PROTOCOL FOR NEEDLEPRICK / SHARP INJURIES

Introduction

Needle prick / sharp injuries can lead to serious or fatal infections. Healthcare workers who use or may be exposed to needles are at increased risk of needle prick injury. All workers who are at risk should take steps to protect themselves from this significant health hazard.

Sharps injuries are primarily associated with occupational transmission of hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). They have been associated in the transmission of multiple pathogens.

HBV vaccination is recommended for all health care workers (unless they are immune because of previous exposure). HBV prophylaxis had to be followed for any exposures to which vaccination is not given. However vaccines are not recommended where they are immune due to previous exposures. HBV vaccine has proved highly effective in preventing infection in workers exposed to HBV. However, no vaccine exists to prevent HCV or HIV infection

The aim of formulating a protocol for needle prick injury is in addition doing a surveillance reporting mechanism which will improve staff compliance in avoiding sharp injuries leading to transmission of blood borne infections. Moreover, it will also help healthcare organization in addressing to occupation health safety of transmittable safety and vaccinating staff in blood borne infections reducing the cost of delivery

According to sources it has been estimated about half or more of sharps injuries go unreported. Most reported sharps injuries involve nursing staff, but laboratory staff, physicians, housekeepers, and other health care workers are also injured.

Aims

The aim of formulating a protocol is:

- To develop surveillance reporting mechanism within healthcare institutions
- To prevent sharp injuries by ensuring staff compliance with sharp injury protocol
- Timely prophylaxis for exposure
- To address occupational health and safety in healthcare organization by vaccinating staff to blood borne pathogens, thereby, reducing the cost of delivery

Roles and Responsibilities

Staff:

- Report incident to the immediate supervisor

Supervisor / infection control focal point

- Log incident in a Sharps Injury Log/incident report form
  Log should include information on (refer to Annex 2) :
  - Employee ID
  - Date and time of incident
  - Date and time of report
  - Reporting person about the incident
  - type and brand of device involved in exposure incident
  - department or work area where exposure occurred
  - an explanation of how exposure occurred
  - Immediate action taken
  - Follow up details

  Other important information to track:
  - Job classification of exposed workers, procedure involved.
  - Ensure injured employees' confidentiality when recording and maintaining information in the sharps injury log.

- Refer staff to laboratory for investigation and record results (give more detail instructions to the Lab.)
  Follow up with reported case
  Provide unimmunized patients with written information in relation to further catch-up doses of hepatitis B and tetanus vaccines (at minimum).

- Post-exposure prophylaxis - immunized patient
  Ideally, post-exposure prophylaxis should be provided as the first part of a comprehensive plan for catch-up vaccinations.

Institute

- Identify a responsible person for infection control
- Reported cases to be notified to Ministry of Health
- Offer hepatitis B immunoglobulin within 72 hours (reference)
- Offer Hepatitis B vaccination if required (3 dose-schedules).
- Offer tetanus if required
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MoH

Ensure that all institutes have been oriented with the protocol.
Develop and disseminate awareness materials to all health facilities

Guidance in Preventing Needle prick / sharp injuries

- Refrain from recapping used needle
- Never recap bend or manually remove the needle from used syringe
- Use leak-proof, puncture-resistant sharps containers
- Do not manually sort healthcare waste
- Do not fill sharp container completely full.*(give the details)*
- Contaminated needles should not be transferred from container to container
- Do not pass sharps by hand; place and retrieve from predetermined centralized location/tray

Sharps containers, must be:

- Closable, leak-proof on sides and bottom.
- Accessible, maintained upright.
- Labeled or color coded and labeled with the biohazard symbol.

Guidance on treatment of Post exposure of prick / cut injuries.

- Let the wound bleed for a moment and then cleanse thoroughly with water or a saline solution.
- Clean the wound using an ample amount of soap and water. In case of contact with mucous membranes it is important to rinse immediately and thoroughly, using water or a saline solution only, not alcohol.
- Report the incident to your supervisor immediately
- Incident should be registered and recorded, as per the institutional protocol.
- A blood sample should be taken as soon as possible after the injury.
- Sample should be kept for at least one year. It can act as a baseline value in case infection takes place and it becomes necessary to determine whether infection by one of the three viruses occurred at work. Kept sample may only be analyzed for this particular purpose.
- Further blood samples to test for HBV, HCV and HIV are collected after 1, 3, 6 and 12 months.
- If the source of the blood is known the patient must be asked for permission to sample blood for a HBV, HCV and HIV test. If the patient refuses then it must be assumed the patient is a carrier of the virus. If the origin of the blood is unknown then any blood present on the needle can be used for a serological examination.

Assessment by doctor / supervisor

History

1. Details of incident – time, date, place
2. Details of injury – location on body, superficial or deep
3. Source (the person who used the needle) known or unknown?
4. What kind of needle/syringe?
5. What, if any, first-aid has been provided?
6. Was there visible blood on/in the needle/syringe?
7. Immunization history (specifically tetanus and hepatitis B)
    - Is the Staff vaccinated?
    - If so how many doses completed and when was the last dose taken?
    - Is titer level (Hep B) checked, if so when and what was the value?
    - If titer level below than 10mIU/mL, was second series advised? (and then continue same history)

Evaluate the Exposure Source

The exposure should be evaluated for potential to transmit HBV, HCV, or HIV based on the type of body substance involved, the route, and severity of exposure.

Infection status of source patient

- If positive for HBsAg, consider testing for presence of HBeAg.
- If positive for HCV antibody, consider measuring HCV viral load.
- If positive for HIV antibody, consider obtaining HIV viral load, resistance testing, and evaluating clinical status of patient.

Susceptibility of exposed HCP

- Hepatitis B vaccine and vaccine response status
- HBV, HCV, and HIV status—baseline testing for HbsAb, anti-HCV, and HIV antibody should be completed as early as possible (preferably within 72 hours)

When source patient is known:

- Test patient for :
    - HBsAg
    - HCV antibody
    - HIV antibody.
- HIV viral load assessments for routine screening of source patients are NOT recommended.
- Use a rapid HIV-antibody test.
- If the source person is NOT infected with a blood borne pathogen, baseline testing or further follow-up of HCP is not necessary.
- Follow state regulations related to informed consent and confidentiality.

- For patients who cannot be tested, consider medical diagnoses, clinical symptoms, and history of risk behaviors.

When source patient is **NOT** known:

- Evaluate the likelihood of high risk exposure:
- Consider the likelihood of blood borne pathogen infection among patients in the exposure setting, e.g. what is the community infection rate?
- Does the clinic/hospital unit care for a large number of HIV-, HBV-, or HCV-infected or at-risk patients?
- Do not test discarded needles for blood borne pathogens; the reliability of these findings is not known.

Disease-Specific PEP Management

Baseline testing of exposed HCPs should be performed for ALL exposures.

HBV Exposures

HBV PEP should be initiated IMMEDIATELY (preferably within 24 hours but within 7 days) according to the following table:

Vaccination status of exposure to HCP*	Antibody Response Activity		
	Source HbsAg Positive	Source HbsAg Negative	Source unknown or not available for testing
Unvaccinated	HBIG† x 1 and initiate HBV vaccine series	Initiate HBV vaccine series	Initiate HBV vaccine series
Previously Vaccinated			
Known responder1	No treatment	No treatment	No treatment
Known nonresponder2	HBIG x 1 and initiate revaccination or HBIG x 2††	No treatment Consider revaccination	If known high risk source, treat as if HBsAg positive
Antibody Response Unknown	Test exposed HCP for anti-HBs** 1.If adequate,1 no treatment is necessary 2.If inadequate,2 administer HBIG x 1 and vaccine booster 3.Consider testing HCP for HBsAg	No treatment	Test exposed HCP for anti-HBs** 1.If adequate,1 no treatment necessary 2.If inadequate,2 administer vaccine booster and recheck titer in 1-2 months

** Those previously infected with HBV are immune to reinfection and do not require PEP.*

† Hepatitis B immune globulin; dose is 0.06 mL/kg intramuscularly within 7 days of exposure.

1 A responder has adequate levels of serum antibody to HBsAg (i.e., anti-HBs ³ 10 mIU/mL).

2 A non-responder has inadequate response to vaccination (i.e., anti-HBs < 10 mIU/mL).

††The option of giving one dose of HBIG and reinitiating the vaccine series is preferred for non-responders who have not completed a second 3-dose vaccine series. For persons who previously completed a second vaccine series but failed to respond, two doses of HBIG are preferred.

***Antibody to HbsAg*

HCV Exposures

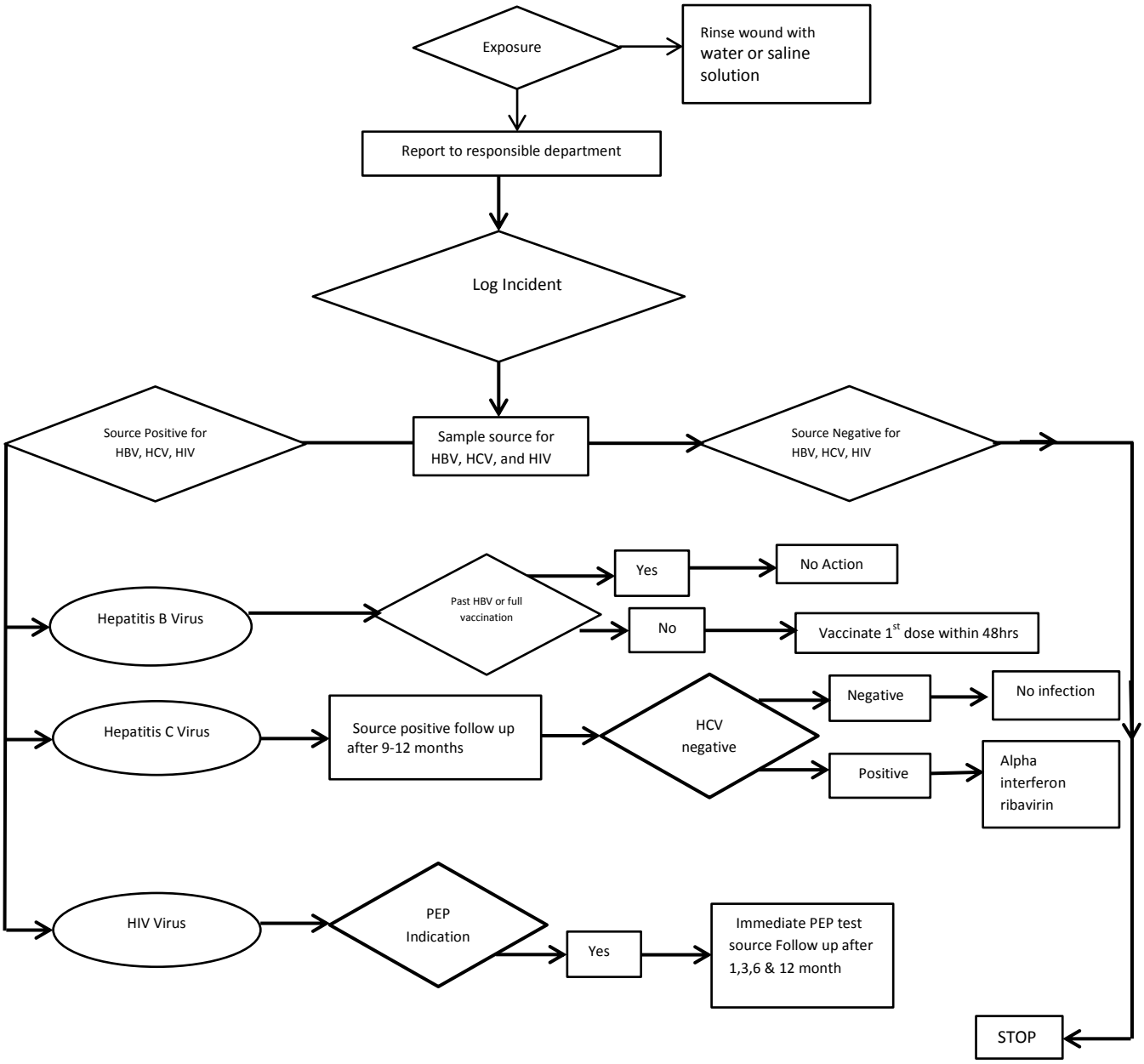
At this point, there are no recommendations for HCV PEP. Immune globulin is not effective. Exposed HCP should receive appropriate counseling, testing, and follow up.

For seroconverters, pegylated interferon may be effective if started soon after HCV seroconversion.

HIV Exposures

- HIV PEP should be started IMMEDIATELY. If the delay lasts more than 24-36 hours, seek expert consultation. PEP should continue for 28 days.
- Typical choices for PEP are:
    - A basic 2-drug regimen, appropriate for lower risk exposures.
    - An expanded [3] 3-drug regimen, for exposures that pose an increased risk for transmission.
- If questions about the extent of risk remain after the incident, starting the basic 2 or expanded 3-drug PEP is better than delaying administration.
- If information on the source is unknown, and the decision to start PEP is made (based on risk factors, exposure type, etc.), PEP should not be delayed; changes can be made as needed after PEP has been started. The exposed HCP should be reevaluated within 72 hours as additional information about the source is obtained. If source patient is found to be HIV-negative, PEP should be discontinued.

Flowchart of all steps to be taken if exposed to any needle stick / sharp injury



Annex 1

Form no:

CONFIDENTIAL

Name of institute
Address

EXPOSURE INCIDENT REPORT FORM

EXPOSURE INCIDENT: *Means a specific eye, mouth, other mucous membranes, non-intact skin or parenteral contact with blood other potentially infectious materials that result from the performance of the employees' duty.*

EMPLOYEE DETAILS:		
Unique Code :	*Age:*	*Sex:*
Designation:	*Staff ID No:*	
Department:		
Section / Unit:		
H/O Immunization: HCV YES ☐ NO ☐ *HBV* YES ☐ NO ☐ *Tetanus* YES ☐ NO ☐ *Not known* ☐		
Details of Immunization		
DETAILS ON INJURY:		
Date:		
Type:		
Site:		
First Aid measures: Taken ☐ *Not Taken* ☐		
Laboratory Test Result: *HIV* ☐ *VDRL* ☐ *HbSAg* ☐ *HCV* ☐		
DETAILS OF SOURCE PATIENT:		
Name:	*Age:*	*Sex:*
Address:	*Ward:*	*Bed No:*
Diagnosis:		
Provisional Diagnosis:		
High index of clinical suspension:		
Laboratory Test Result: *HIV* ☐ *VDRL* ☐ *HbSAg* ☐ *HCV* ☐		
Confirmed Diagnosis:		

Date: *dd/mm/yyyy* **Signature:**

NOTE:

Please fill in the form and send it to the laboratory with blood samples of the source patient and the employee to screen for HIV, HbSAg, VDRL and HCV.

**Health Centers which do not have laboratory facilities will have to do sample transfer to the nearest facility.*

All exposure incidents reported should be sent as a monthly report to Quality Assurance Division of Ministry of Health.

Annex 2

CONFIDENTIAL

Name of institute
Address

EXPOSURE INCIDENT LOG

Staff Job ID	
Date and time of incident	
Date and time of report	
Reporting person about reporting	
type and brand of device involved in exposure incident	
department or work area where exposure occurred	
Detail of exposure (Please include the type of infectious material to which you were exposed and the circumstances of the exposure)	
Immediate action taken	
Follow up	

Bibliography

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8. PEP steps, A quick guide t prophylaxis in the health care settings, April 2006

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