Queensland Health

Management of occupational exposure to blood and body fluids – Infection prevention and control

v5.1 December 2024

Key messages

- Occupational exposures to blood and body fluids have the potential to transmit the blood-borne viruses HIV, Hepatitis C, and Hepatitis B.
- Exposures that might place a healthcare worker at risk of HBV, HCV, or HIV infection are:
  - 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 blood-borne viruses. See Table 2 – Body fluids and risk for BBV transmission.
- The immediate priority is **first aid.** Wash affected skin or wounds with soap and water. Wash affected mucous membranes with water, and irrigate affected eyes with normal saline or clean water.
  See 4.2 Immediate care of the exposed person for details.
- **Prompt assessment and management** is required, including baseline pathology testing of the source patient and the exposed person.
  See 4.3 Risk assessment for details.
- **Post-exposure prophylaxis** is available for HIV and Hepatitis B and, where required, this must be commenced as soon as possible following the exposure (preferably same day, must be commenced within 72 hours).
  See 4.5 Post-exposure management of the exposed person for details.
- No post-exposure prophylaxis is available for Hepatitis C. However, in the event of transmission of infection with HCV, referral is available for highly effective treatment for HCV, with the goal of successful viral eradication (cure).
- For occupational exposures to communicable diseases other than HIV, HBV, and HCV, refer to the applicable communicable disease control guidance.

Quick reference summary

The table below (Table 1) provides a quick reference of the required actions following exposure to blood or body fluids. Please note: Follow-up actions required for 1 week, 4-6 weeks, 12 weeks, and 6 months will differ depending on the outcome of risk assessment and baseline serology.

Table 1. Quick reference summary of actions

When post-exposure	Recommended management actions	
Immediately	• First aid • Notify supervisor • Relief from duty • Inform the source patient if appropriate • Risk assessment – gather exposure and source patient details	
As soon as possible (preferably same day, PEP must be commenced within 72 hours)	• Source assessment • Documentation and assessment of the exposure • Informed consent for testing (exposed person and source) • Baseline serology (exposed person and source): – If the source patient is positive for any blood-borne virus (BBV) arrange counselling and referral to a clinical expert – If the source patient is positive for HIV or HBV, assess the need for the exposed person to receive post-exposure prophylaxis (PEP), and commence if indicated – If the exposed person is not immune to HBV, assess the need for vaccination • If HIV PEP is commenced, arrange a referral to a specialist physician • Offer referral to the employee assistance program • Formal reporting as per HHS local procedures	
Within 1 week	• Conduct a review of the exposure incident to determine if any education or system improvement is required • Informed consent discussion for future recommended testing	Convey results to the exposed person Re-offer referral to employee assistance program If positive serology refer to an appropriate specialist for clinical management
Week 4-6	Follow-up serology (where required) for HIV, hepatitis C virus (HCV)	
Week 12	Follow-up serology (where required) for HIV, hepatitis B virus (HBV), HCV	
6 months	Follow-up serology (where required) for HBV	

Contents

1 Purpose

This guideline provides recommendations to support the immediate assessment and management, as well as follow-up, of individuals who have had an occupational exposure to blood or body fluids in a Queensland Health care setting.

2 Scope

Compliance with this guideline is not mandatory, but sound reasoning must exist for departing from the recommended principles within this guideline.

This guideline provides information for all Queensland public health system employees and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, Queensland Ambulance Service workers, contractors, consultants, volunteers, and students/trainees). The information found in this guideline may also be used by other health and residential care services.

This guideline provides infection prevention and control recommendations for post-exposure management of occupational exposure to blood or body fluids. For information and recommendations on prevention of sharps injuries and occupational exposures refer to the Australian guidelines for the prevention and control of infection in healthcare and the Queensland Health webpage Sharps safety in health and care settings.

For occupational exposures to communicable diseases other than HIV, hepatitis B or hepatitis C, refer to the applicable communicable disease control guidance.

For occupational exposures in the laboratory involving pathogens other than the blood-borne viruses covered in this guidance, refer to Pathology Queensland internal guidance and the applicable communicable disease control guidance.

For exposure to cytotoxic agents refer to local procedures and guidance and to the Workplace Health and Safety Queensland Guide for handling cytotoxic drugs and related waste.

For non-occupational exposures refer to the Post-Exposure Prophylaxis after non-occupational and occupational exposure to HIV: Australian National Guidelines, the applicable communicable disease control guidance, and the Australian STI management guidelines for use in primary care.

Persons other than Queensland Health workers may present to emergency departments seeking assessment and treatment for occupational exposures. In the case of Queensland Police Service (QPS) workers, they may be advised to contact the QPS Health and Safety Infoline on 1800 558 775. This is a service available to police, staff of the QPS and their immediate family. The service is available 8am to 5pm Monday to Friday (except public holidays).

3 Related documents

3.1 Queensland guidance

Workplace Health and Safety Queensland: Managing the risk of psychosocial hazards at work Code of Practice 2022

Queensland Health best practice guide to clinical incident management

Queensland Health guideline for vaccination of healthcare workers

Queensland Health Health safety and wellbeing governance standard

Queensland Health Management of healthcare workers living with a blood-borne virus

Queensland Health Work health and safety incident response standard

3.2 National guidance

ASHM B Positive: Hepatitis B for primary care

ASHM HIV Management in Australasia: A guideline for clinical care

ASHM National Hepatitis C Testing Policy

ASHM Post-exposure prophylaxis after non-occupational and occupational exposure to HIV: Australian national guidelines (third edition)

Communicable Diseases Network Australia Australian national guidelines for the management of healthcare workers living with blood-borne viruses and healthcare workers who perform exposure-prone procedures at risk of exposure to blood-borne viruses

Gastroenterological Society of Australia Australian recommendations for the management of hepatitis C virus infection: a consensus statement (2022)

Guidelines: Registered health practitioners and students about blood-borne viruses. Refer to the relevant National Board of AHPRA

National Health and Medical Research Council Australian guidelines for the prevention and control of infection in healthcare

National Health and Medical Research Council Hepatitis B section of the Australian Immunisation Handbook

4 Guideline for management of occupational exposures to blood and body fluids

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

- a percutaneous injury (for example a needlestick or cut with a sharp object)
- contact of mucous membranes, conjunctiva, compromised or non-intact skin with blood, tissue, or other bodily fluids that are potentially infectious (Refer to Table 2).

For this guideline, a healthcare worker (HCW) is defined as any worker performing any role within a healthcare setting. This includes employees, contractors, volunteers, and students.

4.1 Chief executive responsibilities

HHS chief executives should ensure:

- Local systems are in place for reporting and managing exposures of healthcare workers (HCW) to blood and body fluids. This includes both internal and external (e.g. to Workplace Health and Safety Queensland) incident reporting. It also includes surveillance, monitoring and reporting of rates of occupational exposure, and the management of the clinical and psychosocial care of exposed persons.
- All staff receive education regarding the appropriate use of standard precautions, sharps safety, and the process to follow in the event of an exposure to blood or body fluids on induction to the workplace, and this education is included in ongoing infection control education opportunities.
- A system and documented procedure is in place locally for the immediate management and continuing follow-up of HCW following occupational exposures to blood or body fluids and blood-borne viruses (BBVs). The documented procedure should identify a local contact, and a specialist in infectious diseases as a resource person for that facility.
- The procedure to follow in the event of an exposure and relevant contact numbers to access immediate management is readily accessible to all healthcare workers.
- Expert advice is available 24 hours a day to enable prompt evaluation and, if needed, timely administration of post-exposure prophylaxis.
- Confidentiality is maintained for the source individual and the exposed person.
- Healthcare workers can obtain support following a blood or body fluid exposure including access to the employee assistance program or workers' compensation if appropriate.

4.2 Immediate care of the exposed person

4.2.1 First aid

Immediately following exposure to blood or body fluids, the exposed person should undertake the following as soon as possible:

For eye exposures:

- irrigate well with clean water or normal saline[1] – remove contact lenses
- irrigate eyes while they are open for at least 30 seconds.

For other mucous membrane exposures:

- if blood or body fluids are in the mouth spit out first
- irrigate well with water.[1]

For intact skin exposures:

- wash with soap and water to remove any blood or body fluid[1]

For skin wounds/non-intact skin exposures:

- do not squeeze wounds to express blood[1]
- wash with soap and water to remove any blood or body fluid[1]
- undertake appropriate clinical care of wounds.

If clothing is contaminated, remove clothing and shower if necessary.

When water is not available, use of non-water cleanser or antiseptic should replace the use of soap and water for washing intact skin or cuts or punctures of the skin. Application of topical antiseptics such as chlorhexidine to the wound site has not been shown to reduce the risk of transmission, however, their use is not contraindicated.

4.2.2 Relief from duty

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 promptly. After reporting the incident, the exposed person should be released from duty as soon as possible so that an immediate risk assessment can be performed.

4.3 Risk assessment

The following should be assessed and documented by an appropriately trained person as soon as possible after every incident of occupational exposure:

- information about the exposure
- date and time of the exposure
- type of exposure including site, blood, or body fluid involved (see Table 2), first aid employed
- the nature and extent of the injury
- the nature of the item that caused the injury e.g. the gauge of the needle
- the nature of the body fluids involved
- the volume of blood and body substances to which the healthcare worker was exposed (refer to Table 2)
- information about the source person
- the BBV status of the source individual
- demographic factors associated with an increased risk of infection with a BBV^^
- information about the exposed person
- the status of the exposed person concerning BBVs, including vaccination
- current pregnancy status, pregnancy risk, and current lactation
- medical history.

A risk assessment should be conducted based on 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 2, referring to relevant specialist practitioners as required.

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.

^^Demographic factors associated with an increased risk of infection differ for each BBV. Such demographic factors may be particularly important when source patient testing for BBVs is not possible or feasible. Refer to relevant specialist practitioners as required, and the appropriate clinical guidelines:

- B Positive: Hepatitis B for primary care
- Australian recommendations for the management of hepatitis C virus infection: a consensus statement (2022)
- HIV management in Australasia: A guide for clinical care
- Post-exposure prophylaxis after non-occupational and occupational exposure to HIV: Australian national guidelines (third edition)

Table 2 – Body fluids and risk for BBV transmission

Level of risk	Body fluid
Infectious / potentially infectious for BBV[1,3]	any visibly bloody body fluids blood amniotic fluid breastmilk cerebrospinal fluid pericardial fluid peritoneal fluid pleural fluid pre-seminal fluid semen synovial fluid vaginal fluid
Not considered infectious for BBV[1,3,4] **(unless visibly bloody)**	faeces nasal secretions saliva sputum sweat tears urine vomitus

4.3.1 Risk assessment: the exposure incident

Using the information in Tables 2&3, assess the exposure incident to determine whether there has been a definite exposure, possible exposure, or no exposure to blood or body fluids associated with a risk of transmission of a BBV. Follow the recommended actions for each exposure classification.

Table 3: Exposure classification

Exposure Classification	Injury type and examples	Recommended actions
Definite exposure to blood or body fluids associated with a risk of transmission of BBV	• injection of a large volume of blood/body fluid (>1mL) • parenteral exposure to laboratory specimens containing high titre of virus • any skin penetrating injury e.g. – with a needle contaminated with blood or body fluid – which causes bleeding and is produced by an instrument that is visibly contaminated with blood or body fluid – mucous membrane or conjunctival contact with blood or body fluid – human bite or scratch with exposure to blood or other body fluids infectious for BBV • non-intact skin directly exposed to 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 above	• immediately identify the source individual (if known) and undertake baseline testing • undertake baseline screening of the exposed person • provide follow-up as per 4.5 Post-exposure management of the exposed person section • seek advice from the relevant specialist practitioners as required

Exposure Classification	Injury type and examples	Recommended actions
Possible exposure to blood or body fluids associated with a risk of transmission of BBV	• 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 used on a patient but not considered to be contaminated with blood or body fluid • non-intact skin directly exposed to a body fluid not associated with a risk of transmission of BBV with no trace of blood e.g. urine, faeces, nasal secretions, saliva, sputum, sweat, tears, or vomitus • human bite with no blood exposure (e.g. saliva with no visible blood, bite without broken skin)	• undertake baseline screening of the exposed person, as a minimum • assess risk using further information about the source person and the exposed person • source testing and further follow-up may be indicated based on risk assessment • assess for risk of tetanus exposure (refer to the Australian Immunisation Handbook) • incident reporting documentation and the possibility of counselling (e.g. by employee assistance services) may still be required • provide follow-up as per 4.5 Post-exposure management of the exposed person section
Not a body fluid exposure	• intact skin visibly exposed to blood or body fluid • needlestick with a non-contaminated needle or sharp (sterile/not used on a patient) • skin not breached	• 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, to allow facilities to identify all causes of needlestick injury to facilitate appropriate risk management

4.4 Baseline testing

4.4.1 The source patient

4.4.1.1 BBV status

Assess the HIV, HBV, and HCV status of the source, to adequately determine risk to the exposed person. This is important in all cases of definite exposure (see Table 3).

If the status of the source individual is unknown at the time of the exposure, undertake baseline testing to determine the source's infectious status. In regional and rural areas consultation with the laboratory is recommended to ensure timely results are available.

Baseline testing for the source patient is:

- HIV antigen/antibody (HIV Ag/Ab)*
- HBV surface antigen (HBsAg)
- HCV antibody (anti-HCV)**.

*If the source patient is known to be HIV positive, or a positive HIV result is found on screening, HIV viral load testing is indicated.[1]

**If the source patient is known to be positive for HCV, or a positive anti-HCV result is found on screening, current infection with HCV should be confirmed with PCR testing.[5]

Discuss tests, obtain informed consent, and convey the results to the source, for HIV, HBV, and HCV tests. Advice around informed consent and conveying test results for BBV is available at the ASHM Testing Portal. Confidentiality should be maintained, not only for the source individual, but also regarding the exposure incident and the exposed person's identity.

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

4.4.2 Unknown source

If the exposure source is unknown or cannot be tested, use available information to assess the likelihood of transmission of HBV, HCV, or HIV. This includes information about where and under what circumstances the exposure occurred, to determine the likelihood of transmission of HBV, HCV, or HIV. Certain situations, as well as the type of exposure, might suggest an increased or decreased risk. If the source patient is known but cannot be tested, an important consideration is the prevalence of HBV, HCV, or HIV in the population group of the source patient.

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. Examples of instances where HIV PEP may be considered in a case with an unknown source may be the incidence of deep trauma or injection of blood.[1]

The exposed person should have follow-up testing for HBV, HCV, and HIV when the source is unknown or unable to be tested.

Refer to Post-exposure prophy4laxis after non-occupational and occupational exposure to HIV: Australian national guidelines (third edition) for further information.

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

4.4.3 Neonatal and paediatric considerations

When a neonate or paediatric patient is the source patient for an occupational exposure, it is important to consider the following:

- Consent should be obtained from the parent, carer or legal guardian, and where possible and age appropriate, the child.
- In neonatal source injuries, the mother's blood may be considered for sampling instead of the neonate's blood as an indicator of risk.
- Whenever possible add baseline source testing to routine blood samples that have been recently taken or are due to be taken in the 24–48 hours post-injury, to reduce the amount of blood collection required from neonates and paediatric patients. Parents and carers are more likely to provide consent for testing when no additional blood collections are required.
- Check whether blood-borne virus screening has been obtained previously. If no incidents have occurred to expose the child to the risk of transmission of a BBV since previous screening, a decision may be taken that no additional source testing is required.
- Once it has been established that a blood or body fluid exposure has occurred, a full risk assessment should be undertaken on the paediatric source patient to determine whether source blood testing is required. A risk assessment on the child may include:
  - neonates/breastfed: consider any risk factors for the mother
  - paediatric patients:
    - hepatitis B immunisation history
    - if the child was born overseas and which country
    - if there is likely to be injecting equipment at home
    - sexual activity (and/or abuse)
    - personal drug use
    - history of homelessness
    - babies born to HIV-positive mothers will be IgG HIV antibody positive for at least the first 3 months of life but will not necessarily develop HIV infection. This is an important factor for post-test counselling for the exposed person and in consideration of prescribing HIV PEP.

4.4.4 The exposed person

In all cases of exposure, arrange baseline testing of the exposed person.

Baseline testing for the exposed person:

- HIV Ag/Ab
- HBV surface antibody (anti-HBs)[#]
- anti-HCV

Discuss tests, obtain informed consent, and convey test results to the exposed person (refer to ASHM Testing Portal for advice). Confidentiality should be maintained, not only for the exposed person, but also regarding the current exposure or injury. Serum should be stored for at least 12 months to enable parallel testing if necessary.

[#]If the exposed person has evidence of current or previous immunity to HBV (anti-HBs ≥10 IU/L ever documented following a complete HBV vaccination course, or past cleared infection in an immunocompetent individual) baseline testing of anti-HBs is not required. Do not delay baseline testing if historical results are not immediately available.

4.4.5 HIV point of care testing (PoCT)

PoCT, in conjunction with comprehensive risk assessment, may be used as a presumptive screening tool that may contribute to the decision to prescribe PEP. The relevance of PoCT in the setting of an occupational exposure is to screen for HIV status before standard laboratory test results becoming available, to inform the commencement of PEP as early following exposure as possible. If used, PoCT should not replace standard laboratory HIV tests, PoCT should be followed by standard laboratory testing. The likelihood of the source being recently exposed to HIV, within the window period, should also be considered.

PoCT of the source may be considered in the following circumstances:

- the HIV status of the source is unknown
- the source is assessed as at risk of having HIV.

If PoCT is used, informed consent should be obtained as per standard laboratory HIV tests.

HCWs should always seek assistance for risk assessment, testing, and follow-up for occupational exposures. HCWs should never order or interpret their own tests (particularly PoCT).

Additional information about HIV testing, including PoCT, can be found in HIV Management in Australasia: A guideline for clinical care.

4.5 Post-exposure management of the exposed person

Post-exposure management of the exposed person will depend on the outcomes of the risk assessment and the results of baseline testing. Once all information from the risk assessment and baseline testing is available, a plan for post-exposure management should be formulated, documented, and discussed with the exposed person, and informed consent obtained for this management plan. Refer to Table 1: Quick reference summary of actions and Table 6. Exposed person laboratory assessment for guidance on decision-making for post-exposure management.

This section outlines information for each BBV separately: HIV, HBV, and HCV. Post-exposure prophylaxis (PEP) is outlined first, followed by BBV-specific recommendations.

The following management is recommended for all exposures to BBV:

- Inform of the importance, timing, and method of follow-up.[1]
- The patient/client care responsibilities of an exposed person do not need to be modified based solely on BBV exposure, to prevent transmission to patients.
- Healthcare workers performing exposure-prone procedures who are found to be HIV, HBV, or HCV positive should be managed in line with the advice found here: Management of healthcare workers living with a blood-borne virus.
- If the exposed person becomes positive for HIV, HBV, or HCV they should be referred to an appropriate specialist for clinical management.
- Inform of the potential risk of BBV transmission to others following a significant exposure. 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 sperm until the final blood test is completed
  - risk reduction practices including practicing safer sex (barrier contraception) and avoiding pregnancy until the final blood test is completed
  - seek expert medical advice regarding breastfeeding and/or pregnancy.
- Inform the exposed person of the symptoms of the relevant BBV/s, and advise to seek urgent specialist advice if any of the symptoms appear[1]:
  - HIV seroconversion: fever, sore throat, night sweats, lymphadenopathy, muscle aches and pains, rash[1]
  - HBV: jaundice, malaise, abdominal pain, dark urine, clay-coloured stool[6]
  - HCV: fever, fatigue, decreased appetite, nausea, vomiting, abdominal pain, dark urine, pale faeces, joint pain, and jaundice.[1]
- Follow local procedures for reporting and surveillance of occupational exposures. This may include reporting using RiskMan. Incidents where a person is exposed to a BBV may be classified under Work health and safety laws as a *serious injury or illness* or a *dangerous incident* and therefore required to be notified to Workplace Health and Safety Queensland.

If source testing is negative (for HIV, HCV, and HBV) or risk assessment determines there has been no exposure to a BBV, post-exposure management in terms of PEP and follow-up serological testing is not required. Documentation and follow-up as a workplace incident are always required. Always offer counselling and referral to employee assistance services and determine whether education or system improvement to prevent further incidents is required.

4.5.1 HIV-specific post-exposure management

4.5.1.1 HIV post-exposure prophylaxis (PEP)

For decision-making around HIV PEP and related clinical management, it is recommended to follow the Post-Exposure Prophylaxis after Non-Occupational and Occupational exposure to HIV, Australian National Guidelines (Third edition).

When indicated, PEP should be prescribed and started as soon as possible after the exposure, ideally within 24 hours and no later than 72 hours.[1]

HIV PEP starter packs are available in most Queensland Health emergency departments. These starter packs contain enough PEP medication for 3 days.

Re-evaluation of the exposed person by a specialist should occur within 72 hours postexposure before a 28-day course of PEP is prescribed. It is the responsibility of the prescriber of the starter pack to ensure a timely follow-up appointment is booked with the appropriate service/clinic.

4.5.1.2 Laboratory assessment

The exposed person should be tested for HIV Ag/Ab at baseline, 4-6 weeks, and 12 weeks.

Other follow-up testing including urea and electrolytes (EUC, including eGFR), and pregnancy testing may be indicated depending on whether PEP is prescribed and the clinical assessment. Refer to Post-Exposure Prophylaxis after Non-Occupational and Occupational exposure to HIV, Australian National Guidelines (Third edition).

If HIV seroconversion is detected in the exposed person, in addition to appropriate clinical and psychosocial management, the person should be evaluated according to the Queensland Health guidance for management of a healthcare worker living with a blood-borne virus.

4.5.1.3 Risk of transmission following exposure to HIV

The information in Table 4 below may be useful in post-exposure counselling.

Table 4 - Estimated risk of HIV transmission by exposure

Exposure	Risk
Intact skin exposure	Negligible
Human bite	Negligible
Community needle stick from a discarded needle	Negligible
Mucous membrane/non-intact skin	1:1000
Occupational needle stick injury	1:440

The information in this table is taken from Table 1 of the ASHM PEP Guidelines.

Note: These figures are estimates derived from cohort and modelling studies, where HIV status, treatment status, and HIV viral load of source were either self-reported or unknown.[1]

4.5.1.4 Hepatitis B virus (HBV)-specific post-exposure management

If the exposed person has evidence of current or previous immunity to HBV (anti-HBs ≥10 IU/L ever documented following a complete HBV vaccination course, or past cleared infection in an immunocompetent individual) no post-exposure management for HBV is required.[1]

4.5.1.5 HBV post-exposure prophylaxis

HBV PEP is warranted if the exposed person is **not immune** to HBV (negative for hepatitis B surface antibody (anti-HBs)) and the source patient is either positive for hepatitis B surface antigen, unknown, or unable to be tested rapidly.[7]

For HBV PEP, follow the recommendations found in the post-exposure vaccine and immunoglobulin section in the hepatitis B chapter of the Australian Immunisation Handbook. For a percutaneous, ocular, or mucosal exposure, HBV PEP should be administered within 72 hours of exposure.[7]

Table 5 - HBV post-exposure prophylaxis

Exposed person hepatitis B immune status		Source patient HBsAg status	
		HBsAg positive or unknown	**HBsAg negative (confirmed on baseline)**
	Not immune **(No prior history of anti-HBs ≥ 10 IU/L)** **(This includes vaccine non-responders, and unvaccinated persons)**	Consider HBV prophylaxis HBV prophylaxis is required for percutaneous, ocular, or mucous membrane exposures: • Hepatitis B immunoglobulin to be administered within 72 hours of exposure • Also commence HBV vaccine course as soon as possible Refer to the Australian Immunisation Handbook for further details	No post-exposure prophylaxis for HBV required Refer to the Australian Immunisation Handbook for appropriate vaccination follow up recommendations
	Immune **(Current or previous anti-HBs ≥ 10 IU/L following a complete course of vaccination or positive anti-HBc)**	No post-exposure prophylaxis for HBV required	

4.5.1.6 Laboratory assessment

The exposed person should be tested at baseline for HBV surface antibody (anti-HBs).

The exposed person should be tested at 12 weeks[1] and 6 months[8] for HBsAg. For exposed persons who were given the HBV vaccine post-exposure, testing to ensure post-vaccination immunity is required. To measure this, anti-HBs should be re-tested 1 month after the final vaccine dose or 6 months after administration of hepatitis B immunoglobulin (HBIG) (whichever is later).[8]

Healthcare workers with a documented history of a completed primary course of HBV vaccination who remain seronegative for anti-HBs (anti-HBs <10 IU/L) should have their HBV vaccination managed following recommendations in the current version of The Australian Immunisation Handbook. This may involve investigation for HBV carriage, further doses of vaccine, informing the worker of the ongoing need for hepatitis B immunoglobulin as soon as possible following parenteral exposure to hepatitis B.

Refer to Post-Exposure Prophylaxis after Non-Occupational and Occupational exposure to HIV, Australian National Guidelines (Third edition), B Positive: Hepatitis B for primary care and Decision Making In Hepatitis B guide

4.5.2 Hepatitis C virus (HCV)-specific post-exposure management

There is currently no evidence to support any mode of PEP following exposure to HCV.[1] However, the exposed person should be informed that in the event of infection with HCV, referral is available for highly effective treatment for HCV, with the goal of successful viral eradication (cure).[5]

4.5.2.1 Laboratory assessment

The exposed person should be tested at baseline for anti-HCV[10], 6-12 weeks for HCV PCR[1,10], and re-tested for anti-HCV at 12 weeks.[1,10]

HCV PCR is recommended between 6 weeks and 12 weeks: an early result may provide reassurance to the exposed person[10], particularly in cases of higher-risk exposure. If HCV PCR is tested earlier than 12 weeks, it must be repeated at 12 weeks when the anti-HCV test is done. In December 2024, Pathology Queensland ceased provision of the HCV antigen test due to a change in testing platforms. HCV PCR is provided as an alternative to HCV antigen when determining current (chronic) HCV infection.

Refer to the National Hepatitis C Testing Policy and the Post-Exposure Prophylaxis after Non-Occupational and Occupational exposure to HIV, Australian National Guidelines (Third edition).

4.5.2.2 Summary of laboratory assessment recommendations for exposed person

Table 6 is a summary of the laboratory assessment recommendations in the previous section.

The exposed person should have follow-up testing undertaken for the BBV/s to which they have been exposed. Follow-up testing of BBVs for which the source patient tested negative on baseline testing is not required.

If the source is unknown or unable to be tested, complete follow-up testing of the exposed person for HCV and HIV. For an unknown source exposure, only complete follow-up testing for HBV if the exposed person is not immune. Refer to the above section for further information and PEP recommendations.

Table 6. Exposed person laboratory assessment

<table>
<tr><th></th><th colspan="5">Exposed person testing</th></tr>
<tr><th>Source patient BBV</th><th>Baseline
(same for all)</th><th>6 weeks</th><th>12 weeks</th><th>6 months</th><th>≥6 months after HBIG and 1-2 months after final dose of HBV vaccine</th></tr>
<tr><td>HIV positive or unknown</td><td rowspan="4">HIV Ag/Ab
anti-HBs
anti-HCV</td><td>HIV Ag/Ab*</td><td>HIV Ag/Ab*</td><td>Not required</td><td>Not applicable</td></tr>
<tr><td>Hepatitis B positive or unknown, and exposed person is not immune</td><td>Not required</td><td>HBsAg</td><td>HBsAg</td><td>anti-HBs</td></tr>
<tr><td>Hepatitis C positive or unknown</td><td>HCV PCR^</td><td>HCV PCR
anti-HCV</td><td>Not required</td><td>Not applicable</td></tr>
<tr><td>Negative for HBV, HCV & HIV on baseline testing</td><td colspan="4">No follow-up testing required</td></tr>
</table>

Other follow-up testing may be indicated depending on the clinical assessment.[1,9,10] Refer to the BBV-specific sections of this guideline, and other BBV-specific guidelines, and seek expert clinical advice.

* EUC including GFR, and pregnancy testing may be required, depending on clinical assessment and whether PEP is being taken.

^HCV PCR is recommended between 6-12 weeks. Testing early at 6 weeks is optional and may provide reassurance to the exposed person. If HCV PCR testing is done earlier than 12 weeks post exposure, it must be repeated at 12 weeks.

4.6 When the exposed person is a patient

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

- Follow the processes outlined in the Immediate care of the exposed person section.
- The exposure to blood and body fluids should be disclosed to the patient and/or their guardian as soon as possible after the exposure. For Queensland Health facilities, staff should follow local open disclosure procedures.
- The patient's treating medical team should be informed of the blood or body fluid exposure as soon as possible after the exposure.
- Undertake a risk assessment (refer to the Risk assessment section). 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.
- Document the incident in the patient's confidential medical record.
- Report the incident through the appropriate patient incident management system. For Queensland Health facilities, staff should follow the processes outlined in the Best practice guide to clinical incident management.
- All staff involved should maintain confidentiality, for both the exposed patient and the source patient or healthcare worker.
- 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 a patient is exposed to the blood or body fluids of a healthcare worker with a BBV, also refer to the recommendations in the Australian national guidelines for the management of healthcare workers living with blood-borne viruses and healthcare workers who perform exposure-prone procedures at risk of exposure to blood-borne viruses.
- If prophylaxis is indicated, the processes outlined in the relevant sections of this guideline should be followed.

5 References

1. *ASHM. Post-Exposure Prophylaxis (PEP) after non-occupational and occupational exposure to HIV: Australian National Guidelines (Third edition) [Internet]. ASHM Health. 2023 [cited 2023 Oct 23]. Available from: https://pep.guidelines.org.au/*
2. *Shenoy ES, Weber DJ. Occupational Health Update: Evaluation and Management of Exposures and Postexposure Prophylaxis. Infect Clin N Am. 2021;35:735–54.*
3. *Kuhar DT, Henderson DK, Struble KA, Heneine W, Thomas V, Cheever LW, et al. Updated US Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis. Infect Control Hosp Epidemiol. 2013;34(9):875–92.*
4. *Pintilie H, Brook G. Commentary: A review of risk of hepatitis B and C transmission through biting or spitting. J Viral Hepat. 2018;25(12):1423–8.*
5. *Hepatitis C Virus Infection Consensus Statement Working Group. Australian recommendations for the management of hepatitis C infection: A consensus statement (2022) [Internet]. Gastroenterological Society of Australia; 2022 [cited 2023 Nov 6]. Available from: https://www.hepcguidelines.org.au/*
6. *ASHM. Australasian contact tracing guidelines [Internet]. [cited 2023 Nov 10]. Available from: https://contacttracing.ashm.org.au/*
7. *Australian Technical Advisory Group on Immunisation (ATAGI). Australian Immunisation Handbook [Internet]. Australian Government Department of Health and Aged Care, Canberra; 2022. Available from: The Australian Immunisation Handbook (health.gov.au)*
8. *CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Postexposure Management [Internet] 2013. [cited 2023 Oct 27]. Available from: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6210a1.htm*
9. *ASHM. B positive: Hepatitis B for primary care (Fourth edition) [Internet]. 2022 [cited 2023 Nov 10]. Available from: https://hepatitisb.org.au/*
10. *National Hepatitis C Testing Policy Expert Reference Committee. National Hepatitis C Testing Policy [Internet]. 2020 [cited 2023 Nov 10]. Available from: https://testingportal.ashm.org.au/national-hcv-testing-policy/indications-for-hcv-testing/*
11. *Australian Government Department of Health and Aged Care. 2020 [cited 2023 Nov 20]. CDNA National Guidelines – Healthcare Workers Living with Blood Borne Viruses / Perform Exposure Prone Procedures at Risk of Exposure to Blood Borne Viruses. Available from: https://www.health.gov.au/resources/publications/cdna-national-guidelines-healthcare-workers-living-with-blood-borne-viruses-perform-exposure-prone-procedures-at-risk-of-exposure-to-blood-borne-viruses?language=en*

6 Definitions of terms used in this guideline

Term	Definition / Explanation / Details
anti-HBs	Hepatitis B surface antibody
Blood-borne virus (BBV)	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).
Body fluids	Body fluids considered infectious or potentially infectious for BBV are: blood, any visibly bloody body fluids, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, breastmilk, semen, pre-seminal fluid, vaginal secretions, and amniotic fluid.[1,3] The following body fluids are not considered potentially infectious unless they are visibly bloody: faeces, nasal secretions, saliva[4], sputum, sweat, tears, urine, and vomitus.[1,3]
Clean needlestick injuries	An injury with a sharp device or item that has had no contact with blood/body fluids.
Exposure Prone Procedure (EPP)	EPPs are procedures where there is a risk of injury to the HCW resulting in exposure of the patient's open tissues to the blood of the HCW. These procedures include those where the HCW's hands (whether gloved or not) may be in contact with sharp instruments, needle tips, or sharp tissues (spicules of bone or teeth) inside a patient's open body cavity, wound, or confined anatomical space where the hands or fingertips may not be completely visible at all times.[11]
Exposed Person	The person who sustained the occupational exposure.
HBeAg	Hepatitis B e antigen
HBsAg	Hepatitis B surface antigen
HCV RNA	Hepatitis C virus ribonucleic acid (PCR) (replaces HCV antigen test as at December 2024, see section 4.5.2)
Healthcare worker	Any worker performing any role within a healthcare setting. This includes employees, contractors, volunteers and students. It includes clinical and non-clinical workers.
LFT	Liver Function Test
MSM	Men who have sex with men

Term	Definition / Explanation / Details
Non-occupational exposure	Significant exposure to blood or other body substance (e.g. semen, vaginal secretions) that is not work-related e.g. unprotected sexual contact, sharing injection equipment, accidental needlestick, and other injuries (e.g. physical and sexual abuse).
Occupational exposure	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 health care 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.
Sharp	An object or device having sharp points, protuberances, or cutting edges capable of causing a penetrating injury to humans. This includes but is not limited to hypodermic, intravenous, or other medical needles, Pasteur pipettes, broken medication ampoules, disposable dental picks and drill bits, scalpel blades, razor blades, lancets, scissors, glass slides, and broken laboratory glass.
Serological Testing	Laboratory tests are done on blood serum to measure antibodies against antigens of the micro-organism thought to be causing the infection e.g. HBsAg.
Source (individual)	A person from whom blood or body fluids originated.
Window Period	The time from exposure to seroconversion when the source may be asymptomatic or experiencing seroconversion illness.

7 Approval and contact

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Approval date:	11 December 2024

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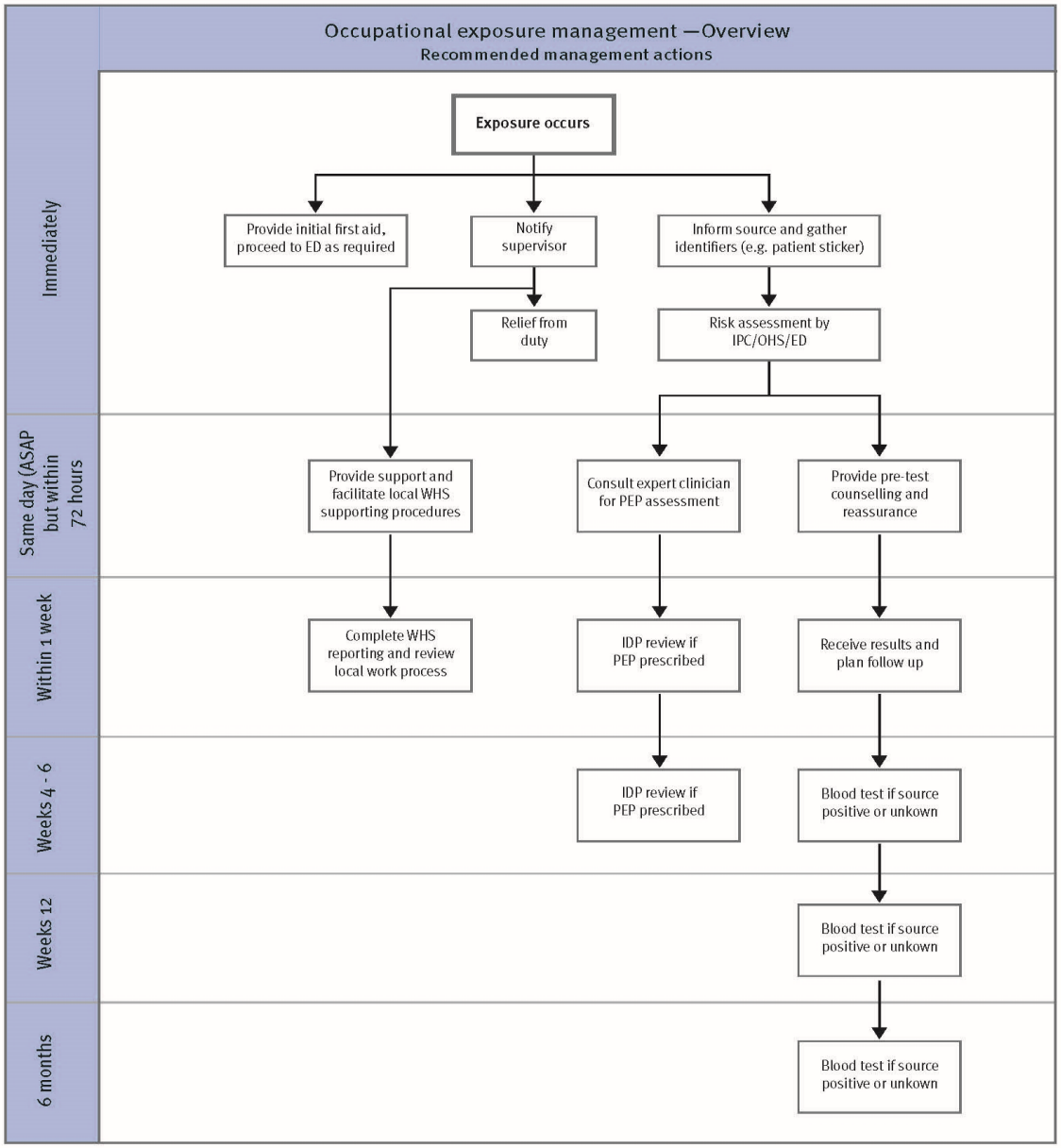
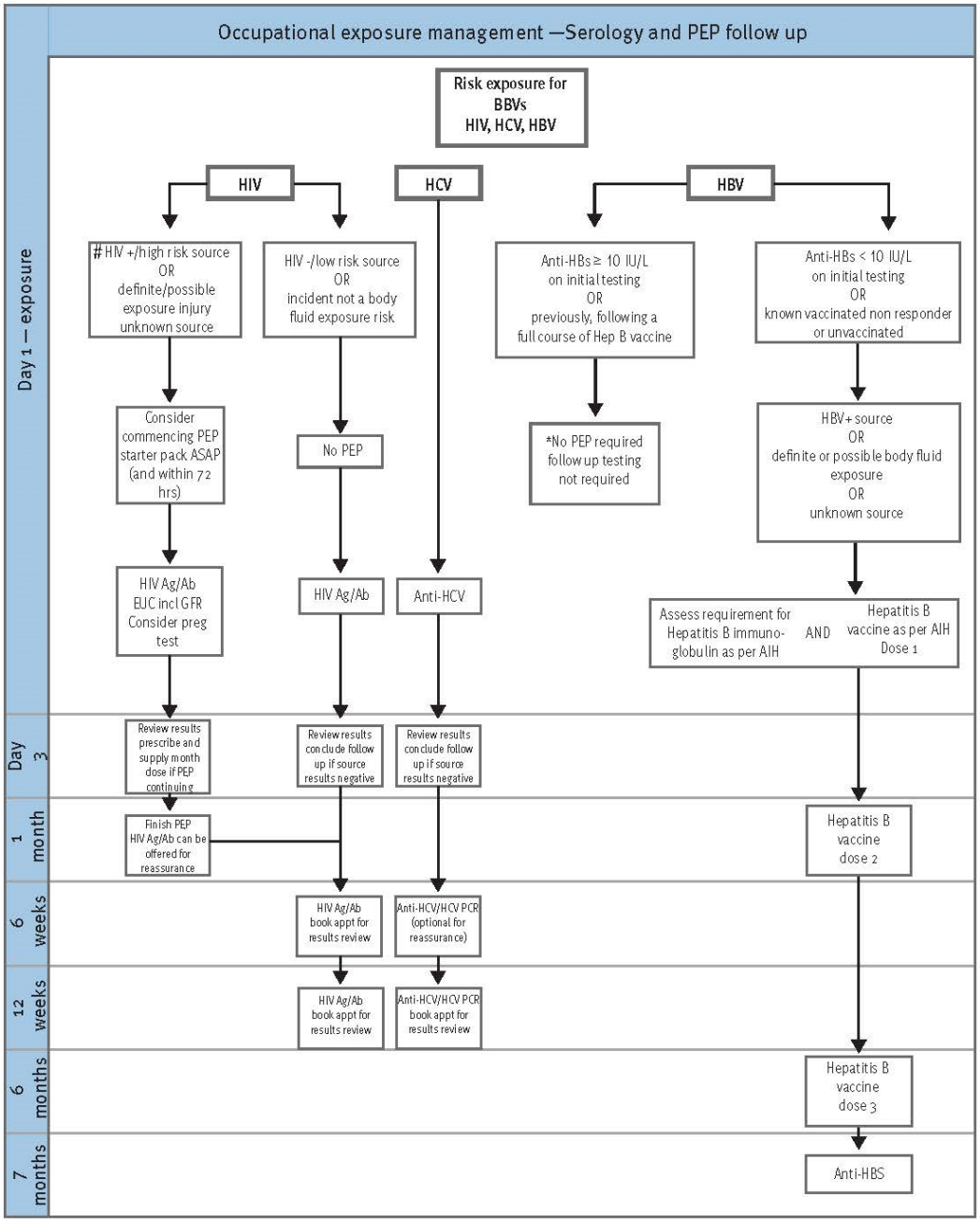
8 Version control

Version	Date	Prepared by	Comments / reason for update
1.0			Rescinded [QH-IMP-321-8:2012]
2.0	8 April 2013		
3.0	26 June 2014		
4.0	25 November 2016	Paul Smith	Periodic review. Included information about HIV PoCT.
5.0	November 2023 – August 2024	Queensland Infection Prevention and Control Unit (QIPCU)	Periodic review. Update of recommendations in line with updated national guidance. Major overhaul of document content and layout. Changes to recommendations for timing of post-exposure testing. Removal of reference to expert advisory network.
5.1	December 2024	QIPCU – Paul Simpson	Minor change: Removal of reference to HCV antigen testing, as this is no longer provided by Pathology Queensland.

Appendix 1 – Occupational exposure management flow chart – overview



Appendix 2 – Occupational exposure management flow chart – serology and PEP follow up



Post-Exposure Prophylaxis after non-occupational and occupational exposure to HIV Australian National Guidelines

* Fully documented complete course of hepatitis B vaccine in accordance with the recommendations of the AIH

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