KEY CRITICAL POINTS

- Immediately following exposure, care of the exposed person should be undertaken.
- The exposed person should inform an appropriate person as soon as possible after exposure, so assessment and follow-up can be undertaken.
- An assessment of risk should be undertaken as soon as possible after every incident of occupational exposure.
- Post-exposure prophylaxis, where indicated, should be prescribed as soon as possible after exposure.

This guideline provides the minimum recommended procedures for the immediate assessment, management and follow-up of individuals who have been exposed (or suspect they have been exposed) to blood borne viruses (BBV), and recommendations for initiation of post-exposure prophylaxis (PEP) in occupational settings.

Occupational exposures to blood and body fluids in healthcare settings have the potential to transmit hepatitis B virus (HBV), hepatitis C virus (HCV), or human immunodeficiency virus (HIV). An exposure that might place a healthcare worker at risk of HBV, HCV or HIV infection is defined as:

- a percutaneous injury (for example a needlestick or cut with a sharp object); or
- contact of mucous membranes or non-intact skin with blood, tissue or other bodily fluids that are potentially infectious.

For non-occupational exposures these guideline should be read in conjunction with:


General Requirements

Facilities should ensure:

- local systems are in place for reporting and managing exposures of healthcare workers (HCW) to blood and body fluids.
- processes are in place to ensure that healthcare workers whose work places them at risk of direct contact with blood or body substances provide evidence of vaccination or proof that they are not susceptible to hepatitis B.
- all staff receive education regarding the appropriate use of standard precautions at induction and again annually.
- an emergency system is in place for the management of occupational and non-occupational exposures to BBVs. The system should identify a local contact and a specialist in infectious diseases as a resource person for that facility. (Attachment 1 includes contact details for the expert information network). This system and contact numbers should be prominently displayed.
Immediate Care of the Exposed Person

Immediately following exposure to blood or body fluids, it is recommended that the exposed person undertakes the following steps as soon as possible:

- wash wounds and skin sites that have been in contact with blood or body fluids with soap and water³
  - apply a sterile dressing as necessary, and apply pressure through the dressing if bleeding is still occurring.
- do not squeeze or rub the injury site²
- if blood gets on the skin, irrespective of whether there are cuts or abrasions, wash well with soap and water
- irrigate mucous membranes and eyes (remove contact lenses) with water or normal saline¹⁰
  - if eyes are contaminated, rinse while they are open, gently but thoroughly (for at least 30 seconds) with water or normal saline⁴
  - if blood or body fluids get in the mouth, spit them out and then rinse the mouth with water several times⁴
- if clothing is contaminated, remove clothing and shower if necessary.⁴

When water is not available, use of non-water cleanser or antiseptic should replace the use of soap and water for washing cuts or punctures of the skin or intact skin⁴. The application of strong solutions (for example, bleach or iodine) to wounds or skin sites is not recommended.⁵

For human bites, the clinical evaluation should include the possibility that both the person bitten and the person who inflicted the bite were exposed to BBVs.²

The exposed person should inform an appropriate person (e.g. supervisor or manager) as soon as possible after the exposure so assessment and follow-up can be undertaken in a timely manner. After reporting the incident, the worker should be released from duty so that an immediate risk assessment can be performed.

Risk Assessment

The designated person should assess and document the risk as soon as possible after every incident of occupational exposure, referring to the expert information network as required (see attachment 1). This should include:

- assessment of the significance of the exposure
- the status of the source individual
- the status of the exposed person with respect to BBVs, including vaccination.

In an occupational setting a risk assessment should be conducted on the basis of the type of exposure and the amount and type of infectious material involved. A risk assessment should be undertaken based on the degree of exposure, guided by the information in Table 1 and Table 2.
<table>
<thead>
<tr>
<th>Exposure Classification</th>
<th>Risk Factors</th>
<th>Follow up</th>
</tr>
</thead>
</table>
| Massive Exposure        | • transfusion of blood  
                          • injection of large volume of blood/body fluid (>1mL)  
                          • parenteral exposure to laboratory specimens containing high titre of virus | • immediately identify the source individual (if known)  
                          • as a minimum undertake baseline screening of the exposed person  
                          • provide follow up as per section titled: “Treatment of the exposed person”  
                          • seek advice from the expert information network (attachment 1) |
| Definite Exposure       | • skin penetrating injury with a needle contaminated with blood or body fluid  
                          • injection of blood/body fluid not included under ‘Massive Exposure’  
                          • laceration or similar wound which causes bleeding and is produced by an instrument that is visibly contaminated with blood or body fluid  
                          • in laboratory settings, any direct inoculation with HIV tissue or material or material likely to contain HIV, HBV or HCV not included below | |
| Possible Exposure       | • intradermal (‘superficial’) injury with a needle contaminated with blood or body fluid  
                          • a wound produced with an instrument contaminated with blood or body fluid not associated with visible bleeding  
                          • prior (not fresh) wound or skin lesion contaminated with blood or body fluid  
                          • mucous membrane or conjunctival contact with blood  
                          • human bite with blood exposure or scratch | • conduct baseline screening of the exposed person  
                          • documentation by the way of incident reporting and the possibility of further counselling may still be required  
                          • follow up at 3 months may be indicated based on risk assessment. |
| Doubtful Exposure       | • intradermal (‘superficial’) injury with a needle considered not to be contaminated with blood or body fluid  
                          • a superficial wound not associated with visible bleeding produced by an instrument considered not to be contaminated with blood or body fluid  
                          • prior wound or skin lesion contaminated with a body fluid other than blood and with no trace of blood e.g. urine  
                          • human bite with no blood exposure (e.g. saliva) | |
| Non-exposure            | • intact skin visibly contaminated with blood or body fluid  
                          • needlestick with non-contaminated (clean) needle or sharp | • no further follow-up, although documentation by the way of incident reporting and the possibility of further counselling may still be required  
                          • clean needlestick injuries should be documented only, to allow facilities to identify all causes of needlestick injury to facilitate appropriate risk management  
                          • refer to Attachment 2–Medical management of Blood and Body Fluid Exposures for additional information |
Table 2: Risk of developing Hepatitis following exposure to an infected person

<table>
<thead>
<tr>
<th>Source Blood</th>
<th>Risk</th>
<th>The risk of HBV infection is primarily related to the degree of contact with blood in the workplace and also to the hepatitis B e antigen (HBeAg) status of the source person</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBsAg positive and HBeAg negative</td>
<td>1-6%²</td>
<td></td>
</tr>
<tr>
<td>HBsAg positive and HBeAg positive.</td>
<td>22-31%²</td>
<td></td>
</tr>
<tr>
<td>HCV Ab positive</td>
<td>1.8% (range 0%-7%)²</td>
<td></td>
</tr>
</tbody>
</table>

The Exposure

The designated person should estimate the significance of the exposure for BBV transmission, based on consideration of the following factors:

- the nature and extent of the injury
- the nature of the item that caused the injury e.g. gauge of the needle
- the nature of the body fluids involved²
- the volume of blood and body substances to which the healthcare worker was exposed (refer Table 1)
- the infectious status of the source²
- the susceptibility of the exposed person.²

The Source

The designated person should assess the HIV, HBV and HCV status of the source, to adequately determine risk to the exposed person.² This is particularly important in cases of massive, definite and possible exposure (see table 1).

If the status of the source individual is unknown at the time of the exposure, the designated person should undertake baseline testing to determine the source’s infectious status.² Baseline testing should be undertaken by testing for HIV antibody (HIV Ab), HBV surface antigen (HBsAg) and HCV antibody (HCV Ab). If these baseline tests are positive, more specific testing of viral load may be indicated.

The designated person should discuss tests, obtain informed consent and provide post-test counselling to the source, for HIV and HCV tests refer to attachment 3. Confidentiality should be maintained, not only of the source individual, but also regarding the current exposure.

If the source is infected with HIV, HBV or HCV and is not already in the care of an appropriate medical specialist, they should be referred to such a specialist.

Unknown Source

If the exposure source is unknown or cannot be tested, the designated person should epidemiologically assess information about where and under what circumstances the exposure occurred, to determine the likelihood of transmission of HBV, HCV or HIV.² Certain situations, as well as the type of exposure, might suggest an increased or decreased risk; an important consideration is the prevalence of HBV, HCV or HIV in the population group from whence the contaminated source material was derived².

When the source is unknown, the use of PEP should be decided on a case-by-case basis, and it is recommended that an expert always be consulted in this situation.¹⁰

Testing of needles or other sharp instruments implicated in an exposure, regardless of whether the source is known or unknown, is not recommended.²
The Exposed Person

In the case of massive, definite and possible exposures, the designated person should arrange baseline testing of the exposed person for HIV Ab, HBV surface antibody (HBsAb or anti-HBs), and HCV Ab (if risk assessment indicates a significant risk of hepatitis B transmission, testing of HBsAg may be indicated in the exposed person as part of thorough baseline assessment). The designated person should discuss tests, obtain informed consent and provide post-test counselling to the exposed person for HIV and HCV tests (refer to Attachment 3). Confidentiality should be maintained, not only of the exposed person, but also regarding the current exposure or injury.

Treatment of the Exposed Person

When a source is known to be positive for a BBV, testing of the exposed person for HIV Ab, HBsAb and HCV Ab should be undertaken with appropriate pre and post-test discussion and consent. Serum should be stored for at least 12 months to enable parallel testing if necessary. If the exposed person is not immunised for HBV, then a course of vaccination should be offered (refer to table 6: HBV PEP and attachment 2 for further information).

During the follow up period, the exposed person is not required to take any special precautions while at work to prevent secondary transmission other than following standard precautions as recommended for all healthcare workers.

Human Immunodeficiency Virus (HIV)

<table>
<thead>
<tr>
<th>Source status for HIV</th>
<th>Follow up</th>
</tr>
</thead>
</table>
| **Negative for HIV**  | - Provide counselling  
|                       | - Collect baseline bloods from the exposed person  
|                       | - No further action is required once the source is known to be negative for HIV, HBV, HCV and unlikely to be in the window period6  
| If there is a high situational risk of transmission, high level exposure or it is likely the source may be in the window period, follow up testing of the exposed person should be considered at 12 weeks for HCV and HIV (test for HBV also if HCW not immune e.g. HBsAb ≤10IU/L). |
| **Unknown HIV status** | - Provide counselling  
|                       | - Collect baseline bloods from the exposed person  
|                       | - Undertake a risk assessment as per the section titled “Risk Assessment”  
|                       | - The risk of the source being positive for HIV should be considered when giving recommendations concerning prophylactic measures.2  
| If the source refuses to be tested or there are factors which indicate a high risk of the source being infected with HIV, then the relative risk of the source being infected should be assessed and the exposed person managed as appropriate to the level of the risk.4 |
| **Known or likely positive for HIV** | - Provide counselling  
|                       | - Collect baseline bloods from the exposed person  
|                       | - Inform of the potential risk of HIV transmission to others, especially in the first 6-12 weeks following a significant exposure. (Refer table 4). The exposed person should be advised of the following measures to prevent secondary transmission:  
|                       | - not to donate plasma, blood, organs, body tissue, breast milk or sperm4  
|                       | - exercise sexual abstinence or use condoms to prevent sexual transmission and avoid pregnancy4  
|                       | - seek expert medical advice regarding breastfeeding and/or |
The patient care responsibilities of an exposed person do not need to be modified based solely on HIV exposure, to prevent transmission to patients. The designated person should re-test the exposed person at 4-6 weeks and 12 weeks. Further follow up should occur at intervals determined by the appropriate medical specialist.

If the exposed person, on baseline testing, is found to be infected with HIV and is not already in the care of an appropriate medical specialist, they should be referred to such a specialist. If HIV seroconversion is detected, the person should be evaluated according to the Queensland Health Guideline for the Management of Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and Hepatitis C (HCV) Infected Healthcare Workers.

### Table 4: Risk of transmission following exposure to a HIV infected person

<table>
<thead>
<tr>
<th>Type of exposure</th>
<th>Estimated risk of HIV transmission (per exposure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percutaneous to blood</td>
<td>Approximately 0.3% (95% confidence interval [CI] = 0.2% - 0.5%)&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mucous membrane to blood</td>
<td>Approximately 0.09% (CI = 0.006% - 0.5%)&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Non-intact skin or wounds exposed to blood</td>
<td>The average risk for transmission by this route has not been precisely quantified but is estimated to be less than the risk for mucous membrane exposures&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Exposure to fluids or tissues other than HIV-infected blood</td>
<td>The risk for transmission has not been quantified but is probably considerably lower than for blood exposures. &lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

### HIV post-exposure prophylaxis (PEP)

A thorough assessment of risk, as outlined in the section titled Risk Assessment, should be undertaken prior to initiation of HIV PEP. The risk assessment should include:

- Analysis of the type of exposure
- The source’s stage of HIV infection
- The source’s HIV viral load
- The source’s history of HIV antiretroviral therapy.

The professional delivering counselling to an exposed person who is considering prophylaxis should include information on:

- The risk of HIV infection following the exposure<sup>4</sup> (refer to table 4)
- Reports of seroconversion following HIV prophylaxis<sup>4</sup>
- Side effects and adverse reactions associated with HIV prophylaxis<sup>4</sup> (attachment 4)
- Use of HIV prophylaxis in pregnancy / breastfeeding (if appropriate)<sup>4</sup>
- The current status of knowledge regarding the efficacy of chemoprophylaxis following exposure to HIV<sup>4</sup>
- The risk of infecting others
- Appropriate referral for support.

The designated medical officer should seek the advice of an appropriate medical specialist prior to commencement of antiretroviral therapy. After initial consultation with an appropriate medical specialist (see attachment 1, Expert Information Network), the exposed person may be commenced on a starter pack of PEP.

If PEP is indicated it should be prescribed as soon as possible after the exposure and within 72 hours. PEP should not be offered more than 72 hours after exposure. <sup>10</sup>
### PEP Starter Packs (72 hour supply)

| Option 1 | tenofovir 300mg and emtricitabine 200mg (Truvada<sup>®</sup>) - 3 tablets |
| Option 2 | tenofovir 300mg and emtricitabine 200mg (Truvada<sup>®</sup>) - 3 tablets + raltegravir 400mg (Isentress<sup>®</sup>) - 6 tablets |
| Option 3 | tenofovir 300mg and emtricitabine 200mg (Truvada<sup>®</sup>) - 3 tablets + lopinavir 200mg + ritonavir 50mg (Kaletra<sup>®</sup>) - 12 tablets |

Attachment 4 contains an information sheet on the medication contained in the starter pack. Attachment 5 contains HIV PEP starter pack distribution lists.

If PEP is to be prescribed, the appropriate medical specialist can prescribe (as indicated). Re-evaluation of the exposed person should occur within 72 hours postexposure<sup>5</sup> before a 28 day course of PEP is recommended<sup>10</sup>. Exposures from a source taking antiretroviral therapy should be discussed with an expert from the Expert Information Network (Attachment 1), as the exposed person may need to be treated with a different combination of drugs.

The designated medical officer should document the decision of the exposed person to accept or decline treatment.

### PEP Starter Packs

**Provision of PEP should not be delayed while establishing the source status.**<sup>10</sup>

#### The source status for HIV is unknown

If the clinician and the exposed person decide that PEP should be prescribed, the appropriate medical officer should prescribe the starter pack of PEP, with follow-up by a HIV specialist within 48 hours. The designated medical officer should consult with a HIV specialist.

#### The source is known to be HIV positive

If the designated medical officer and exposed person decide that PEP should be prescribed, the individual should be prescribed the starter pack of PEP, with follow-up by a HIV specialist within 48 hours. In this setting, the choice of therapy should be based upon the available current PEP pack drug treatment, the HIV drug treatment history of the source, and drug resistance test results. The designated medical officer should consult with a HIV specialist in all circumstances.

#### High risk exposures

If a high risk exposure is sustained, and PEP is to be prescribed, the person should be commenced on the starter pack of PEP and followed up by a HIV specialist within 48 hours. High risk exposures include:
- deep needlestick or other percutaneous injury with a device visibly contaminated with blood
- gross contamination of mucous membrane or non-intact skin exposure with HIV positive blood
- exposure injuries from patients that are known to have:
  - advanced HIV disease
  - recent testing that shows high plasma viral loads
  - HIV antiretroviral drug resistance testing that shows that the source individual has evidence of drug resistance involving primary mutations to drugs from at least two drug classes.
Hepatitis B Virus (HBV)

<table>
<thead>
<tr>
<th>Table 5: Hepatitis B Virus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exposed persons immunity status</strong></td>
</tr>
</tbody>
</table>
| Exposed person has or has had a previously documented HBsAb ≥10 IU/L | • Provide counselling  
• If the exposed person has (or previously had) an HbsAb level ≥10 IU/L, then the risk of acquisition is negligible. |
| Exposed person does not have immunity to HBV (i.e. no prior history of HBsAb ≥ 10 IU/L) | • Provide counselling, including the risk of developing clinical hepatitis (see Table 2) following exposure (this should occur both on presentation and within a few days at follow-up).  
• Collect baseline bloods. |

<table>
<thead>
<tr>
<th><strong>Source patients status</strong></th>
</tr>
</thead>
</table>
| Source known or likely to be positive for HBsAg and the exposed person does not have immunity to HBV | • Provide counselling  
• Collect baseline bloods for HBsAb  
• PEP should be considered as per below.  
Follow up:  
• at 6 weeks the exposed person should have a liver function test (LFT)  
• another LFT and HBsAg testing should be undertaken at 12 weeks  
• HBsAg should be tested again at 6 months. |
| Source is known to be negative for HBV and unlikely to be in the window period | • Provide counselling  
• Collect baseline bloods from the exposed person  
• No further action is required once the source is known to be negative for HIV, HBV, HCV and unlikely to be in the window period⁶  
• If there is a high situational risk of transmission, high level exposure or it is likely the source may be in the window period, follow up testing of the exposed person should be considered at 12 weeks for HBV if HCW not immune e.g. HBsAb ≤10IU/L). |

If there is evidence that the exposed person has acute hepatitis B, then they should be referred to a specialist experienced in the management of HBV. Healthcare workers performing exposure prone procedures who are found to be infected with HIV, HBV, or HCV should be managed in accordance with Queensland Health Guideline for the Management of Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and Hepatitis C (HCV) Infected Healthcare Workers.

**HBV PEP with Hepatitis B Immunoglobulin**

The role of antiviral drugs in PEP for hepatitis B has not been established. Initiation of HBV PEP is dependent on the type of exposure, the source’s HBsAg status and the exposed person’s HBsAb status. Hepatitis B vaccination or proof that an individual is not susceptible to hepatitis B is a condition of employment for all Queensland Health staff who have direct contact with patients or who in the course of their work may be exposed to blood/body fluids or contaminated sharps.

Where hepatitis B immunoglobulin (HBIG) is indicated, it should be administered as soon as possible after the exposure and within 72 hours of exposure.¹¹ When hepatitis B vaccine is indicated, it should also be administered as soon as possible after exposure and within 7 days of exposure and can be administered simultaneously with HBIG at a separate site.¹¹ For detailed information regarding HBV PEP refer to table 6 and the current edition of the Australian Immunisation Handbook.
Counselling of the exposed person should include information on:

- appropriate referral for support
- the risk of HBV infection following the exposure
- side effects and adverse reactions associated with hepatitis B vaccination and HBIG
- use of hepatitis B vaccine and HBIG in pregnancy / breastfeeding
- the risk of infecting others.

The decision to accept or decline treatment is that of the exposed person, and should be documented.

<table>
<thead>
<tr>
<th>HCW Status</th>
<th>Source status and corresponding recommendations for treatment of HCW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unvaccinated</strong>2:</td>
<td><strong>HBsAg positive</strong> OR source not tested/unknown</td>
</tr>
<tr>
<td>HBIG x 1</td>
<td>Initiate 3 dose HB vaccination course. Give 1st dose within 7 days of exposure and then further dose at 1 and 6 months after first dose</td>
</tr>
<tr>
<td><strong>Previously vaccinated</strong>2:</td>
<td></td>
</tr>
<tr>
<td>A. Documented vaccine responder with current HBsAb level ≥10 IU/L</td>
<td>No treatment</td>
</tr>
<tr>
<td>B. Non-responder*</td>
<td>HBIG x 1</td>
</tr>
</tbody>
</table>
| C. Documented history of primary course of hepatitis B vaccine but in whom seroconversion status is not known | Check HBsAb level:  
  * If ≥10 IU/L, no treatment  
  * If <10 IU/L, HBIG x 1, booster dose x 1, and check HBsAb level after 1 month | Check HBsAb level for reference but no treatment required |
| D. Vaccination incomplete       | HBIG x 1                                                    | Administer remaining ‘missed’ doses  
  Check HBsAb level after 1 month | Administer remaining ‘missed’ doses  
  Check HBsAb level after 1 month |
| **Past history or resolved infection** | No treatment | No treatment |
| **Current infection**           | No treatment | No treatment |

Refer to Queensland Health Guideline for the Management of Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), and Hepatitis C Virus (HCV) Infected Health Care Workers

Where HBIG is indicated, it should be administered as soon as possible and within 72 hours of exposure11. When HB vaccine is indicated, it should be administered as soon as possible after exposure within 7 days of exposure and can be administered simultaneously with HBIG at a separate site11.

* Management of health care workers following a body fluid exposure where the source is unknown or is HBV positive should always be done in consultation with an Infectious Diseases Physician (refer attachment 1) or appropriate medical officer.

Hepatitis C Virus (HCV)

<table>
<thead>
<tr>
<th>Source status</th>
<th>Follow up</th>
</tr>
</thead>
</table>
| Source patient is HCV Ab positive | • Provide counselling. This should include:  
- appropriate referral for support  
- the risk of HCV infection following exposure (see table 2)  
- the risk of infecting others. The exposed person should be advised that during the follow up period they should refrain from donating plasma, blood, organs, body tissue, breast milk or sperm. The exposed person is not required to modify sexual practices or refrain from becoming pregnant or breastfeeding.  
- Collect baseline bloods for HCV Ab. Baseline testing for alanine aminotransferase (ALT) should also be undertaken.  
- At this time, there is no prophylaxis proven to be effective for HCV exposure; IG (immunoglobulin) and antiviral agents are not recommended for PEP after exposure to HCV-positive blood. The aim of follow-up is to detect acute hepatitis C as soon as possible so that appropriate management can be instituted.  
- Subsequent testing for HCV Ab and ALT should occur at 12 weeks and 6 months.  
- If the exposed person is HCV Ab positive and/or has an elevated ALT on subsequent testing then HCV RNA testing should be performed. The exposed person should also be advised to attend for evaluation if they become unwell with symptoms consistent with acute hepatitis such as nausea, vomiting, abdominal discomfort or jaundice.  
- For healthcare workers who perform exposure prone procedures (EPP) testing may need to occur earlier or more frequently. (Refer to the Expert Information Network for advice-attachment 1). |
| Source patient is HCV Ab negative and unlikely to be in the window period | • Provide counselling  
• Collect baseline bloods from the exposed person  
• No further action is required once the source is known to be negative for HIV, HBV, HCV and unlikely to be in the window period |
| | • If there is a high situational risk of transmission, high level exposure or it is likely the source may be in the window period, follow up testing of the exposed person should be considered at 12 weeks for HCV. |

If there is evidence that the exposed person has acute hepatitis C, then they should be referred to a specialist experienced in the management of HCV. Healthcare workers performing exposure prone procedures who are found to be infected with HIV, HBV, or HCV should be managed in accordance with Queensland Health Guideline for the Management of Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and Hepatitis C (HCV) Infected Healthcare Workers.

Care when the exposed person is a patient

When the exposed person is a patient, the same requirements as for occupational exposures should be applied. The designated person should ensure the below steps are undertaken:

- Follow the processes outlined in the section titled Immediate Care of the Exposed Person.
- The exposure to blood and body fluids should be disclosed to the patient and/or their guardian as soon as possible after the exposure.
The patient's treating medical team should be informed of the blood or body fluid exposure as soon as possible after the exposure.

The designated person should undertake a risk assessment (refer to the section titled Risk Assessment). When conducting the risk assessment, the nature of the incident needs to be taken into consideration as the assessment may need to be conducted with the occupational setting criteria.

The designated person should document the incident in the patient's confidential medical record.


If the source is identified, the designated person should follow the processes in the section titled The Exposure.

All staff involved should maintain confidentiality, not only of the patient, but also regarding the current exposure or injury.

Treatment of the exposed person should be in accordance with all other sections of this document. Follow-up testing of the patient should be coordinated by staff in the facility unless the patient prefers to be referred back to their general practitioner.

If prophylaxis is indicated, the processes outlined in sections titled HIV post exposure prophylaxis (PEP), PEP starter packs and HBV PEP with Hepatitis B Immunoglobulin should be followed.

### Glossary of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition/Explanation/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Borne Virus (BBV)</td>
<td>For the purpose of this guideline the term blood borne virus includes human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV).</td>
</tr>
<tr>
<td>Body fluids</td>
<td>In addition to blood and body fluids containing visible blood, the following fluids are considered potentially infectious: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. Although semen and vaginal secretions have been implicated in sexual transmission of HBV, HCV and HIV, they have not been implicated in occupational transmission from patients to healthcare workers.</td>
</tr>
<tr>
<td>Clean needlestick injuries</td>
<td>Those not contaminated with blood/body fluids.</td>
</tr>
<tr>
<td>Designated medical officer</td>
<td>Person employed within the medical position that has been designated by the Hospital and Health Service or facility to provide treatment and follow-up for exposed persons. Many of the reporting, follow-up, and treatment functions may be designated to a non-medical professional; however, some functions may not. These functions are such activities as prescribing post-exposure prophylaxis for HIV, and interpretation of certain serological tests.</td>
</tr>
<tr>
<td>Designated person</td>
<td>Person employed within the position that has been designated by the Hospital and Health Service or facility to perform the functions of reporting and providing treatment and follow-up for exposed persons. This person may be in (but not limited to) an infection control position, occupational health and safety position, emergency department physician position or other medical or nursing position.</td>
</tr>
<tr>
<td>Exposure Prone Procedure (EPP)</td>
<td>EPP are invasive procedures where there is potential for direct contact between the skin, usually finger or thumb, of the healthcare worker and sharp surgical instruments, needles or sharp tissues (e.g. fractured bones), spicules of bone or teeth in body cavities or in poorly visualised or confined body sites, including the mouth of the patient.</td>
</tr>
<tr>
<td>Exposed Person</td>
<td>The person who sustained the occupational exposure.</td>
</tr>
<tr>
<td>HBsAb</td>
<td>Hepatitis B surface antibody</td>
</tr>
<tr>
<td>HBeAg</td>
<td>Hepatitis B e antigen</td>
</tr>
<tr>
<td>HBsAg</td>
<td>Hepatitis B surface antigen</td>
</tr>
</tbody>
</table>
Significant exposure to blood or other body substance (e.g. semen, vagina secretions) that is not work related e.g. unprotected sexual contact, sharing infection equipment, accidental needlestick and other injuries (e.g. physical and sexual abuse).

An occupational exposure is an incident that exposes a healthcare worker to another person's blood or body fluid during their work, which may place them at risk of blood borne virus infection. This can include:

- A percutaneous injury, where the healthcare worker's skin has been cut or penetrated by a needle or other sharp object that may be contaminated with blood or other body fluid. For example, a needlestick injury or cut with a sharp object such as a scalpel blade.
- A mucosal exposure, where there is contact of mucous membranes or non-intact skin (e.g. exposed skin that is chapped or abraded) with blood or body fluids. For example, a blood splash to the eyes.

An object or device having sharp points, protuberances or cutting edges capable of causing a penetrating injury to humans. This includes hypodermic, intravenous or other medical needles, Pasteur pipettes, disposable dental picks and drill bits, scalpel blades, lancets, scissors, glass slides and broken laboratory glass.

Laboratory tests done on blood serum to measure antibodies against antigens of the micro-organism thought to be causing the infection e.g. HBsAg.

Person from who blood or body fluids originated.

The time from exposure to seroconversion when the source may be asymptomatic or experiencing seroconversion illness.

References

12. Patient.co.uk trusted medical information and support. Raltegravir (Isentress). [cited 2014 Feb 27],
http://www.patient.co.uk/medicine/raltegravir-isentress
Revision History

<table>
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<tr>
<th>Version number</th>
<th>Date of issue</th>
<th>Date of next revision</th>
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<td>Rescinded</td>
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<td>2.0</td>
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Document Custodian
Centre for Healthcare Related Infection Surveillance and Prevention (CHRISP)

Approving Officer
Dr Jeannette Young
Chief Health Officer

Approval Date
26 June 2014
## Attachment 1: Expert Information Network

Advice is available 24 hours, seven days a week by the infectious Diseases Physician on call. They can be contacted through the switchboard in the following facilities:

<table>
<thead>
<tr>
<th>Location</th>
<th>Hospital</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brisbane</td>
<td>Princess Alexandra Hospital</td>
<td>(07) 3176 2111</td>
</tr>
<tr>
<td></td>
<td>Mater Health Service</td>
<td>(07) 3163 8111</td>
</tr>
<tr>
<td></td>
<td>Royal Brisbane &amp; Women’s Hospital</td>
<td>(07) 3646 8111</td>
</tr>
<tr>
<td></td>
<td>The Prince Charles Hospital</td>
<td>(07) 3139 4000</td>
</tr>
<tr>
<td>Gold Coast</td>
<td>Gold Coast University Hospital</td>
<td>(07) 5519 8211</td>
</tr>
<tr>
<td>Nambour</td>
<td>Nambour General Hospital</td>
<td>(07) 5470 6600</td>
</tr>
<tr>
<td>Townsville</td>
<td>The Townsville Hospital</td>
<td>(07) 4433 1111</td>
</tr>
</tbody>
</table>
Exposure to blood and/or body fluid has occurred. Initial first aid has been provided.

- Assess risk
- Provide counselling and reassurance
- If source is unknown, consult ID physician or expert network

Is source known, or likely to be HIV or HCV positive?

- Request baseline blood from exposed person for HIV Ab, HBsAb and HCV Ab (and ALT if source is HCV positive)

Does the exposed person have (or previously had) a HBsAb level ≥10IU/L?

- Yes
  - Hepatitis B vaccine is not indicated
  - Immunoglobulin (HBIG) not indicated
  - Complete report forms

- No
  - Notify ID physician on call to arrange administration of post exposure prophylaxis as appropriate
  - Reassure exposed person
  - Arrange counselling for exposed person

Follow up testing:
Source is HIV positive/unknown:
- HIV Ab at 6 weeks and 12 weeks
Source is HCV positive/unknown:
- HCV Ab and ALT at 12 weeks and 6 months
- If HCW performs EPP, earlier and more frequent follow up may be required- seek advice from the Expert Information Network
- HCV RNA indicated if follow up test positive for HCV Ab &/or elevated ALT

If source is negative for HCV and HIV:
- No further testing generally required, refer to section-Treatment of the exposed person for more information

If exposed person is not immune to HBV at time of exposure, no prior history of HBsAb≤10 IU/L and source HBsAg positive/unknown:
- LFT at 6 weeks and 12 weeks
- HBsAg at 12 weeks and 6 months (may give a false positive if tested within 2 weeks of giving Hepatitis B vaccine)
- If exposed person immune (HBsAb level ≥ 10 IU/L) at time of exposure, follow up for Hepatitis B not indicated

If any tests for HIV, HCV or HBV are positive on the source or the exposed person and they are not already in the care of an appropriate medical specialist, they should be referred to such a specialist.

Attachment 2: Management of blood and body fluid exposures
Attachment 3: Guidelines for HIV and HCV Pre & Post Discussion

Members of the Expert Information Network will provide initial counselling and information regarding ongoing support for the affected healthcare worker if required.


Pre-Test Discussion

Pre-test information aims to prepare individuals for testing and to obtain informed consent. Informed discussion should occur between practitioner and the person before testing. This should include giving appropriate information about risk, points of referral if necessary, assurances about confidentiality and privacy, and assessment of the person’s preparedness to be tested.

Specifically, the HIV test discussion should provide accurate information about safe practices that is appropriate to the person’s gender, culture, behaviour and language and include:

- information on how HIV or HCV is transmitted including how to reduce the risk of becoming infected or infecting others
- risk assessment and discussion of the reason for testing
- timing of the risk event and options for HIV PEP
- information regarding confidentiality and privacy
- information about the testing process including how results are to be provided, the window period, and the difference between HIV and AIDS (where appropriate)
- information about what happens to test results
- explaining and seeking informed consent for the test to be conducted
- assessment of the person’s preparedness to be tested
- information about what a negative or positive result means and
- assessment of support mechanisms while waiting for the test result and/or if the result is positive.

Post-Test Discussion

Positive test results must be given in person. Negative test results and the associated post-test discussion should be conducted on the basis of the person’s education and HIV or HCV awareness and specific circumstances and should be appropriate to their gender, culture and language.

The post-test discussion should include:

- giving the test result in person and in a manner that is sensitive and appropriate to gender, culture beliefs and practices, behaviour, understanding and language and literacy levels
- reassessing support mechanisms and requirements of the person
- if the result is negative, reinforcing positive education and messages about safe behaviours, and examining any difficulties or issues that the client may have in practicing safe behaviours
- if the result is positive, at an appropriate time, issues such as;
  - immediate needs and support including written information
  - safe behaviours – education, information and support
  - who the person will tell and how, including information about the person’s rights regarding disclosure
  - managing or understanding strong emotions, feelings, reactions and changes; including ways to deal with loss and grief, depression, anger and anxiety
  - options in drug treatment and medical management
  - ongoing counselling or therapy if required
  - complementary / alternative management options
  - strategies for managing hepatitis C or HIV which are flexible and appropriate to the person’s needs
  - legislative requirements (notifications, contact tracing, storage and coding).
Attachment 4: Post-exposure prophylaxis (PEP) Information Sheet:

Therapy is only to be initiated after consultation with an Infectious Diseases physician (or an approved prescriber in the context of non-occupational exposure).

The kit includes 3 x Truvada® (tenofovir 300mg and emtricitabine 200mg), or
3 tablets Truvada® (tenofovir 300mg and emtricitabine 200mg) and 6 tablets of Isentress® (raltegravir 400mg), or
3 tablets Truvada® (tenofovir 300mg and emtricitabine 200mg) and 12 tablets of Kaletra® (lopinavir 200mg and ritonavir 50mg)

Introduction
To reduce the risks of transmission of HIV after exposure, international authorities recommend immediate treatment with a combination of drugs, all of which are known to block reproduction of HIV. You may be asked to take either Truvada® alone, both Truvada® and Isentress® or both Truvada® and Kaletra® depending on expert risk assessment. To be most effective, these medications must be commenced as soon as possible after exposure and taken exactly as instructed.

How do these drugs work?
A number of stages are involved in the process of HIV multiplying within cells. One of the initial stages involves the virus changing its genetic material so it can re-program the nucleus of the infected cell. The enzyme that enables HIV to do this is called reverse transcriptase. Drugs that combat HIV at this stage are called nucleoside reverse transcriptase inhibitors (NRTIs). Truvada® is from this group of drugs.

At a later stage of HIV production, before the virus leaves the cell, the components of the virus must be split into useable components so it can infect other cells. An enzyme called protease performs this function. Protease inhibitors are drugs that combat HIV at this stage of the production of the virus. Drugs that target the virus at different steps in its development can be used in combination for the most potent antiviral effect, protecting the immune system. Kaletra® is from this group of drugs.

HIV destroys cells in the body, called CD4 T cells. These cells are a type of white blood cell and are important because they are involved in protecting your body from infection. If left untreated, the HIV infection weakens your immune system so that your body cannot defend itself against bacteria, viruses and other germs. Raltegravir is known as an integrase inhibitor antiretroviral medicine. It works by stopping an enzyme which is produced by the virus from working. The virus produces the enzyme to help it multiply in the body, so by preventing it from working, Raltegravir reduces the amount of virus in your body. This helps to improve your immune system.12

Important Points:
- Take this medicine exactly as directed by your Doctor. Do not take it more often.
- Do not stop taking this medicine without checking with your doctor first. This starter pack contains three days supply. However, you may need to continue the medication for a total of 4 weeks and thus you will need an appointment in the next few days to get further supplies.
- Complete the full course as prescribed.
- Avoid missing doses as these medications are most effective when there is a constant amount in the blood.
- These medications may interact with other medications you are taking. It is important that your Doctor is aware of all the medications you currently take. Some common interactions are described overleaf.
- These medications are not usually available from your local community pharmacy and you will need to have your ongoing supply of medication dispensed from a public hospital or clinic. Your doctor will advise your nearest contact pharmacy.
<table>
<thead>
<tr>
<th>PEP Drug</th>
<th>Side Effects</th>
<th>Other Medical Conditions</th>
<th>Drug interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenofovir 300 mg /</td>
<td>If you develop any of the following contact your doctor right away:</td>
<td>Inform your doctor if you have:</td>
<td>Tell your doctor about all medicines that you are taking. This includes prescription</td>
</tr>
<tr>
<td>Emtricitabine 200 mg</td>
<td>• Weakness or being more tired than usual; unusual muscle pain; being short of</td>
<td>• liver problems including hepatitis B virus infection</td>
<td>medications, over the counter products or herbal/natural remedies. Truvada should</td>
</tr>
<tr>
<td>Trade Name</td>
<td>breath or fast breathing; nausea, vomiting, and stomach area pain; cold or</td>
<td>• kidney problems or receive kidney dialysis treatment</td>
<td>not be taken at the same time as:</td>
</tr>
<tr>
<td>Truvada®</td>
<td>blue hands and feet; feel dizzy or light-headed; fast or abnormal heartbeats.</td>
<td>• bone problems</td>
<td>• Atripla</td>
</tr>
<tr>
<td></td>
<td>Call your doctor right away if you get the following liver problems:</td>
<td>• any other medical conditions</td>
<td>• Emtrivia</td>
</tr>
<tr>
<td></td>
<td>• Your skin or the white part of your eyes turns yellow; dark “tea-coloured”</td>
<td>• are pregnant or planning to become pregnant</td>
<td>• Viread</td>
</tr>
<tr>
<td></td>
<td>urine; light-coloured stools; loss of appetite for several days or longer,</td>
<td></td>
<td>• Hepsera</td>
</tr>
<tr>
<td></td>
<td>nausea; stomach area pain.</td>
<td></td>
<td>• Epivir or other combination tablets that contain Epivir</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raltegravir 400 mg</td>
<td>If you develop any of the following stop taking Isentress® and contact your</td>
<td>Inform your doctor if you have:</td>
<td></td>
</tr>
<tr>
<td>Trade Name</td>
<td>doctor right away:</td>
<td>• liver problems</td>
<td></td>
</tr>
<tr>
<td>Isentress®</td>
<td>• Fever; generally ill feeling; extreme tiredness; muscle or joint aches;</td>
<td>• a history of muscle disorder called rhabdomyolysis or myopathy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>blisters or sores in mouth; blisters or peeling skin; redness or swelling of</td>
<td>• levels of creatine kinase in your blood</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the eyes; swelling of the mouth or face; problems breathing.</td>
<td>• phenylketonuria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Call your doctor right away if you have any of the following signs or</td>
<td>• any other medical conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>symptoms of liver problems:</td>
<td>• are pregnant or planning pregnancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Yellowing of your skin or whites of your eyes; dark coloured stools;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>nausea or vomiting; loss of appetite; pain, aching or tenderness on the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>right side of your stomach area.</td>
<td></td>
<td></td>
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</tbody>
</table>
| **Lopinavir 200mg with ritonavir 50mg**  
**Trade Name** Kaletra® - combination | Check with your doctor if you are concerned about any of the following side effects:  
- More common - abnormal stools (bowel movements); mild to moderate diarrhoea; feeling weak and tired; headache; and nausea.  
- Less common - worsening of liver disease; pancreatitis; increases in triglycerides and cholesterol; diabetes and high blood sugar levels; increased bleeding if you have a clotting disorder. | Inform your doctor if you have:  
- Liver disease or liver problems or are infected with Hepatitis B or Hepatitis C  
- Diabetes  
- Haemophilia | Drug and herbal preparations which interact with lopinavir with ritonavir include: anticoagulants, corticosteroids, St John's Wort, antifungals, rifamycins, antiarrhythmics (digoxin, amiodarone, systemic lignocaine and quinidine), disulfiram, metronidazole, warfarin, methadone, and oral and patch contraceptives. |
Attachment 5: Distribution of HIV PEP Starter Packs

Queensland Health hospital facilities with Pharmaceutical Staff

- Atherton Hospital
- Baillie Henderson Hospital
- Basil Stafford Centre
- Biloela Hospital
- Bowen Hospital
- Bundaberg Base Hospital
- Caboolture Hospital
- Cairns Base Hospital
- Caloundra Hospital
- Charleville Hospital
- Emerald Hospital
- Gladstone Hospital
- Gold Coast University Hospital
- Gympie Hospital
- Ipswich Hospital
- Kingaroy Hospital
- Logan Hospital
- Longreach Hospital
- Mackay Base Hospital
- Mareeba Hospital
- Maryborough Base Hospital
- Mater Public Hospitals
- Mt Isa Base Hospital
- Nambour Hospital
- Oakey Hospital
- Princess Alexandra Hospital
- The Prince Charles Hospital
- Queen Elizabeth II Jubilee Hospital
- Royal Brisbane & Women’s Hospital
- Redcliffe Hospital
- Redland Hospital
- Rockhampton Base Hospital
- Roma Hospital
- Royal Children’s Hospital
- The Townsville Hospital
- Thursday Island Hospital
- Toowoomba Base Hospital
- Warwick Hospital
- Wolston Park Hospital

1. Clinical Forensic Medicine Unit
   51 Herschel Street, Brisbane

2. Queensland Sexual Health Clinics for management of non-occupational exposures

<table>
<thead>
<tr>
<th>Service</th>
<th>Phone Number</th>
</tr>
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<tbody>
<tr>
<td>Thursday Island Sexual Health – Men’s and Women’s Health</td>
<td>4069 0413</td>
</tr>
<tr>
<td>Bamaga Sexual Health Service</td>
<td>4090 4219</td>
</tr>
<tr>
<td>Men’s and Women’s Health - Cape York Sexual Health</td>
<td>4082 3900</td>
</tr>
<tr>
<td>Cairns Sexual Health Service</td>
<td>4226 4769</td>
</tr>
<tr>
<td>Palm Island Sexual Health Clinic</td>
<td>4752 5100</td>
</tr>
<tr>
<td>Townsville Sexual Health Clinic</td>
<td>4433 9641</td>
</tr>
<tr>
<td>Mt Isa Sexual Health Clinic</td>
<td>4744 4805</td>
</tr>
<tr>
<td>Mackay Sexual Health and Sexual Assault Service</td>
<td>4968 3919</td>
</tr>
<tr>
<td>Rockhampton Sexual Health and HIV Service</td>
<td>4932 5440</td>
</tr>
<tr>
<td>Wide Bay Sexual Health - Q Clinic</td>
<td>4150 2754</td>
</tr>
<tr>
<td>Sunshine Coast Sexual Health and HIV Service – Clinic 87</td>
<td>5470 5244</td>
</tr>
<tr>
<td>Redcliffe Sexual Health Clinic</td>
<td>3897 6300</td>
</tr>
<tr>
<td>Brisbane Sexual Health &amp; HIV Service</td>
<td>3837 5611</td>
</tr>
<tr>
<td>Princess Alexandra Sexual Health</td>
<td>3176 5881</td>
</tr>
<tr>
<td>Ipswich Sexual Health Clinic</td>
<td>3817 2428</td>
</tr>
<tr>
<td>Toowoomba Sexual Health Clinic – Kobi House</td>
<td>4616 6446</td>
</tr>
<tr>
<td>Gold Coast Sexual Health Clinic</td>
<td>5576 9033</td>
</tr>
</tbody>
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