Management of Needle Stick Injury, Bites, Scratches, Splashes or Mucosal Contact with Blood, Body Fluids or other Clinical Material

For management of needlestick injuries involving patients rather than clinical materials please see very similar guidance on the University Health Service website.

Introduction

Blood borne diseases are a potential serious hazard to health workers, medical students and laboratory staff involved in handling of human tissues and specimens. Hepatitis B virus (HBV) infection is endemic in Hong Kong. About half of the adult population over 40 has been infected with HBV. Around 8% of the population are carriers and as many as 25% of these will eventually die from disease caused by the infection. While the seropositivity rates for other blood borne viruses are much lower e.g. 0.2-0.3% for Hepatitis C virus (HCV), the serious nature of the associated diseases warrant stringent infection control measures.

The CDC in Atlanta estimated that over 1 million needlestick accidents occur in the USA annually. Consistent with this finding is the fact that one of the accidents most frequently reported to the Safety Office in Hong Kong University involves needles and unintended puncture wounds. Often this does not involve blood or clinical material but when it does it is vital that the correct protocol is followed because post exposure prophylaxis may need to be initiated promptly. This is also the case where mucosal contact e.g. splashes in the eye, has occurred.
Responsibilities

*Department Head shall:*  
ensure that the appropriate precautions are taken by staff and students including:-

ensuring an adequate risk assessment has been carried out for the work.

ensuring that staff and students are aware of the procedures to follow in the event of potential exposure.

advising all potentially exposed staff or students to get competent medical advice as soon as possible, preferably by attending A&E at the nearest hospital.

ensuring all staff and students who are at risk are vaccinated against hepatitis B and a post vaccination antibody test is carried out to make sure adequate antibody levels have been elicited. A record of those refusing vaccination or advised on medical grounds not to be vaccinated must be kept for 10 years.

*The Supervisor or Principal Investigator shall:*  
carry out a risk assessment for the work with clinical samples.

ensure that staff and students are adequately trained to carry out the work.

*Employees and Students must:*  
be trained to carry out work with potentially infected clinical samples.

report all cases of unprotected contact with clinical material including, splashes needle stick injury and skin puncture with sharp objects.

undertake a course of hepatitis B vaccination before commencing work (exemption from this requirement should only be given in exceptional circumstances).

Guidance

1. **Precautions**

All staff and students should follow the recommendation for universal precautions for venupuncture, minor operations and handling of sharps. A definition of "universal precautions" can be found in guidance on Biological Safety and is essentially a combination of good microbiological practice, appropriate personal protective equipment and standard infection control procedures.

All those who work with clinical material are expected to be vaccinated against hepatitis B virus with post vaccination testing of antibody responses to ensure adequate protection.
2. **First Aid**

Immediately following ANY exposure the site of exposure e.g. wound or non-intact skin should be washed liberally with soap and water but without scrubbing. Free bleeding of puncture wounds should be encouraged gently but wounds should not be sucked. Antiseptics and skin washes should not be used - there is no evidence of their efficacy, and their effect on local defences is unknown. Disinfectant may be used and the wound dressed.

In the case of exposed mucous membranes, such as spillage into the eyes, wash immediately and liberally with running water. If the eyes are exposed this should be carried out before and after removing any contact lenses.

3. **Management – Immediate Actions**

Make the site of the incident safe if a spill is involved.

Care should be taken to ensure that others in the laboratory do not help with the clear up of an accidental spillage (especially where there has been an accident that involves broken glass) if they are not aware of the potential risks and trained in safe working practices.

The Head of Department and the workers supervisor/PI must be informed of the incident as soon as possible.

The injured person should attend the Accident and Emergency (A&E) department of a nearby Hospital Authority hospital, where appropriate counseling and treatment will be given if required. Any delay in attendance may compromise treatment.

Any decision not to attend A&E will be in consultation with the Head of Department or PI and will depend on the nature of the incident. All individuals bitten by bats or dogs/cats (or having contact with their saliva) must attend A&E. Similarly individuals with any exposure to materials known to be infected with HIV, Hepatitis C or BSL3 agent would normally be expected to attend A&E.

The source of any contamination (specimen, sample, material etc.) should be clearly identified and retained for testing if necessary.

Every effort should be made to ensure the confidentiality of persons potentially exposed to blood borne viruses such as HIV as a result of an accident.
4. Summary flow diagram for management of an accident involving potentially infected clinical material

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Potential Exposure
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First Aid
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Report to Head of Department and Supervisor / PI
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Attend A&E
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Risk assessment done by clinicians
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Appropriate counseling and treatment given if required
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Please note the most recent (2005) post exposure prophylaxis recommendations in the USA are in operation in QMH and they can be found in the following publication:-


5. Management – Reporting

The standard incident/accident report forms should be filled out after the individual has attended accident and emergency. If no time is taken off work then the incident report form may be completed. See the Safety Office website and page 5 of the accident reporting policy found at the following URL:

http://www.hku.hk/safety/pdf/ACCR.pdf

If 1 or 2 days are taken off work as a direct result of the accident then Form 2B will need to be filled in (follow link in URL above). If more
than three days are taken off then Form 2 will need to be completed (follow link in URL above).

6. Management – Remedial Actions

The standard incident report form contains sections on the lessons learned and what changes need to be made in order to prevent a re-occurrence of the incident. It is vital that any identified remedial action be communicated to all relevant staff within the department where the incident occurs.

Under some circumstances the Safety Office will carry out its own investigation and where possible will preserve anonymity to encourage full disclosure of accidents. If it is felt appropriate the Safety Office will communicate lessons learned to other departments carrying out similar operations.