

Management of Sharps Injuries in the Community

Background

Injury from used needles and syringes found in community settings arouses much concern, especially when children find discarded needles and injure themselves while playing with them. The user is generally unknown, and parents and health care providers fear that the needle may have been discarded by an injecting drug user. Although the actual risk of infection from such an injury is very low, the perception of risk by parents results in much anxiety. There have been single case reports of HBV and HCV transmission and no reported transmission of HIV following injuries by needles discarded in the community.

Source identified

- Where the source is identified, whenever possible, they should be tested for HIV screen, HBsAg and HCV screen. In gaining consent it may be helpful to say that it is routine to ask any donor for these tests.
- Results will need to be fed back to the donor and appropriate referral made should any tests be positive.
- Follow up of the recipient will depend on the results on the donor.
- Where the donor is identified but declines testing the recipient should be followed up as for recipients of an exposure from an unknown source.

All recipients

- After the injury, clean the wound thoroughly with soap and water as soon as possible. It should not be squeezed to induce bleeding.
- Assess the extent of the wound, if any, or the probability of exposure of open skin lesions or mucous membranes to blood.
- Determine immunization status for tetanus and HBV.
- Tetanus vaccine, with or without tetanus immunoglobulin, should be given if indicated.
- Document the circumstances of the injury (the date and time of injury or exposure, where the needle was found, circumstances of the injury, type of needle, whether there was a syringe attached, whether visible blood was present in or on the needle or syringe, whether the injury caused bleeding and whether the previous user of the needle is known).
- Testing needles and syringes for viruses is not indicated. Results are likely to be negative, but a negative result does not rule out possibility of infection.
- Take a baseline serum sample for storage (it does not need testing) and give 1st dose of HBV vaccine. This should be done even when the source is identified i.e. while awaiting results on the donor.

Follow up of recipient where source is known

- Check donor results
- If negative for BBV's but source is not thought to be high risk then reassure patient; no follow up required.
- If donor is HCV RNA positive, test recipient as follows:
 - 6 weeks serum sample for HCV Ab
 - 12 weeks serum sample for HCV Ab and RNA
 - 6 months serum for HCV Ab
- If donor is HIV positive – do they know and are they on treatment? Treated and suppressed patients are lower risk for transmission.
 - Risk assess for HIV PEP – call GUM; must be started within 72 hours and ideally within the hour
 - Follow up recipient as follows:
 - Screen for HIV at 12 weeks post exposure
- If donor is HBsAg positive then perform risk assessment to decide if HBIG is required in addition to vaccine.
 - Follow up recipient at 6 months screen serum for HBsAg and sAb

HBV status of person prior to exposure	Significant exposure			Non-significant exposure	
	HBsAg positive source	Unknown source	HBsAg negative source	Continued risk	No further risk
Unvaccinated	Accelerated course of HepB vaccine plus HBIG with first dose	Accelerated course of HepB vaccine	Consider course of HepB vaccine	Initiate course of HepB vaccine	No HBV prophylaxis Reassure
Partially vaccinated	One dose of HepB vaccine and finish course	One dose of HepB vaccine and finish course	Complete course of HepB vaccine	Complete course of HepB vaccine	Complete course of HepB vaccine
Fully vaccinated with primary course	Booster dose of HepB vaccine if last dose $\geq$ 1 year ago	Consider booster dose of HepB vaccine if last dose $\geq$ 1 year ago	No HBV prophylaxis. Reassure	No HBV prophylaxis Reassure	No HBV prophylaxis Reassure
Known non-responder to HepB vaccine (anti-HBs < 10mIU/ml 1-2 months post-immunisation)	HBIG Booster dose of HepB vaccine A second dose of HBIG should be given at one month	HBIG Consider booster dose of HepB vaccine A second dose of HBIG should be given at one month	No HBIG Consider booster dose of HepB vaccine	No HBIG Consider booster dose of HepB vaccine	No HBV prophylaxis Reassure

Follow up of recipient where source unknown

- The testing/vaccination schedule suggested below is based on the follow up of a recipient exposed to an unknown or untested source and where the recipient has not received HIV PEP and has not previously received HBV vaccine.

A Information

- **Hepatitis B**
 - HBV is the most stable of the blood-borne viruses and can be transmitted by a minute amount of blood. HBV can survive for up to one week under optimal conditions, and has been detected in discarded needles.
 - An accelerated course of vaccine should be used with doses at zero, one and 2 months. A booster dose may be given at 12 months to those at continuing risk of exposure to HBV.
 - It is appropriate to test both to exclude acquisition of HBV and to confirm response to vaccine.
- **HCV**
 - HCV is a more fragile virus than HBV.
 - There are rare case reports of transmission from community needle stick injuries.
 - There is no vaccine for HCV or post-exposure prophylaxis but treatment is usually successful if infection is detected early.
 - For these reasons it is important to follow up recipients to look for transmission.
 - Since development of antibodies is slow, follow up involves a combination of RNA and antibody testing.
- **HIV**
 - The risk of acquiring HIV from a sharps or splash exposure is extremely low. HIV is a fragile virus that does not usually survive for long outside the body and there has never been a recorded case of someone being infected with HIV from a needlestick injury outside a healthcare setting.
 - The only cases of HIV infection have been in healthcare settings and have involved puncture wounds or cuts that have been exposed to the fresh blood of HIV positive individuals. In community exposures injury rarely occurs immediately after needle use, the needle rarely contains fresh blood, any virus present has been exposed to drying and environmental temperatures, and injuries are usually superficial. Explaining this is often enough to reassure the recipient (or parent).
 - Post-exposure prophylaxis for HIV is rarely indicated in community exposures. It *may* be considered in more unusual circumstances (e.g. donor deliberately stabs recipient and declares they are HIV positive) if the recipient

is very anxious, however there are no recorded cases of someone being infected with HIV through such an attack. In the vast majority of cases there is no reason to believe the attacker is actually infected with HIV, even when they make such a claim. In this sort of situation please contact your local GUM clinic or paediatric A&E.

- In most cases it will not have been appropriate to offer PEP but the recipient will usually want reassurance that they have not acquired HIV, however remote the risk. Hence testing for HIV is included in the schedule.

B Schedule for vaccination and blood tests

- Day zero: Baseline serum for storage, 1st dose of HBV vaccine.
- Four weeks post exposure: 2nd dose of HBV vaccine.
- Six weeks post exposure: Serum sample for HCV RNA.
- Eight weeks post exposure: 3rd dose of HBV vaccine.
- Twelve weeks post exposure: Serum sample for HCV RNA, HCV antibody and HIV antigen/antibody.
- Six months post exposure: Serum sample for HCV antibody, HBV surface antigen and HBV surface antibody.