



# Department of Medical Education Khyber Medical College Peshawar

No. DME/497/KMC/20

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## Policy for needle stick injury in Khyber Medical College and Khyber Teaching Hospital, Peshawar

### Introduction

Needle-stick injury (NSI) or similar injury has the potential to cause serious harm and KMC / KTH is committed to ensuring that the risk of injury from Sharps is reduced to the lowest possible level. This will be achieved by promoting safe sharp practice and the use of safe sharp devices. The policy aims to provide KMC / KTH staff with clear guidance on the steps to be taken in the event of an NSI. It is also important to emphasise that prevention of these injuries through the safe handling and disposal of sharps is extremely important.

### Definitions

- 1) Needle-stick:** Any sharp object or material which punctures the skin and may be contaminated with blood or body fluid. This can include hollow bore hypodermic needles, solid instruments like a scalpel or suture needle, razors, sharp pointed surgical or dental instruments and sharp tissue such as bone or teeth.
- 2) Similar injuries:** Blood or other high risk body fluid exposure via mucous membrane (i.e. splash to the eyes and mouth), exposure onto broken skin or human bites that break the skin
- 3) Blood-borne viruses (BBVs):** Are viruses that some people carry in their blood and can be spread from one person to another through blood to blood contact. These are: HBV (Hepatitis B Virus), HIV (Human Immunodeficiency Virus) and HCV (Hepatitis C Virus).

## **The risk of infection following NSI or Similar Injury**

### **1: Risk of infection from known positive source:**

- 1.1) Risk of infection after exposure to HBV: Health care workers who have received hepatitis B vaccine and have developed immunity to the virus are at extremely low risk of infection. For the unvaccinated person, the risk from a single NSI or a cut exposure to HBV-infected blood ranges from 6- 30% (i.e. 1 in 3) and depends on the viral load and hepatitis Be antigen (HBeAg) status of the source individual.
- 1.2) Risk of infection after exposure to HCV: Based on limited studies, the average risk of infection after a NSI or cut exposure to HCV-infected blood (i.e. HCV PCR +ve blood) is approximately 1.8% (i.e. 1 in 50). The risk following a blood splash is unknown, but is believed to be very small.
- 1.3) Risk of infection after exposure to HIV: The average risk of HIV infection after an NSI or cut exposure to HIV-infected blood is 0.3% (i.e. 1 in 300). The risk after exposure of the eye, nose or mouth to HIV-infected blood is estimated to be, on average 0.1% or 1 in 1000. The risk after exposure of non-intact skin to HIV-infected blood is estimated to be less than 0.1%.

### **2: Factors associated with an increased risk of BBV transmission**

- 1) Deep injury
- 2) Hollow needle
- 3) Visible blood on the device that caused the injury
- 4) Injury with a needle that has been placed in a source patient's artery or vein.
- 5) Source patient is HBeAg positive
- 6) A high plasma viral load in the source is associated with an increased risk of HIV and hepatitis C transmission.

## **Actions required (role specific) following an NSI or similar injury**

The injured Healthcare worker or student should:

- 1) Apply first aid
- 2) Encourage bleeding of puncture wounds – DO NOT SUCK THE AREA.
- 3) Wash the affected area with soap and warm water.

- 4) If mucous membrane is exposed, rinse the affected area with warm water or saline– Water used for rinsing the mouth must not be swallowed.
- 5) Report the injury to the supervisor/Head of department e.g. ward manager, consultant or nurse
- 6) The attending physician should immediately screen the affected healthcare worker / student for HBV, HCV and HIV. If negative, then PCRs for these viruses should be checked at 3 weeks if the source patient is positive for any of these viruses.
- 7) if post-exposure prophylaxis (PEP) is indicated, it should, ideally, be started within one hour of exposure.
- 8) The attending staff must contact the hospital director on the next working day to ensure appropriate vaccination, immunoglobulins, other testing, finances and follow up is arranged.
- 9) The need for further follow up will be advised by the attending physician, preferable incharge of NSI management team.
- 10) Follow up Blood borne virus testing comprises of HIV testing at 6 and 12 weeks, and HBV and HCV at 6, 12 and 24 weeks.
- 11) The clinician undertaking the source patient risk assessment should
  - 11.1) check the source patient case notes and discuss the risk with the medical team caring for the source patient.
  - 11.2) Consent the source patient for Blood borne virus testing even if the risk assessment has not identified them as a high-risk source.
  - 11.3) Manage the source patient results and notify the test results to the clinician looking after the injured healthcare worker.
  - 11.4) Give the results to the source patient, and if appropriate, arrange follow up visits.

### **Role of physician responsible for managing such patients**

The physician responsible should:

- 1) Undertake a risk assessment of the incident including an assessment of the injury and an assessment of the risk from the source patient and decide on appropriate action.
- 2) Assess the need for HBV vaccination and hepatitis B immunoglobulin.

- 3) Arrange follow up for Blood borne virus testing as required based on the risk assessment. Follow up testing comprises of HIV at 6 and 12 weeks, and HBV and HCV at 6,12 and 24 weeks.
- 4) Notify the relevant authorities (hospital director) if an employee is injured by a sharp known to be contaminated with a blood borne virus and where an employee who sustains a high risk NSI subsequently develops an infection. The hospital will be responsible for arranging the tests and treatments needed for affected healthcare workers.

### **Consenting the source patient for Blood borne virus testing**

The following procedure should be adopted if the source patient's viral status is unknown:

- 1) Consent the patient for testing as you would do for any procedure.
- 2) Inform the source patient that the results of their tests will be passed to the clinician managing the injured healthcare worker, but as far as possible, their identity will not be disclosed.
- 3) Once the source patient has consented, take blood for HIV, HCV and HBV and send it to the laboratory for testing.
- 4) Obtain contact details of the source patient. Remember the source patient may be discharged by the time the results are available.
- 5) The laboratory will contact the clinician who took blood from the source patient, with the test results as soon as possible.
- 6) The clinician taking blood from the source patient must also ensure that the source patient is informed of their test results. Only confirmed results should be given to the source patient. This should be done within 24 hours of the confirmed test result becoming available.
- 7) In case, the source patient is a child, If the child consents, consent should also be sought from the child's parent / guardian. As the route of transmission to children is usually vertical (from mother to child), testing the child may be a surrogate for testing the mother, and so she should be made aware of this prior to testing. The reason for refusal of consent may be the distress of venepuncture. If this is the case, in young children with no history of foreign travel, blood transfusion or NSI, the mother's blood

may be tested instead of the child's. Do not take blood from children under 18 months without prior discussion with the laboratory as to appropriate specimens.

*Reference: NHS- NHSGG&C Management of Needlestick and Similar Injuries Policy v1, 2017*

Dr. Farooq Ahmed \_\_\_\_\_

Director Medical Education, KMC

Prof. Dr. Muhammad Tahir \_\_\_\_\_

Chairman department of Pathology, KMC

Prof. Dr. Mahmud Aurangzeb \_\_\_\_\_

Dean, MTI, KMC / KTH