**Risk of exposure to HIV**

Southern Africa has a very high background prevalence of HIV infection, making exposure risk both inside and outside the occupational setting high. The approach to occupational, sexual and other forms of exposure (bites, assaults, trauma, injecting drug use, etc) is similar regarding routine baseline and follow-up investigations.

**Risk of Transmission of HIV**

The risk of occupational transmission is low. Average risk after needlestick injury (with no prophylaxis) = 3/1000 (0.3%).

**Initial actions after exposure**

Immediate cleansing of the exposed site if possible. Wash with soap and water or clean with antiseptic such as an alcohol-based hand hygiene agent. Other antiseptics (e.g. chlorhexidine) also inactivate HIV. Irrigate mucosal surfaces with water or saline.

Ideally post exposure prophylaxis (PEP) should be initiated within 1 to 2 hours (or sooner) after exposure to the body fluids from an HIV-infected person. It is still offered up to 72 hours after exposure and in rare cases up to 7 days post exposure.

**Investigating the Source individual**

<table>
<thead>
<tr>
<th>Routine Resistance Testing of Source is not recommended</th>
</tr>
</thead>
</table>

**IF SOURCE IS POSITIVE DO:**
- Post Test Counselling
- Treat / Refer

**IF SOURCE IS ON ARVs DO**
- HIV RNA PCR (Viral Load)
- If elevated: Consider Genotyping
- Do not delay the start of PEP

**IF SOURCE IS NEGATIVE FOR Hep C, EXPOSED PERSON DOES NOT HAVE TO BE FOLLOWED UP FOR Hep C**
- Testing of Needles, Sharps or other Samples Implicated in the Exposure is Not Indicated:
  - Unreliable
  - Further Risk to Health Care Worker

**ON SOURCE**
(As soon as possible)
1. HIV ELISA*
2. HBsAg ELISA
3. Hep C RNA

**IF SOURCE IS POSITIVE DO:**
- Post Test Counselling
- Treat / Refer

**IF SOURCE CANNOT BE TESTED FOR WHATSOEVER REASON:**
- Default position is "The Source is Seropositive for All Blood Borne Pathogens"*

**IF SOURCE IS NEGATIVE FOR Hep C, EXPOSED PERSON DOES NOT HAVE TO BE FOLLOWED UP FOR Hep C**
- Give Consent (e.g. Unconscious), follow National Guidelines (e.g. Spouse may give consent)

* If negative, enquire about possible exposure in the past 3-4 weeks. If the possibility exists, handle the exposed person as potentially exposed to a positive sample.

**Investigating the Exposed individual**

*Recommendation:* Any investigation on blood of the exposed person should be requested and the sample drawn by an independent third party (in case of future compensation claims)

**On EXPOSED (As soon as possible)**
1. HIV ELISA
2. Hepatitis B (HBsAg, HBsAb, IgG anti-HBcore)
3. Hep C ELISA

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**THE PATHCARE NEWS**

Laboratory investigations for possible occupational or non-occupational exposure to HIV and other blood borne pathogens
HIV

**HIV Testing**

- Offer pre-and post-test counselling
- Document the result of the HIV ELISA
  (medico-legal or occupational claims implications)
  A positive result on one platform should be confirmed on another platform (as per standard guidelines)
- Do follow-up HIV ELISA tests at 6 weeks, 3 months and 6 months
- Do NOT do HIV viral load or PCR in the setting of post-exposure testing

@ A negative HIV ELISA at 6 weeks following exposure (without an interim re-exposure) will rule out HIV infection in the majority of cases. The 3 and 6 month follow-up testing is scheduled to detect the delayed seroconversion cases (which is very unusual). Routine testing of an exposed person at 12 months is not recommended as seroconversion after 6 months is very rare. However, exposed individuals should be properly counselled in this respect and testing provided if the individual requests it.

# Quantitative viral loads may yield false-positive results, and may cause substantial anxiety. The time points after exposure when HIV PCR and viral loads become positive (should infection occur) may vary. Furthermore, PEP can delay infection and a negative PCR or viral load performed early after exposure does not exclude the possibility of HIV infection.

Seroconversion on PEP is extremely rare. Symptoms consistent with primary HIV infection (often described as a mononucleosis-like syndrome) may include fever, lymphadenopathy, sore throat, mucocutaneous lesions, myalgia/arthralgia, diarrhea, headache, nausea/vomiting and weight loss. The usual time from HIV exposure to the development of symptoms is two to four weeks, although incubation periods as long as 10 months have been seen. HIV viral load testing should be performed in these patients (with suspected acute retroviral syndrome) to make the diagnoses.

Hepatitis B

**Hepatitis B testing**

- If exposed person has had natural HBV infection or has been vaccinated with known good response, then: NO investigation
  NO therapeutic intervention after exposure
- If source is negative for HBsAg and exposed person not vaccinated or does not know vaccination/antibody status, then refer for testing and vaccination for future protection.
- If source is HBsAg positive, see Table 1 for management of exposed person.
### Table 1: Management of person exposed to a HBsAg-positive or unknown source

<table>
<thead>
<tr>
<th>Vaccinated status of exposed person</th>
<th>ACTIONS TO BE TAKEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous vaccination and known responder</td>
<td>Anti-HBs</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Not vaccinated</td>
<td>Do HBsAb. If anti-HBs &gt; 10 mUI/mL, no treatment</td>
</tr>
<tr>
<td>Incomplete vaccination or unsure</td>
<td>Do HBsAb. If anti-HBs &gt; 10 mUI/mL, no treatment</td>
</tr>
<tr>
<td>Vaccinated but unknown response</td>
<td>Do HBsAb. If anti-HBs &gt; 10 mUI/mL, no treatment</td>
</tr>
<tr>
<td>Non-responder to primary vaccination</td>
<td>No</td>
</tr>
<tr>
<td>Previously vaccinated with 4 doses or 2 completed vaccine series but non-responder</td>
<td>1 dose HBig stat repeated after one month</td>
</tr>
</tbody>
</table>

### Hepatitis C

The risk for HCV infection after a needlestick or sharps exposure to HCV-positive blood, is about 1.8%. There is no prophylactic treatment currently available for a person exposed to the blood of a patient with hepatitis C virus infection. Persons experiencing a needle stick injury from a known or high-risk hepatitis C source should be monitored closely for acute hepatitis symptoms. Symptomatic patients and patients with detectable levels of HCV RNA in serum should be referred to a specialist for assessment and possible treatment.

Health Care Workers exposed to HCV should be tested as soon as possible after exposure for the antibody to HCV and if negative, test again at 3 and 6 months (if RNA testing is not used at earlier stage). Baseline liver function testing should also be done and be repeated at 3 and 6 months.
Faecal calprotectin (FC) has been shown to be a valuable tool in distinguishing between inflammatory bowel disease (IBD) and irritable bowel syndrome (IBS). It is a cytosolic protein present in neutrophils and its concentration in stool samples can indicate bowel inflammation. FC can be measured on any random stool sample with no requirement for a 24-hour stool collection. If a delay of >24 hours is anticipated, the stool sample should be frozen.

**Summary**

- FC can be used in both adult and pediatric populations.
- Levels in inactive IBD in children can be very high, exceeding the measuring range.
- Serial results need to be measured using the same instrument as the test is not standardized.
- Cut-points depend on the assay used and are indicated on the laboratory report.
- The treatment and compliance need to be reviewed, and FC can predict relapse in patients with IBD.
- Finally, FC levels correlate with disease severity in IBD and can be used as a surrogate marker of successful treatment outcome in patients with IBD.

**Counselling recommendations**

<table>
<thead>
<tr>
<th>BLOOD BORNE PATHOGEN</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>Should be advised to practice safer sex for a 6-month period and advise sexual partner(s) of the potential risk.</td>
</tr>
<tr>
<td></td>
<td>Pregnancy should be avoided for 6 months.</td>
</tr>
<tr>
<td></td>
<td>Breastfeeding should be stopped (consult an infectious diseases physician).</td>
</tr>
<tr>
<td></td>
<td>Do not donate blood, semen, organs or tissue for 6 months.</td>
</tr>
<tr>
<td></td>
<td>Do not share razors, toothbrushes or needles.</td>
</tr>
<tr>
<td>HBV</td>
<td>Risk of HBV transmission to sexual partner(s) of persons recently exposed who were non-immune and now receiving HBIG and/or the HBV vaccine series is unknown.</td>
</tr>
<tr>
<td></td>
<td>May consider safer sexual practices and should discuss with their partner(s).</td>
</tr>
<tr>
<td></td>
<td>Do not donate blood, semen, organs or tissue for 6 months.</td>
</tr>
<tr>
<td></td>
<td>Do not share razors, toothbrushes or needles.</td>
</tr>
<tr>
<td>HCV</td>
<td>Risk of sexual transmission is low (0.1%). The exposed person should advise their sexual partner(s) of the potential risk.</td>
</tr>
<tr>
<td></td>
<td>Transmission from mother to infant is rare.</td>
</tr>
<tr>
<td></td>
<td>There is no known prophylaxis for HCV.</td>
</tr>
<tr>
<td></td>
<td>Do not donate blood, semen, organs or tissue for 6 months.</td>
</tr>
<tr>
<td></td>
<td>Do not share razors, toothbrushes or needles.</td>
</tr>
</tbody>
</table>

*All patients with current HCV infection as evidenced by a positive HCV RNA test result should be referred to a practitioner with expertise in assessment of liver disease severity and HCV treatment.*

Reference: www.cdc.gov/hepatitis