1. FIRST AID - immediately:
Remove contaminated clothes. Allow wound to bleed freely, wash thoroughly with soap and water. Thoroughly flush mucous membranes with water.

2. ENSURE TETANUS UP TO DATE (preferably as Tdap/Adacel™)
- Ensure tetanus up to date (preferably as Tdap/Adacel™) given as part of the routine childhood immunization. (Tdap i.e., Adacel™ is preferred for adults >18 yrs if not yet received an adult dose of pertussis)
- Tetanus immune globulin, given at a separate site from Td/Tdap (TIg available from local hospital blood bank)
- Yes, if > 10 years since last booster.
- Yes, if individuals are known to have a significant humoral immune deficiency state (e.g., HIV, agammaglobulinemia), since immune response to tetanus toxoid may be suboptimal.

3. ASSESS IF EXPOSURE OCCURRED
An exposure includes the following if involves blood, tissue or other potentially infectious body fluids, see chart below:
- Percutaneous – e.g. skin puncture or laceration by needle or sharp object
- Mucosal – splash to mucous membranes (e.g. eyes, nose, mouth)
- Cutaneous – contact through non intact skin (e.g. blood on open cut or dermatitis)
- Bites where skin is broken – risk to victim for HBV from saliva; risk for HCV and HIV only if saliva contains blood from oral lesion or injury; biter is also at risk if the bite drew blood

Not an exposure if:
- blood/bodily fluid onto intact skin, bites without broken/bleeding skin

4. LEVEL OF RISK:
1. Source - highest risk includes known positive - consider viral load/treatment; if status unknown consider risk factors (prevalence rates e.g., HIV 0.2% in Canada): injection drug user, men who have sex with men, sexual partner of known positive, multiple sexual partners, history of incarceration, tattoo/body piercing, from endemic country, recipient of blood transfusion in Canada before 1986 for HIV, 1990 for HCV and 1970 for HBV
2. Type – higher to lower: hollow-bore needle > solid needle - deep injury > superficial scratch/mucous membrane
3. Volume - more blood = higher risk
4. Time out of body - fresh blood = higher risk than dried blood (survival outside the body: HBV- at least 7 days; HCV - up to 3 weeks; HIV does not live long outside the body)

5. PROBABILITY OF TRANSMISSION FROM A POSITIVE SOURCE

6. SOURCE TESTING - Most efficient and effective way to obtain source testing is by VOLUNTARY CONSENT
- Exposed person or designate directly requests that the source be tested for blood-borne diseases
- Institutions setting – medical staff or occupational health workers can request on behalf of exposed person
- Physician orders source testing stat: HIV Ag/Ab, Anti-HCV, HBsAg (unless exposed person immune)
- Source provides consent for hospital or MD to release results to exposed person (document consent, exposed person’s contact information and process for communication of results)
- MD or designate provides exposed person with results of relevant serology testing

Source refuses + significant exposure: Emergency Service Workers- can submit application, Mandatory Blood Testing Act via the Ontario Ministry of Health https://www.ontario.ca/page/mandatory-blood-testing (within 30 days)
Hepatitis B titre
- HBIg - hospital blood bank, Hep B vaccine complete series - obtain via primary health care provider or Public Health

References:
1. Refer to a physician with a special interest in HIV to monitor drug tolerance, reassess need for PEP within 3-5 days

7. POST EXPOSURE BLOODWORK TESTING OF EXPOSED PERSON (can be arranged by primary health care provider)

<table>
<thead>
<tr>
<th>Baseline (pre-existing infection; Hep B immunity)</th>
<th>6 weeks</th>
<th>3 months</th>
<th>4 months</th>
<th>6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBsAg (infection) &amp; Anti-HBs titre if unvaccinated or titre unknown</td>
<td>Titrates 1-6 months after last dose of vaccine series</td>
<td>(if HBV was also given, wait 6 months to allow HBIg antibodies to wane)</td>
<td></td>
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</tr>
<tr>
<td>Anti-HCV ALT 95-99% sensitivity</td>
<td></td>
<td></td>
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<tr>
<td>Anti-HCV ALT</td>
<td></td>
<td></td>
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<tr>
<td>HCV RNA (PCR) (if high risk)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>HIV Ag/Ab combo screen</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>If PEP: ALT, AST, CBC, platelets, Bun, creatinine, HbcFG (females)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>HCV Ag/Ab earliest Ab detection</td>
<td></td>
<td></td>
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<tr>
<td>21 days</td>
<td></td>
<td></td>
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<tr>
<td>HBIg – protective level if anti-HBs &gt; 10 IU/L (positive titre)</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

7. POST EXPOSURE BLOODWORK TESTING OF EXPOSED PERSON

<table>
<thead>
<tr>
<th>Infected or High Risk Source</th>
<th>Determined vaccination status of exposed person</th>
<th>Uninfected or Low Risk Source</th>
<th>Determine vaccination status of exposed person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully vaccinated: Determine titre</td>
<td>If positive titre now or in past: No action required*</td>
<td>Unvacinated: Vaccinate</td>
<td>Fully vaccinated: Determine titre</td>
</tr>
<tr>
<td>If negative titre: give HBIg AND give one dose of vaccine AND test for titre at 6 months (HBs antibodies). If 6 month titre is positive, no action is required. If 6 month titre is negative, complete 2nd course of vaccine</td>
<td>If negative titre: administer 1 vaccine booster AND test for titre at 1 month. If 1 month titre is positive, no action is required. If 1 month titre is negative, complete 2nd course of vaccine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If unknown at 48hrs, 1 vaccine booster, follow above once titre known</td>
<td>Known non-responders (tested ≤ 6 months after series)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partially vaccinated (for 3 dose series)**</td>
<td>had 1 full series - HBIg and 2nd vaccine course***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>had 2 full series: Give HBIg X 2 (1 month apart)</td>
<td>had 1 full series – 2nd vaccine course***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If positive titre now or in past: No action required*</td>
<td>had 2 full series – no action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If negative titre: give HBIg AND give one dose of vaccine AND test for titre at 6 months (HBs antibodies). If 6 month titre is positive, no action is required. If 6 month titre is negative, complete 2nd course of vaccine</td>
<td>Partially vaccinated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If unknown at 48 hrs, HBIg, follow above once titre known</td>
<td>complete vaccine schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 dose of vaccine: determine titre AND give HBIg AND complete vaccine series</td>
<td>Note: Hepatitis B vaccine is effective post exposure. HBIg is used as an adjunct for high risk exposures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(HBIg – if indicated give as soon as possible, best &lt; 48 hrs, efficacy unknown if given &gt; 7 days post exposure)</td>
<td>*Titre levels decrease over time. A previously positive titre indicates lifelong immunity even if no antibodies are detectable, due to immune memory (unless immunocompromised)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. PEP REGIMENS (Post Exposure Prophylaxis)

a) Hepatitis B Immunization
- HBIg - hospital blood bank, Hep B vaccine complete series - obtain via primary health care provider or Public Health

b) Hepatitis C
• IG and antiviral agents are NOT recommended for PEP after exposure to HCV-positive blood
• if infection occurs some people clear the virus on their own ≤ 6 months, studies suggest early treatment is beneficial

c) HIV - Updated CDC/US Public Health Service Guidelines, Management of Occupational Exposures to HIV, August 2013
only a 3 drug PEP regimen recommended for ALL exposures if:
- meets criteria for exposure and source is HIV positive or there is a reasonable suspicion for HIV infection (see sections 3 and 4 to determine if exposure is significant)
- PEP not justified for exposures that pose a negligible risk for transmission e.g., discarded needle, bites
- current PEP regimen (see below) better tolerated than previous regimens

expert opinion recommended if exposed person pregnant/breastfeeding, source HIV with anti-retroviral resistance or PEP is delayed >72 hours (efficacy unknown but consider up to 1 week if extremely high risk)*

Preferred HIV 3-drug PEP Regimen:
Waterloo Region Hospitals - 5 day starter kits
Sentriss™ (Raltegravir) 400 mg PO twice daily x 28 days
Plus
Truvada™ 1 PO daily x 28 days (Tenofovir DF [TDF] 300mg + emtricitabine [FTC] 200mg)

Refer to a physician with a special interest in HIV to monitor drug tolerance, reassess need for PEP within 3-5 days

See Canadian Immunization Guide for age specific vaccine schedules and further details.*