practitioners (e.g. when assisting with childbirth).

Face masks and eye protection must be worn where there is a risk of blood, body fluids, secretions and excretions splashing into the face and eyes.

### 8.4 Safe Use and Disposal of Sharps

Sharps must be not passed directly from hand to hand, and handling should be kept to a minimum.

Needles must not be recapped, bent, broken or disassembled before use or disposal.

Used sharps must be discarded into a sharps container (conforming to UN 3291 and BS 7320 standards) at the point of use by the user. These must not be filled above the mark that indicates that they are full.

Containers in public areas must be located in a safe position, and must not be placed on the floor. They must be disposed of by the licensed route in accordance with local policy.

Needle safety devices must be used where there are clear indications that they will provide safer systems of working for healthcare personnel.

### 8.5 Extra

Do not leave sharps for others to clear.

Do not remove needles from disposable syringes. Needles and syringes must be disposed of as a single unit into a sharps box after use.

Sharps containers must be placed out of reach of children at all times.

Vaccination of staff against Hepatitis B should be provided by the GP practice. This offers protection against Hepatitis B but should never be regarded as a substitute for high standards of infection control practice.
9. Potential organisational barriers in applying recommendations

When a new intervention is being planned, a consideration should be made of the problems that might arise. Kurt Lewin identified three critical phases in the implementation of change. In the first, termed “Unfreezing”, the problem is that of identifying and overcoming initial resistance and getting people into the right frame of mind to adopt and implement change. In the second, “changing”, the problems are mainly concerned with putting change into effect, which requires careful planning. In the final phase, “Re-freezing”, the challenge is to ensure that change becomes permanent and accepted. Each of the three stages requires a careful assessment of the situation by methods such as the ‘force-field analysis’ technique; anticipation or monitoring of resistance, and action to eliminate resistance.

Force-field analysis is a technique based around the concept of equilibrium where opposing forces maintain the status quo. Identification, reduction or even removal of resisting forces enables the change process to occur. For this project, force-field analysis involved identifying the potential barriers that could prevent the uptake of the guidelines in general medical practices across Wales. Resisting forces were divided into structural, practitioner-based or patient-based categories (Table 16):

<table>
<thead>
<tr>
<th>Forces driving for change</th>
<th>Forces resisting change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential health gain from preventing blood borne viruses:</td>
<td>Structural barriers:</td>
</tr>
<tr>
<td>- reduce suffering of recipient (pain, disability and death).</td>
<td>- lack of GP/PN time to consult guidelines.</td>
</tr>
<tr>
<td>- reduce financial cost to practice.</td>
<td>- additional workload for primary care.</td>
</tr>
<tr>
<td>National and local agendas:</td>
<td>Practitioner based barriers:</td>
</tr>
<tr>
<td>- national priorities</td>
<td>- belief that change is not necessary.</td>
</tr>
<tr>
<td>- NPHS priorities</td>
<td>- unconvinced of long-term benefit to both patient and practitioner.</td>
</tr>
<tr>
<td>- LHB priorities</td>
<td>- lack of knowledge/training on NSIs.</td>
</tr>
<tr>
<td>CHC campaigning on behalf of patients</td>
<td>- unsure of most effective methods to manage exposure to NSIs.</td>
</tr>
<tr>
<td>Patient based barriers:</td>
<td>- guideline overload: unsure which to use.</td>
</tr>
<tr>
<td>- lack of knowledge about risk of NSIs.</td>
<td>- low tolerance or fear of change.</td>
</tr>
<tr>
<td>- resistance to following preventive advice or take treatment.</td>
<td></td>
</tr>
</tbody>
</table>

Each practice should identify their own barriers and strategies to overcome them.
10. Training implications

The policy and the associated procedure will be disseminated to all general medical practices in Wales.

All staff should receive information on action to be taken following an exposure incident as part of their induction programme.53

Any staff who handle sharps must receive appropriate training in safe use and disposal.54

11. Managerial responsibilities

Managerial responsibilities for ensuring the implementation of this policy lie with individual general medical practices.

12. Cost implications

The application of new guidelines will always have cost implications. However, the additional cost of these guidelines is likely to be offset by savings to practices from reducing the threat of legal claims.

13. Key criteria for monitoring or audit

The NPHS will undertake an audit looking at referrals from general medical practices to A&E departments for NSIs.

14. Procedure for updating this guideline

The responsibility for reviewing this policy rests with the ICDS of the NPHS.

The policy will be subject to review every 3 years. The final document will be produced in December 2006 after comments have been received. This document will then be updated in December 2009.

The responsibility for monitoring the implementation of this policy lies with the NPHS. See section 13 on audit arrangements

15. Details of guideline development group

The following individuals helped to develop this guideline:

Dr Rob Atenstaedt Specialist Registrar in Public Health Medicine, NPHS.
Dr Sandra Payne, Regional Director (North Wales), NPHS.
Dr Richard Roberts, Consultant in Communicable Disease Control, NPHS.
Dr Michael Glenn, Consultant Occupational Physician, Cardiff & Vale NHS Trust.
Dr Diana Westmoreland, Consultant Virologist, NPHS.
Professor Ian Russell, Professor of Public Health, University of Wales Bangor.
16. Extra Evidence

Case-control studies have found that factors associated with an increased risk of occupationally acquired HIV infection included deep injury, visible blood on the device which caused the injury, injury with a needle which had been placed in a source patient’s artery or vein and terminal HIV-related illness in the donor.\textsuperscript{55,56}

A case-control study, conducted by the US Centers for Disease Control, concluded that the administration of zidovudine prophylaxis to health care workers occupationally exposed to HIV was associated with an 80% reduction in the risk of occupationally acquired HIV infection.\textsuperscript{55}

Early testing for HCV RNA, if negative, should give some reassurance. In a follow-up study of individuals who sustained NSIs from patients with non-A, non-B hepatitis, both of the health care workers who developed anti-HCV were HCV RNA positive one month after exposure;\textsuperscript{57} early genome detection was not performed on HCWs who did not seroconvert. The negative predictive value of genome detection at 6 weeks is therefore not documented, but it is likely to correlate with a lower risk of transmission.\textsuperscript{14}

17. Further help/information

Contact numbers for the local laboratories plus individuals who can be contacted for help and information can be found in Table 17 (suppliers of Hepatitis B immunoglobulin are shown *). Otherwise contact Teresa Gibbs at CfI Immunisation Department on 0208 327 7471 for supplies.
### Table 17

<table>
<thead>
<tr>
<th>Region</th>
<th>LHB Areas</th>
<th>CCDC contacts</th>
<th>Consultant Microbiologist contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NORTH</strong></td>
<td>Isle of Anglesey</td>
<td>Dr Christine Whiteside Preswylfa</td>
<td>Dr Stuart D’Arcy* NPHS Microbiology Bangor Ysbyty Gwynedd Bangor LL57 2PW Tel: 01248 384367</td>
</tr>
<tr>
<td></td>
<td>Gwynedd</td>
<td>Hendy Road Mold</td>
<td>Dr Nick Looker* Dr Philip Mannion Microbiology Laboratory Glan Clwyd Hospital Rhyll, Denbighshire LL18 5UJ Tel: 01745 583737</td>
</tr>
<tr>
<td></td>
<td>Conwy</td>
<td>Flintshire Ch7 1PZ</td>
<td>Dr Chris Cefai Department of Microbiology Croesnewydd Road, Wrexham LL57 2PW Tel: 01978 291100</td>
</tr>
<tr>
<td></td>
<td>Denbighshire</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flintshire</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wrexham</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MID &amp; WEST</strong></td>
<td>Carmarthenshire</td>
<td>Dr Mac Walapu St David's Hospital</td>
<td>Dr Lorna Macfarlane* NPHS Microbiology Ysbyty Bronlais Aberystwyth SY23 1ER Tel: 01970 635813</td>
</tr>
<tr>
<td></td>
<td>Ceredigion</td>
<td>Jobswell Road Carmarthen SA31 2AF</td>
<td>Dr. Martin Sheppard Withybush Hospital, Fishguard Road, Haverfordwest, Pembs., SA61 2PZ Tel: 01437 764545</td>
</tr>
<tr>
<td></td>
<td>Pembrokeshire</td>
<td>Tel: 01267 225225</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Powys</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Author: Dr Rob Atenstaedt  
Page: 33 of 52
| MID & WEST | Bridgend  
NORTH Port Talbot  
Swansea | Dr Sarah Hayes | Dr Ann Lewis*  
Dr Nidhika Berry  
Dr Khalid El-Bouri  
NPHS Microbiology  
Singleton Hospital  
Swansea | MID & WEST  
Neath Port Talbot  
Swansea | Dr Bonnie Banerji*  
Dr Louise Wooster  
Dr Keith Thomas  
Princess of Wales Hospital, City Road,  
Bridgend, Mid Glamorgan.  
CF31 1RQ  
Tel: 01656 752752 |
| --- | --- | --- | --- | --- | --- |
| SOUTH-EAST | Cardiff  
Merthyr Tydfil  
Rhondda Cynon Taff  
The Vale of Glamorgan | Dr Marion Lyons  
Dr Mark Temple  
Temple of Peace & Health  
Cathays Park  
Cardiff  
CF1 3NW  
Tel 02920402478 | Dr Mark Hastings*  
Dr Rosemary Barnes  
Dr Eleri Davies  
Dr Ian Hosein  
Dr Robin Howe  
Dr Rachel Jones  
Dr Diana Westmoreland  
Department of Medical Microbiology  
University Hospital of Wales  
Heath Park  
Cardiff CF14 4XW  
Tel: 029 20745422 | SOUTH-EAST | Cardiff  
Merthyr Tydfil  
Rhondda Cynon Taff  
The Vale of Glamorgan | Dr Donald Ribeiro  
Llandough Hospital, Penlan Road, Penarth.  
CF64 2XX  
Tel: 029 2071 1711 | Dr Diana White*  
Royal Glamorgan Hospital, Ynys Maerdy,  
Llantrisant.  
CF72 8XR  
Tel: 01443 443443 |
<table>
<thead>
<tr>
<th>SOUTH-EAST</th>
<th>Blaenau Gwent Caerphilly Monmouthshire Newport Torfaen</th>
<th>Dr Lika Nehaul Mamhilad Park Estate Pontypool Gwent NP4 OYP Tel: 01495 332000</th>
<th>Dr Neil Carbons Nevill Hall Hospital Abergavenny, Gwent NP7 7EG Tel: 01873 732732</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dr Elizabeth Kubiak* Dr Diane McCracken Dr Jane Salmon Royal Gwent Hospital, Cardiff Road, Newport, Gwent NP20 2UB Tel: 01633 234234</td>
</tr>
</tbody>
</table>

**RETURN TO BEGINNING**
18. APPENDICES

Literature search to identify existing guidelines  

Appendix 1a

The search was carried out by the LKMS team of the NPHS. The search was restricted to guidelines that addressed the question: "How should staff and patients with Needle-stick Injuries be managed in primary care?"

Keywords
Staff   Patients   Needle-stick injuries
Management   Primary care   Guidelines

The search was conducted on a number of different databases. In addition the following databases of guidelines were searched: Agency for Healthcare Research and Quality (National Guidelines Clearing House); the Canadian Medical Association Clinical Practice Guidelines Infobase; Scottish Intercollegiate Guidelines Network; North Cumbria Clinical Guidelines; and TRIP. Relevant professional associations were contacted for guidelines that they had developed including:

The following inclusion and exclusion criteria were applied.

Inclusion criteria:
Publications includes description of methodology used to design guidelines

Exclusion Criteria
Publications before 1994
Review of guidelines produced by other authors
Guidelines based on opinion of author
Guidelines designed for South-East Asia

Abstracts from the search were reviewed to access whether they addressed the question of interest.
The results are as follows:

Medline

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>&quot;Needlestick Injuries/ 1337</td>
</tr>
<tr>
<td>2</td>
<td>GUIDELINES/ or PRACTICE GUIDELINES/ 42296</td>
</tr>
<tr>
<td>3</td>
<td>1 and 52</td>
</tr>
<tr>
<td>4</td>
<td>Records Kept 5</td>
</tr>
<tr>
<td>5</td>
<td>SAFETY MANAGEMENT/ or PRACTICE MANAGEMENT/ or RISK MANAGEMENT/ or PATIENT CARE MANAGEMENT/ 26507</td>
</tr>
<tr>
<td>6</td>
<td>1 and 4 107</td>
</tr>
<tr>
<td>7</td>
<td>limit 5 to abstracts 52</td>
</tr>
<tr>
<td>8</td>
<td>Records Kept 2</td>
</tr>
</tbody>
</table>

Author: Dr Rob Atenstaedt
Page: 36 of 52
Trip Database

<table>
<thead>
<tr>
<th></th>
<th>Needle stick injuries</th>
<th>216</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>and Guidelines</td>
<td>1</td>
</tr>
</tbody>
</table>

PubMed

<table>
<thead>
<tr>
<th></th>
<th>Needle stick injuries</th>
<th>183</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>and Etiology</td>
<td>125</td>
</tr>
<tr>
<td>3</td>
<td>Records kept</td>
<td>2</td>
</tr>
</tbody>
</table>

No records located from the following resources:
- EBM Reviews – ACP Journal Club
- EBM Reviews – Controlled Clinical Trials Registry (CCTR)
- EBM Reviews – Database of Abstracts of Reviews of Effectiveness
- EBM Reviews – Cochrane Database of Systematic Reviews
- Health Management Information Consortium (HMIC)
- Effective Health Care Bulletins
- Effectiveness Matters
- Bandolier – Evidence-based Health Care
- SUM Search
- HTA Database
- NELH Guidelines Finder
- National Research Register
- Research Findings Register
- ATTRACT
Inoculation Injury sustained

Advise recipient on First Aid

Decide whether injury is occupational or non-occupational

Occupational

Non-occupational

Report to Practice Manager and Senior Nurse/GP

Encourage member of public to report

Assess exposure risk to recipient

Is material high risk?

Yes

Is Injury high risk?

Yes

Counsel the recipient

No

Reassure recipient

Assess the BBV status of the source

Test for BBVs

Assess risk factors for BBVs

Perform individual risk assessment

Assess immune status of recipient/Take blood samples

Clinically manage the recipient

Follow-up recipient

Document the exposure incident

Known and agrees to test

Known: does not agree to test

Unknown

Version: 2
Date: 8/12/06
Status: Final
Author: Dr Rob Atenstaedt
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FORM TO BE USED FOR ASSESSMENT OF RISK AND RECORDING OF TREATMENT FOLLOWING POSSIBLE EXPOSURE TO BLOOD-BORNE VIRUSES

SECTION A: Details of the Recipient

First Name: Surname:
Date of Birth:
Job title / Post: Occupation:
Home address:
Home telephone No:

Hepatitis B Status
Has recipient been immunized against Hepatitis B virus? Yes No Don’t know
If Yes:
Date of completion of course?
Date of last vaccination booster?
Was antibody blood test done? Yes No Result: Immune Partially immune non responder

SECTION B: Details of Source

Is the source patient known? Yes No
If Yes:
First Name Surname:
Date of Birth:
Address:
Home telephone No:

SECTION C: Assessment of exposure risk

1. Nature of the incident:
Date of incident: Time of incident:
Place of incident: Name of witness:
Nature of Material: Nature of Injury:

Significant: Yes No Significant: Yes No
Overall, is Exposure Significant? Yes No
Date of completing this form: Time of completing this form:

2. Assessment of source infectivity (tick appropriate section)

<table>
<thead>
<tr>
<th>Virus type</th>
<th>Known Positive or known high risk</th>
<th>Known negative or known low risk</th>
<th>Unknown risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION D: Investigations checklist

(Circle when complete)

Has first aid treatment been given? Done
Blood taken from recipient, test requested for anti HBs and serum storage Done
Request for bloods to be taken from source patient and tests requested as necessary

HBV HIV HCV
### SECTION E: Post exposure prophylaxis treatment record

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has HBIG been given?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has hepatitis B vaccination been given?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the recipient been counselled?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has PEP been offered?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has PEP been accepted?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has written consent been obtained?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has PEP been given?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Time between exposure and receiving PEP:**

**Drugs prescribed for PEP:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Signature of Doctor</th>
</tr>
</thead>
</table>

### SECTION F: Details of follow-up arrangements

To include: Follow up arrangements for receiving test results and continuing vaccinations; Precautions advised during follow up period; Any persons who have given advice and the advice given; The action taken to prevent recurrence; Compliance with medication prescribed; Adverse effects of drugs; Results of any follow-up testing.
INFORMATION FOR RECIPIENT

A number of infections can be transmitted in blood and other body fluids, especially HIV (Human Immunodeficiency Virus, the virus which causes AIDS), Hepatitis B and Hepatitis C. These infections cannot pass through intact skin, but you can become infected if blood or other certain body fluids are injected into you. It can also happen if body fluids are splashed onto certain parts of your body such as the inside of your mouth, although the risk of infection through this route is much lower.

Infection is most likely to occur through a sharps or needlestick injury, so it is important that any sharp instruments are handled and disposed of correctly. The best way of avoiding infection is not to be involved in a sharps incident. If you are involved, don't panic. Treatment is available if you are at risk of infection, but it must be started as quickly as possible. The doctor on duty will arrange for the risks to be assessed, and you will be offered treatment if it is appropriate.

HIV
If you have a needle stick injury with an instrument from an HIV positive patient, your chance of becoming infected is only 1 in 300 overall. The risk is higher if the incident involved a hypodermic needle, if the instrument had been placed directly inside a blood vessel, or if the patient is terminally ill with HIV. It is lower if his/her body fluids are splashed onto certain parts of your body (such as the inside of the mouth) and not injected.

This risk can be reduced by about 80% by Post Exposure Prophylaxis (PEP), which involves a combination of drugs started as soon as possible after the incident and taken for a month. We do not recommend that everyone involved in a needlestick incident takes them because they can have significant side effects, and most people do not need them. Instead, a risk assessment is carried out in each case, and you will be offered treatment if it is appropriate.

If you sustain an injury from a fresh blood contaminated needle in the community from an unknown source, then the upper limit of risk of HIV transmission might be expected to be 1 in 65,000. However, the risk will be an order of magnitude lower for “dry needlestick” injuries – needles discarded in the community containing old dried blood.

HEPATITIS B (HBV)
Hepatitis B is much more infectious than HIV, but there is a vaccine, and it is Practice policy for all staff at risk of needlestick injuries to be offered vaccination. In addition, some people in the community have also received vaccination. If you have been successfully vaccinated, you will not become infected. However, a few people do not respond adequately to the vaccine, or have not been vaccinated for one reason or another. If you have a needlestick injury with an instrument from an HBV positive patient, your chance of becoming infected is about 1 in 3. If you sustain an injury from a fresh blood contaminated needle in the community from an unknown source, then the upper limit of risk of HBV transmission might be expected to be 1 in 2,000. Risk will be an order of magnitude lower for “dry needlestick” injuries. Again, a risk assessment is carried out in each case, and you will be offered preventative treatment if it is appropriate.

HEPATITIS C (HCV)
If you have a needlestick injury with an instrument from an HCV positive patient, your chance of becoming infected is only 1 in 50 overall. If you sustain an injury from a fresh blood contaminated needle in the community from an unknown source, then the upper limit of risk of HCV transmission might be expected to occur in around 1 in 222. “Dry needlestick" risks as above.

Unfortunately, there is at present no treatment which has been shown to prevent you from becoming infected if you have been exposed. However we will, if possible, test the source patient’s blood to find out if you are at risk of infection.
INFORMATION FOR SOURCE

An incident has occurred in which someone has been accidentally exposed to your blood or other body fluids. If you have a blood-borne infection such as Hepatitis B, Hepatitis C or HIV (human immunodeficiency virus), they might catch it because of this incident, but we may still be able to prevent them from becoming infected. We are therefore asking your permission to test your blood, so that we can take appropriate action to protect the individual involved.

Do I have to be tested?

No. If you do not agree to be tested, your care will not be affected in any way.

What tests will be done?

We will test your blood for evidence of Hepatitis B, Hepatitis C, and HIV.

What will happen to the results?

The results will be kept confidential. They will be filed in your own notes, and those of the health worker involved. The recipient will be informed, so that he or she can decide whether to take protective treatment, but nobody else will be told without your consent.

What will happen to me if a test is positive?

You will be offered appropriate advise and medical care to deal with the infection, but your care will not be affected in any other way.

What will happen to the recipient?

If your results show that it is necessary, he or she will be offered protective treatment or vaccination. There is evidence that this may considerably reduce their chance of being infected.

Will it affect my mortgage or insurance policies?

Your existing life insurance policies will not be affected. If you are taking out a new policy, insurance companies should only ask you if you have had a positive test. If you have had a positive test, they may increase the premium or refuse to insure you. If the result is negative your insurance will not be affected.
SOURCE’S CONSENT FORM

Appendix 4

For use after Sharps Injury

An incident has occurred involving an individual being accidentally exposed to your blood/body fluids.

We are concerned that if you, the patient, have a blood-borne infection such as Hepatitis B, Hepatitis C or HIV (human immunodeficiency virus), there may be a risk of transmitting the infection to the recipient as a result of their exposure.

We would, therefore, like to invite you to consent to having blood taken for the following viral infections: Hepatitis B, Hepatitis C and HIV. You will be informed of the test result(s) and the outcome will be kept confidential. In the event of the results indicating that you have any of these infections, your care will not be affected. You will be offered appropriate advice and medical care. (The recipient will be offered medication/vaccination based on your results, which will be retained in their Occupational Health records and your own medical records).

I………………………………………………patient/parent/guardian

Of………………………………………………date of birth……………………………

have read the above statement and discussed the blood tests performed with Doctor/Nurse ……………………………and have agreed to have my/my child's blood tested for the following:

Hepatitis B
Hepatitis C
HIV

Signature of patient/parent/guardian………………………………… Date……

Signature of child/young person (if applicable) … … … … … Date… …

Name of Doctor/Nurse (Please print) ………………………………… Date… …

Signature of Doctor/Nurse……………………………………………… Date……
CIRCUMSTANCES IN WHICH SOURCE’S BLOOD CAN BE TAKEN WITHOUT CONSENT

Appendix 5

GMC’s guidance on Serious Communicable Diseases (paras 8-11) states that consent should be obtained where possible.

If the source patient is unconscious when the injury occurs, consent should be sought once the patient has regained full consciousness.

However, if the patient refuses testing, is unable to give or withhold consent, or does not regain consciousness within 48 hours, the RD should consider the severity of the risk to the recipient.

The RD should not arrange testing against the patient’s wishes or without consent other than in exceptional circumstances e.g. when the RD has good reason to think that the patient might have a condition such as HIV for which prophylactic treatment is available. In such cases, the RD may test an existing blood sample, taken for other purposes, but should consult an experienced colleague first. The RD will have to justify this decision as it may be challenged in the courts or the subject of a complaint to the RD’s employer or to the GMC.

If the RD decides to test without consent, they must inform the patient as soon as possible: only the patient and those who have been exposed to the infection may be told about the result. In these exceptional circumstances, neither the fact that the test has been undertaken, nor its result, can be entered in the patient’s medical records without their consent.
Please ensure that the following information is provided when completing the microbiology request form for the donor patient’s blood sample. This will ensure that the laboratory have the information they need, and the results will reach those who need the information.

Take 10ml serum (in 2 red top bottles).

SURNAME, FIRST NAME(S), HOME ADDRESS, DATE OF BIRTH
Source patients details. Ensure all details are completed in full.

G.P.
Doctor looking after the donor, (so that donor can be informed of result).

CLINICAL NOTES
“Source of body fluid incident” and date.
Recipient’s name and date of birth.
Any other relevant information, e.g. known Hep B positive.

SPECIMEN AND EXAMINATION REQUIRED
HIV, Hepatitis B and Hepatitis C markers

DATE OF COLLECTION
Date sample is taken

SIGNATURE OF G.P.
Signature and name in capitals of doctor requesting test.
HIV PEP PRESCRIPTION CHECKLIST

To be completed by staff member assessing inoculation injury:

Part 1: Recipient involved

Surname   First names   Date of Birth

Grade   Department

Part 2:
1. Is recipient:
pregnant     YES NO
trying to conceive     YES NO
breast feeding     YES NO

2. Does recipient have any underlying medical problem?     YES NO
   If yes, what?

3. Is recipient taking any medication?     YES NO
   If yes, what?

Part 3: Action taken
4. Have blood samples been taken from recipient for
   full blood count, liver function tests, urea & electrolytes, amylase,
   and stored serum?     YES NO

5. Has recipient been advised to use condoms
   during sexual intercourse?     YES NO

6. Has recipient been informed that he/she
   can continue working normally?     YES NO

Doctor’s signature   Date

I DO/DO NOT WISH TO TAKE PEP

Recipient’s signature   Date
PEP INFORMATION FOR RECIPIENT EXPOSED TO HIV

INTRODUCTION

There is only a small risk of acquiring HIV infection after a needlestick injury where the source is known to be HIV positive. That risk is about one in 300 overall, although it is somewhat higher if the source patient is terminally ill, the needle was placed directly into his or her blood vessel, or a high volume of blood was injected into you. Blood or other body fluids splashed onto your mucous membranes are less likely to give you the infection - the chance is only about one in a thousand. Evidence shows that HIV positive blood which is splashed onto intact skin does not transmit the infection.

It has been shown that antiviral drugs given soon after the injury can reduce the risk of infection by about 80%, and the doctor who carried out your risk assessment has recommended that you consider taking this post exposure prophylaxis. However, it is important to understand that, while this treatment can reduce the risk to you, it cannot prevent infection in every case.

POST EXPOSURE PROPHYLAXIS (PEP)

A one month course of the following drugs is recommended:

- Zidovudine 250 mg twice daily
- Lamivudine 150 mg twice daily
- Nelfinavir 1250 mg twice daily

Treatment should begin as quickly as possible, preferably within two hours. If it has been delayed beyond this for any reason, the assessing doctor will take this into account when deciding whether to recommend PEP. If you are prescribed PEP, you will be given a starter pack to cover the first few days, and the rest after full assessment.

Before you start taking PEP, the following factors should be considered:

1. If you are female, are you pregnant, breast feeding, or trying to conceive?
2. Do you have an underlying medical condition which may make PEP inadvisable, such as renal stones or a history of pancreatitis or blood disorder?
3. Are you taking any medication?

Frequently asked questions relating to PEP are answered on the attached sheets. If you have any further questions, please ask the assessing doctor. Before starting the drugs, your blood will be taken for full blood count, liver function tests, urea & electrolytes, amylase, and serum will be stored. These tests (except storing serum) will be repeated after two weeks. In addition, blood will be taken for HIV antibody testing at 3 months and 6 months.

GENERAL ADVICE

1. It is advisable to use condoms during sexual activity for at least three months after exposure.
2. You can continue your normal occupation.
FREQUENTLY ASKED QUESTIONS: ZIDOVUDINE AND LAMIVUDINE

What are Zidovudine and Lamivudine?
Zidovudine and Lamivudine are antiretroviral agents which are used to prevent or treat HIV infection.

How do I take them?
The recommended dose of zidovudine is 250 mg twice daily, and of lamivudine is 150 mg twice daily. They should be taken on an empty stomach, about an hour before eating.

What should I do if I miss a dose?
Take the missed dose as soon as possible, unless it is time for your next dose. DO NOT take two doses at the same time.

What are their side effects?
Zidovudine and lamivudine rarely cause problems in PEP. However, they can cause stomach pains, nausea, vomiting, numbness, tingling, burning or pain in the hands or feet, tiredness, headache, diarrhoea, sleep disturbances, loss of appetite, runny or stuffy nose, or unusual or bad taste in the mouth. Contact your doctor if you have problems with these side effects.

Contact your doctor immediately if you experience stomach pain, or if the pain spreads to the back or sides.

Is it safe to take other medication with them?
Please make sure your doctor is aware of any other medication you are taking, because many medications should not be taken with zidovudine or lamivudine.

Can I take them if I am pregnant?
They are not normally recommended in the early stages of pregnancy, because their safety has not been established.

Can I take them if I am breast feeding?
Breast feeding is not recommended, because high levels occur in breast milk and their effects on the baby are unknown.
NELFINAVIR

What is Nelfinavir?
Nelfinavir is a protease inhibitor, which is used to prevent or treat HIV infection.

How do I take it?
The recommended dose is 1250 mg twice daily. It should be taken on an empty stomach about an hour before eating.

What should I do if I miss a dose?
If you miss a dose, you should skip it. DO NOT take two doses at the same time. Take your next dose at the usual time.

What are its side effects?
Nelfinavir rarely causes side effects when used in PEP. It can cause stomach pain, nausea, vomiting, and diarrhoea. Contact your doctor if you have these side effects.

Contact your doctor immediately if you experience a sharp mid back or side pain, or notice blood in your urine. This side effect can be prevented by drinking large amounts of fluid every day.

Is it safe to take other medication with it?
Please make sure your doctor is aware of any other medication you are taking, because many medications should not be taken with nelfinavir.

Can I take it if I am pregnant?
It is not normally recommended for use in pregnancy, because its safety has not been established.

Can I take it if I am breast feeding?
Breast feeding is not recommended, because high levels occur in breast milk and its effects on the baby are unknown.
19. Acknowledgements

I would like to thank members of the guideline development group for their work on this working draft, plus all the general medical practices, trusts and LHBs across Wales who contributed to the document.

20. References

12. GPs should liaise with the police surgeon and also use guidelines such as those by British Association for Sexual Health and HIV (BASHH): http://www.bashh.org/guidelines/2002/sexassault_0601.pdf and http://www.bashh.org/guidelines/2006/pepse_0206.pdf. It is important that any forensic issue is protected for evidence.
20. A 2003 survey of the prevalence of anti-HBV (a marker for present and previous HBV infection) in the saliva of injecting drug users found that the prevalence was about 8% in Wales. [HPA. Shooting up: infections among injecting drug users 2003; London: 2004]. If it is
assumed that all these infections were acquired in adolescence or adulthood, and 10% of those infected in adult life will develop persistent HBV infection and remain HbsAg positive, and that 20% of these will also be HBeAg positive, then the likely prevalence of HBeAg in such injecting drug users is 1 in 625. The risk of HBV transmission after percutaneous exposure to HBeAg positive blood is about 30%; HBV transmission might thus be expected to occur in 1 in 2000 unknown source percutaneous exposures (This calculation assumes that the community needle-stick injury is not from a sterile or uncontaminated needle-stick).

21. In 2003, 16% of IDUs had antibodies to hepatitis C infection [HPA, Shooting up: infections among injecting drug users 2003 (London, 2004)]. If it is assumed that all of these infections were acquired in adolescence and adulthood and that 80% of those infected in adult life will develop persistent HCV infection and remain HCV positive, then the likely prevalence of HCV in injecting drug users is 1 in 4. The risk of HCV transmission after percutaneous exposure to an HCV-positive source has been estimated to be 1.8%; HCV transmission might thus be expected to occur in 1 in 222 unknown source percutaneous exposures. (This calculation assumes that the community needle-stick injury is not from a sterile or uncontaminated needle-stick).

22. In 2003, UAPMP survey, no participants out of 215 in Wales tested positive for HIV [HPA, Shooting up: infections among injecting drug users 2003 (London, 2004)]. However, if we assume a prevalence of 0.5% (that in elsewhere in England and given a 3.2/1000 risk if source was positive, HIV transmission might thus be expected to occur in this 1 in 65,000 unknown source percutaneous exposures. (This calculation assumes that the community needle-stick injury is not from a sterile or uncontaminated needle-stick).


37. Greenhill Medical Centre. Recipient of Needlestick Injury; n.d.
42 Bro Morgannwg NHS Trust. Inoculation Injury Policy for Health Care Workers occupationally exposed to human immunodeficiency, Hepatitis B (and D) or Hepatitis C virus; 2004.
47. Drs Harris, Williams & Rhys Ty Doctor, Nefyn. Protocol for Needle Stick Injuries; n.d.
49. Tudor Gate Surgery. Protocol for Needlestick Injuries to Practice Staff; n.d.
51. National Institute for Clinical Excellence, Clinical Guideline 2. Infection Control: Prevention of healthcare-associated infection in primary and community care; 2003. Evidence grading presented in the NICE documentation has been translated for use in this document. NICE document presents evidence A-D: this document presents it A-C, where A in NICE is equivalent to A in this document, B/C in NICE is equivalent to B in this document and D in NICE is equivalent to C in this document.
57. Conwy & Denbighshire NHS Trust. Staff Sharps/Body Fluid Incident Policy; 2002