STANDARD OPERATING PROCEDURE FOR INCIDENTS INVOLVING POTENTIAL EXPOSURE TO BLOOD BORNE VIRUSES THROUGH NEEDLESTICK INJURIES & OTHER NON-SEXUAL EXPOSURES

Standard Operating Procedure

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<tr>
<th>DATE OF APPROVAL</th>
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<tr>
<td>UNIQUE IDENTIFICATION</td>
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<td>Consultant; Director of Laboratory Medicine and Consultant Virologist</td>
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Definitions and abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>Anti HBS</td>
<td>Anti Hepatitis B Surface Antigen Antibody</td>
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<tr>
<td>BBV</td>
<td>Blood-Borne Viruses - refers collectively to human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV)</td>
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<td>CSHC</td>
<td>Chalmers Sexual Health Centre</td>
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<td>GUM</td>
<td>Genito-Urinary Medicine</td>
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<td>HBIG</td>
<td>Hepatitis B Immunoglobulin</td>
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<td>HBV</td>
<td>Hepatitis B Virus</td>
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<td>HCV</td>
<td>Hepatitis C Virus</td>
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<td>HCW</td>
<td>Health Care Worker</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>ID</td>
<td>Infectious Diseases</td>
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<td>OHS</td>
<td>Occupational Health Service</td>
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<td>PCR</td>
<td>Polymerase Chain Reaction</td>
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<td>PEP</td>
<td>Post Exposure Prophylaxis</td>
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<td>RHSC</td>
<td>Royal Hospital for Sick Children</td>
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<tr>
<td>RIDU</td>
<td>Regional Infectious Diseases Unit</td>
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<tr>
<td>RIE</td>
<td>Royal Infirmary of Edinburgh</td>
</tr>
<tr>
<td>SJH</td>
<td>St John’s Hospital</td>
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<tr>
<td>WGH</td>
<td>Western General Hospital</td>
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1. Introduction

This document gives practical step by step guidance on what to do after potential exposure to blood-borne viruses (BBV) following a needle-stick or other non-sexual incident. It is a standardised operating procedure (SOP) established as part of the NHS Lothian "Working with Blood-Borne Viruses Policy". It deals with occupational injuries sustained by NHS health-care workers (HCW), third sector workers in voluntary agencies providing BBV testing using dry blood spot tests, as well as non-occupational injuries. The Occupational Health Service (OHS) does not get involved in non-occupational injuries or injuries to third sector workers.

Individuals presenting after sexual exposure or assault should be assessed according to the Lothian Guidelines for Post-Exposure Prophylaxis for Sexual Exposure to BBVs (PEPSE) (revised July 2014), available on the intranet.

2. Immediate Action

2.1 Wound care

Wash injury thoroughly with warm running water and soap

Encourage bleeding

Cover with a waterproof plaster

Exposed mucous membranes, including conjunctivae, should be irrigated copiously with saline eye wash after removal of contact lenses

2.2 Informing people in case of NHS health care worker (HCW) injuries

The injured person

- Report injury to line manager (Consultant on duty in the case of medical staff)
- Contact Occupational Health Service (OHS) on 0131 537 9369 or extension 49369 (on aircall via Astley Ainslie switchboard 0131 537 6000 outwith normal hours of 08.00 to 16.00, Monday to Friday).

The line manager

- Clarify that a needle-stick or other significant exposure injury has occurred
- Ensure that the individual has reported to OHS for advice and follow-up
- Carry out a risk assessment with assistance from OHS (see section 3 below). For Regional Infectious Diseases Unit (RIDU) and Chalmers Sexual Health Centre (CSHC) staff, the risk assessment will be carried out by the consultant on-call, but the OHS nurse must also be informed in every case.
- There is a legal requirement for line management to accurately record all injuries occurring within the organisation. An incident form should be filled out in all cases. Confidentiality is paramount and the name of the injured party should not be included in any formal reports. Access to named information on the Datix system is password protected and restricted to key members of staff. The Datix reporting system should be used where available. All details should be filled in as usual, but the source patient should be identified by initials and case note number only, and the injured person should be referred to by initials and date of birth only. The full name of the injured person should be written / kept at ward / department level only.
- If appropriate, ensure that blood is obtained from the source patient for testing for BBVs (see section 4.5)
3. **Risk Assessment of Exposure**

3.1 **Who does risk assessment when a HCW has been injured?**

The line manager does this with assistance from the on-call OHS nurse. If the injury is sustained by a single-handed HCW (e.g. salaried dental practitioner), this person should contact the on-call OHS nurse (if covered by this service) or the duty Infectious Diseases (ID) consultant for advice.

3.2 **Who does risk assessment when a third sector worker or member of the public has been injured?**

This is done by the doctor to whom the injured person presents e.g. a doctor in A&E or a GP. Expert advice is available from GUM and ID consultants on call in CSHC or RIDU (via switchboard - Tel No. 0131-536-1000). Both units provide on-call advice Monday - Friday, 09.00 – 17.00. Out-of-hours cover is provided solely by ID consultants at RIDU.

Children with needle-stick or exposure injuries are usually seen at the A&E department at RHSC. Expert advice can be obtained (at any time) from Dr Laura Jones, Consultant Paediatrician, who can be contacted via switchboard (0131 536 1000). In the event that Dr Jones cannot be contacted out-of-hours then contact the Paediatric Infectious Disease on-call consultant in Glasgow Tel 0141 201 0000.

3.3 **How to assess whether there has been significant exposure**

The significance of the exposure depends on the type of exposure and the type of body fluids involved.

**Type of exposure:** there are three types associated with significant risk.

- Percutaneous injury (from needles, instruments, bone fragments, significant bites which break the skin, etc)
- Exposure of broken skin (abrasions, cuts, eczema etc)
- Exposure of mucous membranes including the eyes

**Type of body fluid:** the following are potentially infectious for BBV.

- Blood
- Amniotic fluid
- Cerebrospinal fluid
- Human breast milk
- Pericardial, peritoneal, synovial and pleural fluid
- Saliva in association with dentistry (likely to be contaminated with blood, even when not obviously so)
- Unfixed human tissues and organs
- Any other body fluid if visibly bloodstained
- Exudative or other tissue fluid from burns or skin lesions
- Genital tract secretions

Note that urine is not considered to be an infectious fluid (unless visibly blood stained).

**Transmission of HIV by human bite** has been reported but is extremely rare. In those rare cases where it has occurred there has been severe trauma with extensive tissue damage and the presence of blood. Even if one party (biter or victim) is known to be HIV positive, a significant exposure is unlikely.
Possible biting scenarios include:

**Known HIV positive person bites HIV negative person:** a significant exposure would require some form of mucosal trauma to the mouth of the biter and severe trauma with extensive tissue damage to the victim

**HIV negative person bites known HIV positive person:** significant oral exposure would occur if there was significant bleeding from the victim into the mouth of the biter and some form of mucosal trauma to the mouth of the biter

If neither party is known to be HIV positive then a bite would not constitute a significant risk for HIV transmission.

### 3.4 Outcome of the initial risk assessment

If risk assessment indicates that no significant exposure has occurred, then no further action is required. If risk assessment indicates that significant exposure has occurred, go to Section 4.0.

### 4. What to do if significant exposure has occurred

#### 4.1 Assess the risk of transmission

Assess the nature of exposure and the source status. This will inform your course of action. See appendix 1, also flowchart in Appendix 2.

**Table 1: Summary of recommended action following needlestick injury**

<table>
<thead>
<tr>
<th>Nature of exposure</th>
<th>Source status</th>
<th>Recommended action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not significant</td>
<td>Not relevant</td>
<td>No action required</td>
</tr>
<tr>
<td>Significant exposure</td>
<td>Source identity known. Known sero-negative for BBVs within last month</td>
<td>Decide whether to <strong>seek source blood testing</strong> based on likelihood of BBV infection occurring since last test. If so, treat as “BBV status unknown” below. Blood for storage: required HIV: PEP not required. HBV: See Section 6.0 Follow-up: Not required*</td>
</tr>
<tr>
<td></td>
<td>Source identity unknown. BBV status unknown.</td>
<td>Blood for storage: required HIV: PEP not required**. HBV: See Section 6.0. Offer injured party testing*</td>
</tr>
<tr>
<td></td>
<td>Source identity known. BBV status unknown.</td>
<td>Blood for storage: required HIV: PEP usually not required, but may be started pending source testing. HBV: See Section 6.0. Offer injured party testing* <strong>Seek source blood testing</strong> *</td>
</tr>
<tr>
<td></td>
<td>Source known HIV, HBV and/or HCV positive</td>
<td>Blood for storage: required HIV: PEP recommended if source HIV positive. HBV: See Section 6.0 Recommend injured party testing*</td>
</tr>
</tbody>
</table>

*Staff at RIDU are always prepared to discuss unusual cases and to offer follow-up counselling.
**The seroprevalence of HIV in injecting drug users in Scotland is estimated to be <0.5%. Transmission by needlestick is unusual, even if the source is HIV positive. Therefore people sustaining a needlestick injury from a discarded needle or a source of unknown status should not be offered PEP.**

4.2 **Record keeping**

In every case fill in a Risk Assessment Record Form (Appendix 3). Copies are available with the 3 day starter packs (see section 5.3 for starter pack locations) and clinical managers should ensure that forms are available to health care workers in all clinical situations in NHS Lothian.

For healthcare workers, the form should be emailed to Occupational Health Department [occupational.health@nhslothian.scot.nhs.uk](mailto:occupational.health@nhslothian.scot.nhs.uk)

For third sector workers and members of the public, the risk assessment form should be filed with the clinical case notes.

Where injured party testing and follow up is required there are 3 options:

Option 1: Contact the on-call RIDU middle grade doctor via WGH switchboard. This doctor is available 09:00 to 21:00 every day.

Outwith these hours, obtain a contact number for the injured person and contact the on-call ID middle grade doctor the next morning. Email the risk assessment form to wgh.infectiousdiseases@nhslothian.scot.nhs.uk

Option 2: Contact the on-call GUM middle grade doctor at Chalmers Sexual Health Centre via the help line 0131 536 1070 selecting option 3 to speak to a professional member of staff, or telephone the doctors’ station on extension 61585. A GUM doctor is available in the clinic 08:30 to 16.30, Monday to Friday. Email the risk assessment record form to Chalmers.ClinicalAdv@nhslothian.scot.nhs.uk marked as URGENT. The injured person should be asked to present to the main reception of Chalmers Sexual Health Centre at 9am on the next working day or as agreed with the on-call doctor.

Option 3: For paediatrics contact Dr Laura Jones at RHSC. The HCW / member of the public should be informed where to attend for follow up, and asked to attend as agreed with the on-call doctor at the receiving unit.

4.3 **General guidance on the BBV testing service**

RIE Laboratory Medicine (Virology) offers a 7-day routine laboratory service within normal working hours. Furthermore, the Department offers an urgent BBV testing service around the clock. The service is supported by a Consultant Virologist at all times. However, urgent test requests should only be made when required by the initial risk assessment where it indicates a real risk of BBV infection in the source (see appendix 1). In other situations, the source patient tests may be performed the next morning in a non-urgent manner.

Verbal requests for urgent tests should be made directly to Virology (through RIE switchboard; 0131 536 1000) – either to the Duty Virologist (within normal working hours Monday-Friday) or the Biomedical Scientist on-call (out-with normal working hours).
Urgent tests are turned around within two hours from arrival at RIE provided details have been conveyed to Virology. However, data obtained from source testing may not always be available rapidly enough to influence a decision on starting HIV PEP, although it will be helpful in informing a decision to stop PEP promptly and/or reassure the injured person.

A request form should accompany the source patient’s 4.5 ml serum gel (brown cap) blood sample tube, include all of the patient’s and requestor’s details (including contact telephone and bleep numbers) and be marked as ‘Urgent: Exposure incident - source patient’ to aid rapid processing. Such samples may also be sent within the hospital system via TRAK provided all details are included. Either way, urgent requests must also be made verbally to Virology (as outlined above).

The test panel offered for source patient testing consists of the following tests: HIV antigen / antibody, HBV surface antigen, HBV core antibody, HCV antigen and HCV antibody. HBV surface antibody levels may be assessed at the same time if required.

4.4 Blood for storage (for the injured person)

In every case of significant exposure, take a baseline 4.5 ml anti-coagulated EDTA (red cap) blood sample from the injured person at the time of the incident and send it to RIE Laboratory Medicine (Virology) for testing or storage (samples will be kept for 2 years). Patients receiving HIV PEP (see below) will also require FBC, U&Es, phosphate and LFTs. In general, further EDTA blood samples should be obtained at 6 weeks (for significant exposure to HCV), 12 weeks and 24 weeks (for further details, please refer to sections 5.5, 5.6, 6.1 and 7.0 below).

4.5 BBV testing of the source person where their identity is known

It is the responsibility of the injured worker’s line manager to ensure that every effort is made to establish the sero-status of the source. A senior member of the clinical team responsible for the source patient should make arrangements to approach a source patient whose BBV sero-status is not known and ask for their informed agreement to testing. The injured HCW should not undertake this approach.

However, if the HCW sustaining the injury is single-handed, there may be no option but for them to approach the source patient themselves. In this case, if the source patient agrees to BBV testing, they could be referred to their General Practitioner or A&E for testing. The single handed practitioner should contact the GP / A&E to explain the situation.

A universal approach to asking source patients to agree to testing avoids the need to make difficult judgements, simplifies and normalises the process and avoids any appearance of discrimination against people perceived as belonging to groups associated with higher than average BBV prevalence. However, urgent out-of-hours determination of source sero-status may not be required if risk is low and, in this case, blood specimens can be taken and stored overnight for in-hours testing during the next day.

Similar to all other tests, pre-test discussion and informed consent is required, and such pre-test discussion can be provided by any competent HCW. Specialist pre-test counselling may sometimes be considered appropriate if the circumstances of the source patient are unusual or complex.
As part of pre-test discussion, or prior to asking about a history of possible exposure to BBV, the source patient should first be informed about the incident and the reason for the enquiry and request for a test. The difficulties of the exposed HCW’s situation should be discussed – either in terms of the worker not missing the opportunity to benefit from HIV PEP, or conversely, not being subjected unnecessarily to its potentially unpleasant short term and unknown long term side effects. Consent to HIV testing is rarely withheld in these circumstances, when the approach is made in a sensitive manner. Test results should be conveyed to the source patient.

If consent for testing is withheld or cannot be obtained from the source patient, for example because the source patient is unconscious, then testing cannot be carried out in light of the Expert Advisory Group on Aids (EAGA) guidelines, and a risk assessment has to be made without a test being performed.

Any source patient who is newly diagnosed with BBV infection as a result of this process will need immediate access to specialist post-test counselling and assurances about confidentiality. Source patients should also be informed promptly of negative results, with any post-test counselling appropriate to individual circumstances.

4.6 What to do if the identify of the source patient is NOT known

In general if the source patient cannot be identified, prophylaxis against HIV will not be recommended. But, in some cases there may be reason to give PEP where the exact identity of the source cannot be established. The on-call RIDU / GUM consultants are available to discuss difficult cases.

4.7 BBV testing of the injured person

Testing of the injured person for BBV should be considered in all cases. There is a professional obligation on certain healthcare workers to submit to testing when they have been at significant risk. Clearly, in high risk scenarios, there would be very strong advice that the individual should be tested. In a very low risk event, however, even if there was a significant injury, testing should be decided on a case by case basis and in consultation with the injured party, Occupational Health Service (in the case of healthcare worker), RIDU and the injured person’s attending physician. See Tables 3 and 4 for further details.

In the event of a subsequent BBV-positive test result, where an individual did not wish to be tested for a BBV at the time of injury, a stored baseline sample may allow the injured person to demonstrate seronegativity at the time of injury.

4.8 Checking vaccination status of injured person

Review the injured person’s HBV vaccination status, whatever the source status. Children will also be required to have their tetanus vaccination status checked.

4.9 Special circumstances

It is recognised that even in events where there is no significant injury or the risk is very low, patient concern and anxiety may determine the need for referral to CSHC/RIDU for counselling and follow up.
Individuals presenting after sexual exposure or assault should be assessed according to the Lothian Guidelines for Post Exposure Prophylaxis for Sexual Exposure to BBVs (PEPSE), available on the intranet.

5. Post exposure prophylaxis against HIV
   5.1 Timing of initiation of PEP against HIV
       PEP against HIV should be started as early as possible, ideally within 1 hour of a significant exposure. If it is known (or seems very likely) that the source is HIV positive, it may be appropriate to start PEP immediately pending the outcome of a more thorough risk assessment. Patients presenting more than 48 hours after significant exposure should be discussed with the on-call RIDU / GUM consultants. Where laboratory staff working with drug-resistant virus are exposed, an immediate expert opinion must be obtained from RIDU or GUM.

   5.2 Supplying PEP against HIV
       The evaluation of the injured person should include a medical history. Details of any existing medication should be established (including oral contraception, herbal remedies, medication purchased over the counter at pharmacies, prescribed drugs of addiction and recreational drugs). Females should be asked specifically about the possibility of pregnancy. In cases of doubt, the on-call ID or GUM consultant should be contacted. The current recommended regime for PEP in NHS Lothian is detailed in Appendix 4.

       Sexually active females who may be pregnant and are offered PEP should be discussed with the on-call ID or GUM consultant. Pregnancy is not a contraindication to PEP, but may affect the decision process. Urgent pregnancy testing should be arranged for any woman who cannot rule out the possibility of pregnancy to allow the injured person to reach an informed decision.

   5.3 Starter packs
       Starter packs containing a three day supply of medication are available at the following locations:
       RIE A&E department
       St John’s Hospital A&E department
       Royal Sick Children’s Hospital emergency cupboard (Ward 6)
       Roodlands Hospital back up cupboard (Ward 1)
       Chalmers Sexual Health Centre
       Regional Infectious Diseases Unit (WGH)

       Starter packs also contain:
       A patient information leaflet (Appendix 5)
       A spare copy of the risk assessment sheet (Appendix 3)
       A copy of NHS Lothian Testing for Blood Borne Viruses Leaflet (Appendix 6)

       Clinical directors and/or professional leads in charge of these departments must ensure that staff are familiar with the contents of this SOP, are aware of the location of starter packs, and are adequately trained in the implementation of this SOP.

       A full PEP course is 4 weeks (28 days).
5.4 Patient information

The doctor providing PEP should make sure the injured person has a copy of the NHS Lothian Post Exposure Prophylaxis Patient Information Leaflet (Appendix 5). Copies of this are available in the starter packs and at CSHC / RIDU. Patients should be informed that antiviral drugs are not licensed for prophylactic use, but that there is extensive experience of their use in this way. There are only prescribed when the potential benefits outweigh any potential risks.

5.5 Follow up for HIV in patients starting PEP

Patients starting PEP should attend for medical and counselling follow-up with a consultant in RIDU or GUM within 48 hours so that a decision can be made on continuing therapy, and so that any additional concerns can be addressed.

Follow-up for HIV is described in detail in Appendix 5, ‘Post Exposure Prophylaxis: patient information leaflet’. HIV follow up testing should be done at 4 weeks and 12 weeks after completion of PEP (i.e. 8 and 16 weeks after exposure).

For children, follow-up should be with Dr. Laura Jones at RHSC.

5.6 Follow-up for HIV in patients not starting PEP

Patients not taking PEP against HIV who are offered and agree to follow up testing should be tested at least 12 weeks after the exposure incident.

6. PEP against Hepatitis B

For HCWs and third sector workers providing BBV dry blood spot testing, the OHS nurse will arrange follow-up, and assess need for HBV vaccination. Most HCWs have been vaccinated against HBV and many will know whether they have responded to a HBV vaccine course. Irrespective of type of exposure: (1) all fully vaccinated HCWs (responders and non-responders alike) should be considered for HBV vaccine booster at time of exposure and (2) all non or partially vaccinated HCWs should embark on/complete their HBV vaccine course.

For details of HBV vaccination and Hepatitis B Immunoglobulin (HBIG) administration see Table 2.

Members of the public may be referred to their GP for completion of the vaccination course.

Those with significant exposure (as stated in paragraph 4.1 table 1) should be referred to RIDU/CSHS/Paediatrics for follow-up (see para 4.2).
Table 2: Use of HBV vaccine and HBIG

<table>
<thead>
<tr>
<th>HBV status of exposed person</th>
<th>Significant exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source patient is known to be actively infected with HBV</td>
</tr>
<tr>
<td><strong>Less than or equal to 1 dose of HBV vaccine pre-exposure</strong></td>
<td>HBIG* x 1 Initiate accelerated** course of HBV vaccination</td>
</tr>
<tr>
<td><strong>Greater than or equal to 2 doses of HBV vaccine pre-exposure (anti-HBs level unknown)</strong></td>
<td>Give one dose of HBV vaccine now followed by a second dose one month later; check anti-HBS level</td>
</tr>
<tr>
<td><strong>Known past HBV infection</strong></td>
<td>No HBV prophylaxis</td>
</tr>
<tr>
<td><strong>Known responder to HBV vaccination (anti-HBs &gt;10mIU/ml)</strong></td>
<td>Consider booster dose of HBV vaccine</td>
</tr>
<tr>
<td><strong>Known non-responder to HBV vaccine (anti-HBs &lt;10mIU/ml)</strong></td>
<td>HBIG x 1 Consider booster dose of HBV vaccine A second dose of HBIG should be given at one month</td>
</tr>
</tbody>
</table>

*HBIG should be given as soon as possible after significant exposure and ideally within 48hrs although it should still be considered up to a week post-exposure. Hepatitis B immunoglobulin is held in the emergency cupboard fridge at the RIE. Dose: Adult and Child over 10 yrs, 500 international units by IM injection – see current BNF for paediatric doses / contact Dr. Laura Jones at RHSC.

**HBV accelerated vaccination: Doses at 0, 1 and 2 months with a booster dose at 12 months. See current BNF for adult and paediatric doses.

HBIG and HBV vaccinations should be administered at different sites if being given at the same time.

6.1 Follow up for Hepatitis B

Where people have received a course of vaccine following their significant exposure, follow-up for HBV is usually required for at least 6 months. However, individuals who are pre-exposure HBV vaccine responders with anti-HBs titres >100mUL/ml 2-3 months after a full vaccine course do not need follow up testing for HBV.
Table 3: Tests for HBV following significant exposure.

<table>
<thead>
<tr>
<th>Blood test</th>
<th>Three months post exposure</th>
<th>Six months post exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B surface antigen</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hepatitis B core antibody</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

7. Follow up relating to Hepatitis C

There is no vaccination or post-exposure prophylaxis for HCV but HCWs who develop symptoms of acute HCV should receive early treatment. Follow-up for HCV is required for at least 6 months.

Table 4: Tests for HCV following significant exposure*.

<table>
<thead>
<tr>
<th>Blood test</th>
<th>6 weeks post exposure</th>
<th>12 weeks post exposure</th>
<th>24 weeks post exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCV Antibody</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>HCV RNA (PCR)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

* Positive results will prompt repeat testing and referral to RIDU.

8. General notes on follow up

8.1 Health care workers (HCW)

Following any occupational exposure to BBV, whether or not PEP was prescribed, HCWs should attend for OHS follow-up as requested by OHS staff and be prepared to report symptoms/signs of concern at any time. HCWs who carry out exposure prone procedures (EPP) do not need to modify their practice.

8.2 Third sector workers and members of the public

Follow up for third sector workers and members of the public who have been commenced on PEP is available at RIDU (WGH) or Chalmers Sexual Health Centre (Chalmers Street) by following the options outlined in para 4.2.
8.3 Expert advice

ID and GUM consultants are available to assist with risk assessment in complicated cases. Out-of-hours cover will be provided by the ID consultants but there is no need to contact them in the middle of the night if a decision to supply a starter pack has been made. It will usually be appropriate to obtain a contact number for the injured person and contact the on-call ID middle grade doctor the next morning.

Counselling staff at RIDU are happy to see HCW’s and members of the public who have been affected by BBV issues, even if the level of risk associated with this incident is negligible. They can be contacted on 0131 537 2864 or extension 32864.

In all cases no child should be started on PEP without prior discussion with Dr Laura Jones. Children whether receiving HIV PEP, HBV vaccinations or follow up testing should be referred to Dr Laura Jones. The referral letter should be sent to 10 Chalmers Crescent, Edinburgh EH9 1TS. The Paediatric Infectious Diseases Consultant on call in Glasgow (Tel 0141 201 0000) will provide cover for Laura Jones if she is unavailable.

8.4 BBV testing information leaflet

While waiting for test results and follow-up, it may be appropriate to give patients some basic written information. The information leaflet "Testing for Blood Borne Viruses" (Appendix 6) provides brief information on BBVs and issues to consider prior to being tested. Copies are available from the NHS Lothian Health Promotion Library at Astley Ainslie Hospital (Tel 0131 537 9337) and in starter packs.

9. References


Appendix 1

Annex to NHS Lothian Working with Blood Borne Viruses Policy

SOP APPENDIX 1. Background information that may inform risk assessment

HIV

The risk of acquiring HIV infection following occupational exposure to HIV infected blood is low. Epidemiological studies have indicated that the average risk for HIV transmission after percutaneous exposure to HIV infected blood in health care settings is about 1 per 300 injuries (~0.3%). After a mucocutaneous exposure the average risk is estimated at less than 1 in 1,000 (<0.1%). Case control studies have identified factors associated with increased risk of occupationally acquired HIV infection including 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, terminal HIV-related illness in the source patient (a surrogate marker for high viral load).

Hepatitis B and C

Hepatitis B and C are more easily transmitted. Figures quoted for transmission are less than 1 in 50 for HCV, and 1 in 3 (~30%) for HBV from HepB eAg positive source.

Estimates of Blood-Borne Virus prevalence in Lothian (September 2013)

<table>
<thead>
<tr>
<th></th>
<th>HIV</th>
<th>HCV</th>
<th>HBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>General population</td>
<td>0.17% Lothian</td>
<td>0.7% Lothian</td>
<td>0.2% (chronic)</td>
</tr>
<tr>
<td></td>
<td>as at Dec 2012</td>
<td>2012</td>
<td>Scotland over 15s;</td>
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<td></td>
<td>0.26% in 15-59</td>
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<td></td>
<td>year olds.</td>
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<td></td>
<td>These are</td>
<td>Audit by</td>
<td>Data not yet</td>
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<tr>
<td></td>
<td>are diagnosed</td>
<td>Lothian</td>
<td>available from</td>
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<tr>
<td></td>
<td>prevalences;</td>
<td>GUM in 2009</td>
<td>NaSH</td>
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<tr>
<td></td>
<td>estimates</td>
<td>showed HCV</td>
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<td></td>
<td>taking into</td>
<td>prevalence no</td>
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<td></td>
<td>account</td>
<td>higher in MSM</td>
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<td></td>
<td>undiagnosed</td>
<td>than in general</td>
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<td>will be higher</td>
<td>population,</td>
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<td>unless HIV</td>
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<tr>
<td></td>
<td></td>
<td>positive</td>
<td></td>
</tr>
<tr>
<td>Men who have sex</td>
<td>5.5% MRC gay</td>
<td>33% in Lothian (n=385) 2010 NESI</td>
<td>0.74% (HBsAg) England, Wales &amp; NI, 2011 Shooting Up report.</td>
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<tr>
<td>with men</td>
<td>bar survey</td>
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<tr>
<td></td>
<td>Edinburgh,</td>
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<tr>
<td></td>
<td>2012 (n=530)</td>
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<td></td>
<td>3.1% England</td>
<td>Audit by Lothian</td>
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<tr>
<td></td>
<td>and Wales</td>
<td>showed HCV</td>
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<td></td>
<td>(not London),</td>
<td>prevalence no</td>
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<td></td>
<td>2011</td>
<td>higher in MSM</td>
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<td>positive</td>
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<tr>
<td>People who inject</td>
<td>0.4% in Lothian</td>
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<tr>
<td>or have ever</td>
<td>(unpub NESTI</td>
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<td>injected drugs</td>
<td>2011/12) c.f.1.</td>
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<td></td>
<td>2% England,</td>
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<td></td>
<td>Wales &amp; NI,</td>
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<td>2011 (HIV in</td>
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<td>UK report,</td>
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<td>Public Health</td>
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<td></td>
<td>England)</td>
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<td></td>
<td>(0.9% outwith</td>
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<td></td>
<td>London)</td>
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<td></td>
<td><strong>HIV</strong></td>
<td><strong>HCV</strong></td>
<td><strong>HBV</strong></td>
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<tr>
<td>People who inject</td>
<td>England &amp; Wales 1.5% (all) 0.8% (after excluding other risk behaviours) n=395. Ref. Vivian Hope, BMJ 2013</td>
<td>England &amp; Wales 5.5% (all) 4.7% (after excluding other risk behaviours) n=395. Ref. Vivian Hope, BMJ, 2013</td>
<td>England &amp; Wales 8.8% (chronic, all) 8.0% (after excluding other risk behaviours) n=395, Ref Vivian Hope BMJ, 2013</td>
</tr>
<tr>
<td>performance and image</td>
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<tr>
<td>enhancing drugs</td>
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<tr>
<td>Black Africans</td>
<td>2.6% in men 5.1% in women England &amp; Wales, 2012</td>
<td>No data</td>
<td>No data</td>
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<tr>
<td>South Asian</td>
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<td>0.59% (chronic) in South Asian women in Scotland aged 15-44 (Schnier et al, HPS, 2013)</td>
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<tr>
<td>East Asian</td>
<td></td>
<td>10.3 – 11.6% (chronic) in East Asian in Scotland aged 15-44; (Schnier et al, HPS, 2013)</td>
<td></td>
</tr>
<tr>
<td>Prisoners HMP Edinburgh</td>
<td>No data</td>
<td>13% (all prisoners) 34% (ever injector prisoners) 2% (non-injector prisoners) Taylor et al, 2011</td>
<td>No data</td>
</tr>
<tr>
<td>Prisoners HMP Addiewell</td>
<td>No data</td>
<td>16% (all prisoners) 46% (ever injector prisoners) 3% (non-injector prisoners) Taylor et al, 2011</td>
<td>No data</td>
</tr>
</tbody>
</table>
Appendix 2
Annex to NHS Lothian Working with Blood Borne Viruses Policy
BBV Risk Assessment flowchart

Possible BBV exposure

Wound care
Wash injury thoroughly with warm running water and soap
Encourage bleeding
Cover with a waterproof plaster
Exposed mucous membranes, including conjunctivae, should be irrigated copiously after removal of contact lenses

NHS Health Care Worker?
Yes
Inform Occupational health Supervisor/manager
No

Nature of injury:
Percutaneous injury, exposure of broken skin or mucous membranes?
Yes
No
No significant exposure.

One of these fluids?
Blood, amniotic fluid, CSF, milk, pericardial, peritoneal, synovial and pleural fluid, saliva in association with dentistry, unfixed tissues, other bloodstained fluid, exudative or other tissue fluid from burns or skin lesions, genital tract secretions

Serostatus of source known?
Yes
Identity of source known?

Known HIV/HBV/HCV positive
Blood for storage: required
HIV: PEP recommended if source HIV positive.
HBV: See Section 6.0
Recommend injured party testing*

Known HIV/HBV/HCV negative within last month

Is there reason to repeat test?
Yes
Blood for storage: required
HIV: PEP not required.
HBV: See Section 6.0
Follow-up: Not required

No

Blood for storage: required
HIV: PEP usually not required, unless source high risk.
HBV: See Section 6.0
Offer injured party testing*
Seek source blood testing*

No

Staff at RIDU are always prepared to discuss unusual cases and to offer follow-up counselling.

**The seroprevalence of HIV in injecting drug users in Scotland is estimated to be <0.5%. Transmission by needlestick is unusual, even if the source is HIV positive. Therefore people sustaining a needlestick injury from a discarded needle or a source of unknown status should not be offered PEP.
### SOP APPENDIX 3: Blood-borne virus exposure: Risk assessment record form

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Daytime telephone</td>
</tr>
<tr>
<td></td>
<td>Evening telephone</td>
</tr>
<tr>
<td></td>
<td>Mobile telephone</td>
</tr>
<tr>
<td>Hospital Number</td>
<td>GP</td>
</tr>
<tr>
<td>Date of Incident</td>
<td>GP address</td>
</tr>
<tr>
<td>Time of Incident</td>
<td></td>
</tr>
<tr>
<td>Nature of Incident</td>
<td></td>
</tr>
</tbody>
</table>

#### Is the injured person a health care worker?  Yes / No

#### Result of risk assessment:
See "NHS Lothian Standard Operating Procedure for incidents involving potential exposure to blood borne viruses" main document and flowchart (Appendix 2)

- *Serum stored (everyone)  Yes / No
- Serum tested  Yes / No

#### Required | Given | Comment
---|---|---
HBV immunoglobulin | Yes / No | Yes / No
HBV vaccination | Yes / No | Yes / No
HIV PEP | Yes / No | Yes / No

### If HIV PEP is required*
Confirm that you have discussed the following:

<table>
<thead>
<tr>
<th></th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative risk of HIV infection</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Side-effects of drugs (see patient info leaflet)</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Possibility of pregnancy</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Pregnancy Test</td>
<td>Pos / Neg / Not done</td>
</tr>
</tbody>
</table>

...and done the following:

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Patient information leaflet given</td>
<td>Yes / No</td>
</tr>
<tr>
<td>FBC, LFTs</td>
<td>Yes / No</td>
</tr>
<tr>
<td>PEP 3 day starter pack supplied</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

#### Follow-up
If yes, what arrangements have been made so far?
See "NHS Lothian Standard Operating Procedure for incidents involving potential exposure to blood borne viruses" main document

<table>
<thead>
<tr>
<th>Signed</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Name</td>
<td>Designation</td>
</tr>
</tbody>
</table>

For all significant exposure cases, email completed form to either RIDU email: wgh.infectiousdiseases@nhslothian.scot.nhs.uk or Chalmers Sexual Health Centre email: Chalmers.ClinicalAdv@nhslothian.scot.nhs.uk – marked as URGENT or send to Dr Laura Jones (Paediatrics). For advice tel RIDU 0131 537 2878, Chalmers tel 0131 5361070 Also send to Occupational Health: occupational.health@nhslothian.scot.nhs.uk for all injured health care workers.

* Patients receiving HIV PEP will also require FBC, U&Es, phosphate and LFTs
SOP APPENDIX 4: Current recommended HIV Post-Exposure Prophylaxis

The following regimen is currently recommended for post-exposure prophylaxis in adults in Lothian (from April 2014):

Truvada tablets: (tenofovir disoproxil 245mg and emtricitabine 200mg):
ONE tablet ONCE a day at the same time each day (with food)

And

Raltegravir
ONE tablet TWICE a day (every twelve hours) with food.

Both medications are continued for 4 weeks (28 days) in total.

For children, please consult Dr Laura Jones for dosages (available via RHSC switchboard).
Appendix 5  Annex to the NHS Lothian Working with Blood Borne Viruses Policy

SOP APPENDIX 5: Post-Exposure Prophylaxis [PEP]: Patient information leaflet

Information about drugs to reduce the risk of acquiring HIV

About this factsheet
This leaflet gives information about the risk of acquiring HIV from a needlestick or similar injury. If you have just had a needlestick injury, it is likely that by now you will have been assessed by a doctor or an Occupational Health nurse, and have been offered drugs to reduce the risk of acquiring HIV. That person should have given you specific information about your situation. If there are things you need to know that are not covered in this leaflet, you should ask the person who has assessed you.

What is the risk of acquiring HIV from a needlestick injury?
The risk of acquiring HIV from a needlestick injury from someone who is known to have HIV is very low - about 3 in 1,000. This means that for every 1,000 people who sustain a needlestick injury, only 3 will acquire HIV. This is the average risk. The risk is higher if the patient has acquired HIV very recently (i.e. seroconverting) or has had HIV for a long time and is not on treatment. Other factors, such as the amount of blood involved and the depth of the needlestick injury also affect the risk. Splashing of blood onto mucous membranes (e.g. the eye) or onto broken skin can transmit infection but the risk is much lower than with a needlestick. Splashing of blood onto intact skin does not transmit HIV infection.

The risk from other injuries such as bites is difficult to assess - this really needs to be discussed with your doctor on an individual basis, but the risk is likely to be very low.

HIV and AIDS
HIV is the virus that causes AIDS. HIV damages the body’s immune (defence) system and leaves the patient open to infection - this is the disease called AIDS. Nearly everyone who is infected with HIV will develop AIDS at some point if not started on antiretroviral therapy.

An HIV infected person can transmit the infection to others by sexual intercourse, through blood transmission, during a pregnancy or through breast feeding.

HIV infection can usually be detected in the blood within four weeks after it is acquired but it may take up to 12 weeks for infection to show in the blood after a course of Post-Exposure Prophylaxis medication [PEP]. The tests we use to tell if you have been infected are described below.

Will taking PEP medication prevent you from acquiring HIV?
We know that taking one antiretroviral drug reduces the risk of transmission by about 80% - that is, from 3 in 1,000 on average to about 0.6 in 1,000 (6 in 10,000). We strongly believe that taking three drugs together will reduce the risk even further.

Taking PEP does not completely abolish the risk of acquiring HIV; cases of HIV transmission have occurred in some people in spite of taking these drugs.
It is important to practise safe sex for 12 weeks after the course of PEP is complete, or for 12 weeks after the incident, if PEP was not started i.e. until you have had a second (confirmatory) negative HIV test.

What do I need to take and for how long?
We recommend taking Truvada, one tablet once a day, and Raltegravir one tablet twice a day for four weeks. Truvada contains two active drugs so this is triple drug therapy.
Neither of these drugs interacts significantly with other medications, but you should let the doctor know if you are taking anything else, or have any other health problems.

**What tests will be done?**

HIV blood tests will be done at 4 & 12 weeks after the injury or 4 & 12 weeks after you finish the course of treatment. It is not possible to declare you “all clear” until 12 weeks after you finish the course of treatment. If you decide to take the tablets, the doctor will also take other blood tests at regular intervals to make sure that the drugs are not upsetting you.

During this period we recommend that you practise safe sex, and you should not donate blood. Health care workers who carry out exposure prone procedures do not need to modify their practice.

**What should you do if you are/may be pregnant?**

These drugs have been used during pregnancy in patients with HIV in order to reduce the risk of the baby acquiring HIV. If you are or think you may be pregnant, you must discuss this with the doctor or Occupational Health nurse who has assessed you.

They will probably want to discuss your treatment with an HIV specialist at either RIDU (Western General Hospital) or at Chalmers Sexual Health Centre. Until you have been given the all-clear by your HIV specialist, you need to practise safe sex, and so you should not become pregnant during this time.

**What to do if you need more information**

Until you have had your first follow-up appointment you should contact the Occupational Health Service or doctor who assessed you for advice or information. Once you have been seen at RIDU (Western General Hospital) or at Chalmers Sexual Health Centre the doctor there will give you information about contact numbers and other services.

April 1st 2014
Appendix to the NHS Lothian Working with Blood Borne Viruses Policy

## Are there reasons not to have a test?

In most cases it is much better to know if you have a BBV infection so you can be monitored and have any necessary treatment.

If you are depressed or really feel you could not cope with a positive result it may be better to get help with this before you take the test – but most people cope with the diagnosis even if they thought they could not.

If you have a positive test you may find it harder to get life assurance, for example with a mortgage, but it is not impossible. A negative test should not affect your ability to get insurance.

## Going for BBV tests

You can have confidential testing for BBV with your GP at the Sexual Health centre or at a BBV testing clinic. It can be stressful to go alone – think about taking a friend you trust for support, especially when you are going to get the result.

Think about who you would tell if you got a positive result – and who you would not tell. If you tell people you are going for a test they will probably ask about the result.

All services are confidential and will not disclose your result without your consent. In most cases you will be given the result in person – positive or negative. It is important to return to your GP or hospital to discuss your results.

## Contact details

### Appointments

Chalmers Sexual Health Centre
Chalmers Sexual Health Centre
2a Chalmers Street, Edinburgh
0131 536 1070

For information on clinics held throughout Edinburgh and the Lothians access:
www.lothianssexualhealth.scot.nhs.uk

### HIV Counselling Clinic

Western General Hospital
Edinburgh
0131 537 2864

### Blood Borne Virus Testing Clinics

Testing at various sites across Lothian. For details and appointments call the Community Blood Borne Virus Nurse Team on 0131 537 2843/50

Advice and Information
C Plus (Hepatitis C Care and Support)
22 Laurie Street, Edinburgh EH16 7AD
0131 478 7929

Vasswary Care Community Projects
1-3 Mansfield Place, Edinburgh EH13 6NB
Tel: 0131 558 1425

NHS 24 (Health advice and information service)
Tel: 08454 24 24 24 or visit the website at www.nhs24.com

To order additional copies of this leaflet, contact the Health Promotion Resources Centre on 0131 537 5525.
What are Blood Borne Viruses (BBV)?
There are three main blood borne viruses – HIV, Hepatitis B and Hepatitis C. They are passed between people through:

- sharing of any injecting equipment including spoons, filters and water
- unprotected sex – heterosexual or homosexual
- unsterile medical treatment or unsterile body piercing/tattoo
- blood to blood contact from an infected individual e.g. in a fight.

They can also be passed from an infected mother to her baby. Treatment can greatly reduce the risk of HIV and Hepatitis B in the baby. The risk of Hepatitis C is low.

HIV and Hepatitis B are more common in men who have sex with men and in people who have lived abroad, especially in Southern Africa, the Far East and Eastern Europe. Hepatitis C is common in drug users who have ever injected. Hepatitis C is less likely to be transmitted through sex.

How do the viruses affect people?
After HIV infection someone can have a flu-like illness and then remain well for many years. The virus gradually destroys the body’s defences – the immune system – making it difficult to fight off infections. Severe damage to immunity is called AIDS (Acquired Immune Deficiency Syndrome).

Hepatitis B infection can cause a mild or severe inflammation of the liver (hepatitis) with jaundice. Sometimes this can be fatal. About 20% of people infected will have a long term infection. This gradually damages the liver causing scarring (cirrhosis) and sometimes liver cancer.

Hepatitis C infection is usually silent for many years. It also causes cirrhosis of the liver and the risk of cancer. People with the infection may feel very tired and have poor concentration. They may have a flu-like illness. If cirrhosis of the liver develops, people can be very ill and die.

What are the BBV tests?
Each virus has its own blood tests that tell us different things about the infections.

HIV
The first test is an antibody test detecting the body’s immune reaction to the virus. If this test is positive it means that you are infected with the virus. Other tests called the CD4 count and the viral load will be then taken to see if the immune system has been damaged yet and how much virus is in the blood.

Hepatitis C
The first test is also an antibody test. If this is positive another test is carried out to see if the virus is still present in the body. Up to 80% of infected people can become long term carriers of this virus with risk of liver damage.

Hepatitis B
A blood test works out if there is an ongoing infection. This can also show if the person has fought off the infection and is now protected against future Hepatitis B infection.

Some of these viruses take 3-6 months to show up in the blood – if you have been at risk during this time you may be advised to get a repeat test even if your first result is negative. If you put yourself at risk again you should have a further test.

Why have a test?
Untreated all three viruses can cause serious illness and death after a long infection. In the early stages many people feel well and do not realise that they are infected. There is now treatment for Hepatitis B and C that can often cure the infection, and treatment for HIV that can control it. The treatments can be difficult to take and can have side-effects. For HIV, treatment will be lifelong. Treatments are improving all the time.

Knowing about an infection allows you to protect your health – for example by stopping drinking alcohol if you have Hepatitis B or C. You can also protect others from getting the infection from you, by avoiding unsafe sex and not sharing injecting equipment. Women can also make choices about pregnancy and protecting their unborn child from HIV and Hepatitis B.