Policy for the Prevention and Management of Needle Stick Injuries & Blood / Body Fluid Exposure Among Healthcare Personnel in Healthcare Settings

CONTENTS

List of tables

List of figures

Appendices

1. Introduction

The risk of transmission of blood-borne viruses (BBVs) in the health-care setting has become a matter of increasing concern in recent years. Healthcare Personnel (HCP) remain at substantial risk of occupational exposure to BBVs, including hepatitis B virus(HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV).

The greatest risk of infection transmission is through percutaneous exposure to infected blood. Estimates of the annual number of percutaneous injuries among HCP vary widely but represent a substantial occupational risk. The majority of injuries occur on inpatient units, particularly medical floors and intensive care units, and in operating rooms. Injuries most often occur after use and before disposal of a sharp device, during use of a sharp device on a patient, and during or after disposal.

Nurses are the predominant occupational group injured by needles and other sharps, in part because they are the largest segment of the workforce at most hospitals. Other patient-care providers (e.g., physicians, technicians), laboratory staff, and support personnel (e.g., housekeeping staff), are also at risk.

2. Purpose

2.1 To set a mechanism to prevent, identify report, manage and follow up incidents associated with the risk of occupational exposure to BBVs among HCP.

2.2 To measure the rate of reporting the incident in the State of Kuwait.

3. Scope

The policy applies to all HCP working in the governmental and private sector in the state of Kuwait who come into contact with patients' blood or body substances. The scope is to know what action to take, how to report the incident, who is responsible for proper assessment and where to go for management and follow-up.

4. Requirements and Resources

The equipment and resources required to ensure compliance with the policy must include the provision of:

4.1 A room/designated safe area prepared for postexposure prophylaxis (PEP) in all six general hospitals (Al-Sabah, Al-Farwaniya, Mubarak Al-Kabeer, Al-Adan, Al-Amiri, Al-Jahra). Each will serve the related health region. It will be equipped with adequate cold chain controls to store vaccines, hepatitis B immunoglobulin (HBIG) and HIV-PEP medications and a direct phone line known to all HCPs.

4.2 Resources for the required laboratory tests including rapid HIV test and HBV and HCV antibodies.

4.3 HBV vaccine, hepatitis B immunoglobulin (HBIG) and postexposure antiretroviral therapy.

4.4 Sharp and other waste disposal containers as appropriate.

4.5 Safety engineered devices and needless system.

4.6 Personal protective equipment (PPE) e.g., gloves, aprons, and goggle.

4.7 Consent form for blood collection and testing of source individual and exposed HCP.

4.8 Incident forms: Needlestick injuries (NSI) form - Blood and Body Fluid exposure (BBE) form - Post Exposure Follow-up (PEF) form.

4.9 Card to HCP for vaccination history and antibody titers

5. Definitions

Blood borne viruses (BBVs)	For the purpose of this policy BBVs are those that have a significant risk of transmission to HCP following exposure to blood and body fluids. These are Hepatitis B virus (HBV), Hepatitis C virus (HCV) and Human Immunodeficiency virus (HIV). There are other microorganisms that can be transmitted but are very rare.
Healthcare personnel (HCP)	All persons (e.g., clinicians, technicians, housekeepers, employees, students, contractors, or volunteers) whose activities involve contact with patients or with blood or other body fluids from patients in a healthcare setting.

Hollow-bore needle	A needle (e.g., hypodermic needle, phlebotomy needle) with a lumen through which material (e.g., medication, blood) can flow.
Non-Responder to Hepatitis B vaccine	A HCP who has received two series of hepatitis B vaccine, serotested within 2 months after the last dose of the vaccine and did not develop an anti-HBs antibody titre ≥10 mIU/mL.
Percutaneous injury	An exposure that might place HCP at risk for HBV, HCV or HIV (e.g., a needlestick or cut with a sharp object) or contact of mucous membranes or non intact skin (e.g., exposed skin that is chapped, abraded or afflicted with dermatitis) with blood, tissue, or other body fluids that are potentially infectious .
Safety engineered devices	Needles and other sharp devices with an integrated engineered feature to prevent sharp injury.
Source patient	The patient whose blood or other body fluid has come into contact with the injured person.
Splash exposure	An incident where the mucous membranes (mouth, nose or eyes) or non-intact skin have been contaminated by blood or body fluids from a patient.

6. Responsibilities

6.1 Ministry of Health :

Dissemination of all laws, decrees and circulars required by this policy to all Health District's facilities. (Governmental / Private Sectors):

6.1.1 Law No. 8/1969 issued for reporting, control & prevention of communicable diseases

6.1.2 Law No. 62/1992 for prevention of AIDS

6.1.3 Pre-employment consultation and vaccination.

6.1.4 Ministerial decree(s) for vaccination of Hepatitis B vaccine for HCP No. 36/1990 and the amendments No.2056/1994

6.2 Central Medical Stores

6.2.1 Appropriate provision of PPE (gloves, aprons, and goggles) as well as sharps disposal bins.

6.2.2 Appropriate provision of the required laboratory tests.

6.2.3 Appropriate provision of HBIG and vaccines for PEP as needed.

6.2.4 Appropriate provision of drug treatment for PEP of HIV

6.3 Public Health Directorate

6.3.1 Strengthening surveillance of NSI/BBF exposure incidents

6.3.2 Coordination and collaboration with Nursing, Preventive Medicine, Departments and Laboratories for consulting the vaccination status for HCP and vaccinating non-responders.

6.3.3 Distribution of circular related to roles and responsibilities of preventive services and Virology Unit of Central Public Health Laboratory for performance evaluation of HCP after completing the vaccination

6.4 Hospital Directors (Al-Sabah, Al-Farwaniya, Mubarak Al-Kabeer, Al-Adan, Al- Amiri, Al-Jahra)

6.4.1 Allocate a designated or safe area for postexposure management.

6.4.2 Authorize the Preventive Medicine and Casualty Physician to access to inpatients' source files

6.4.3 Ensure sending the completed NSI/ BBE form to the HCP file section

6.5 Charge Nurses, Chief Technologists (laboratories, Nuclear medicine, Pharmacy and Radiology Department), Senior Staff of non-clinical areas (e.g. CSSD, hotel services, laundry, catering services departments)

6.5.1 Receive notifications of NSI/BBF exposure incidents.

6.5.2 Ensure that HCPs follow immediate First aid measures.

6.5.3 Fill out and counter sign NSI/ BBE form ***(Appendix A and B)*** with the exposed HCP.

6.5.4 Notify Preventive Medicine unit at the hospital during working hours or Casualty Department after 2 PM. and in official holidays about the incident for Post-Exposure management.

6.5.5 Forward NSI/BBE Copies To:

- Head of department or unit of the exposed HCP.
- Preventive Medicine unit in the hospital
- Hospital Infection Control Department
- Nursing director that in turn will forward this copy to the file section through the hospital director

6.6 Exposed HCP following an incident

6.6.1 Perform immediate First Aid measures.

6.6.2 Report all exposures to blood and body fluids either to Charge Nurse of

the clinical area/ Chief Technologist of the laboratories or Nuclear medicine or pharmacy or Radiology Department/ Senior Staff of non-clinical area (e.g. hotel services, laundry, catering services departments) according to department where incident occurred

6.6.3 Maintain his/her vaccination card and post-vaccination antibody titres ***(Appendix D)***

6.6.4 Contact Preventive Medicine physician (7.00 AM till 2.00 PM) or Causality physician (2.00 PM - 7.00 AM of the next day and in official holidays) in the specified general hospital relevant to his health region.

6.7 Preventive Medicine Physician at the six general hospitals (7.00 AM till 2.00 PM)

6.7.1 Keep a stock of HBIG, HBV vaccine and required medication for the PEP required in the designated room/safe area and will be fully responsible for this area.

6.7.2 Carry out risk assessments of sharp Injury/ blood and body fluid exposure incidents to determine whether the injured HCP has likely significant exposure to Hepatitis B, C or HIV infection and ascertain the need for HBIG, HBV vaccine or antiretroviral therapy for HIV

6.7.2.1 Evaluation of the source individual

- Check source patient file(s) for relevant clinical information, risk factors, chronic diseases, past surgeries, chemotherapy, radiations, previous prophylaxis, pregnancy, etc.
- Ask the caring clinician/nurse to obtain written consent from the source individual prior to blood collection. Refer to the written consent form ***(Appendix E1)***
- Fill out a request form to withdraw a blood sample from the source individual as soon as possible after the injury to test for HBV, HCV and HIV***(Appendix F)***
- Send the collected sample to the Virology Unit in the Central Public Health Laboratory (CPHL)
- Follow up and receive the results from Virology Unit in CPHL
- Keep records of the results and complete the postexposure follow up form (PEF)

6.7.2.2 Evaluate the exposed HCP after exposure.

- When HCP blood sample for HBsAg, HCV-Ab and HIV-Ab is indicated, it should be taken as soon as possible after the injury to act as a baseline value.
- Obtain written consent from the exposed HCP prior to blood collection. Refer to the written consent form ***(Appendix E2)***
- Complete the blood sample request form ***(Appendix F)*** and sent it to Virology Unit of CPHL.
- Ask HCP for documented previous anti HBsAb titer.
- Blood will be collected at the "Phlebotomy Room" in the outpatient settings.
- Follow up the Virology Unit of CPHL for the test(s) results
- Complete and send the PEF form ***(Appendix C)*** to the file section via the hospital director to be included in the exposed HCP file

6.7.3 Initiate postexposure management of the incident.

6.7.4 Ensure the completeness of NSI/BBE and PEF forms ***(Appendix A-B-C)***

6.7.5 Refer HCP to Infectious Diseases Hospital (IDH) for counselling and follow up when necessary

6.7.6 Follow up and review all incidents seen by the Casualty physician

6.7.7 Review the completeness of vaccination status for all HCP. Refer to immunization records of the new HCP ***(Appendix D and G).***

6.7.8 Request anti-HBs antibody titer 1-2 months after completing the 3 doses of HBV vaccine.

6.7.9 Keep a copy of HCP vaccination card and ensure that the HCP keep a copy of the card.

6.8 Causality Physician at the six general hospitals (2.00 PM -7.00 AM and holidays)

6.8.1 Have an access to the designated room with HBIG, HBV vaccine and required medication for the PEP.

6.8.2 Carry out risk assessments of sharp Injury/ blood and body fluid exposure incidents to determine whether the injured HCP has likely significant exposure to Hepatitis B, C or HIV infection and ascertain the need for HBIG, HBV vaccine or antiretroviral therapy for HIV

6.8.2.1 Evaluation of the source individual

- Check source patient file(s) for relevant clinical information, risk factors, chronic diseases, past surgeries, chemotherapy radiations, chemoprophylaxis provided, pregnancies, etc
- Ask the caring clinician/nurse to obtain written consent from the source individual prior to blood collection. Refer to the written consent form ***(Appendix E-1)***
- Fill out a request form to withdraw a blood sample from the source individual as soon as possible after the injury to test for HBV, HCV and HIV***(Appendix F)***
- Send the collected sample to the Virology Unit of CPHL.

6.8.2.2 Evaluate the exposed HCP after exposure.

- When HCP blood sample for HBsAg, HCV-Ab and HIV-Ab is indicated, it should be taken as soon as possible after the injury to act as a baseline value.
- Obtain written consent from the exposed HCP prior to blood collection. Refer to the written consent form ***(Appendix E-2)***
- Complete the blood sample request form and sent it to Virology Unit of CPHL.
- Ask HCP for documented previous anti HBsAb titer.
- Blood will be collected from HCP at the "Phlebotomy Room" in the outpatient settings.

6.8.3 Initiate post-exposure management of the incident.

6.8.4 Refer HCP to Infectious Diseases Hospital (IDH) for counselling and follow up when necessary

6.9 Infectious Disease Hospital (IDH)

Ensure Infectious Diseases physicians carry out HIV treatment, counselling and follow up of exposed HCP or source individuals.

6.10 General Medical council (GMC)

6.10.1 Collect and send HCP Pre-employment virology investigations (HBV, HCV, and HIV) to Central Public Health Laboratory at Al-Sha'b region

6.10.2 Give the first dose of HBV vaccine to HCP. Subsequent vaccination will be provided (2nd and 3rd doses) in the nearest preventive health centre.

6.11 Virology Unit of Central Public Health Laboratory (CPHL)

6.11.1 Perform HCP pre-employment virology investigations (e.g. HBV, HCV, HIV) taken by General Medical Council

6.11.2 Perform laboratory testing of anti-HBs titer of HCP after 1-2 months from completing the set of 3 HBV doses.

6.11.3 Report back all virology results to General Medical Council & Public Health Department to continue assignment and for residency roles and regulation.

6.11.4 Perform and report results of baseline testing of exposed HCP to Preventive Medicine units in hospitals.

6.11.5 Perform and report HBsAg and anti-HCV test results of source individuals to Preventive Medicine units in hospitals.

6.11.6 Perform and report (source individuals or HCP) HIV test result to the National AIDS Control Office.

6.12 AIDS Control Office

Send HIV positive test results to Preventive Medicine Physicians and ID specialist (Confidential reporting system)

6.13 Heads of Departments /Head of related unit

6.13.1 Ensure that this policy, and its associated procedures and guidelines are implemented within their areas of responsibility.

6.13.2 keep a copy of the NSI/ BBE form of the exposed HCP

6.14 Infection Prevention and Control

6.14.1 Receive and keep a copy of NSI/ BBE form for future reference.

6.14.2 Investigate the incident as soon as possible for identification of infection control breach and institution of corrective measures.

6.14.3 NSI/ BBE data management according to EPINet surveillance system

6.14.4 Issue an annual report of exposure incidents with recommendations.

7. Procedure

7.1 Prevention of sharp and splash injuries

7.1.1 Immunization

7.1.1.1 All HCP included in the undersecretary of public health decree (36/1990) and the amendments in the decree (2056/1994) should receive 3 doses of HBV vaccine and tested for anti-HBs 1–2 months after the third dose.

7.1.1.2 Test for response to the vaccine (Anti-HBs)

- If anti-HBs ≥ 10 mIU/mL (positive), the individual is immune. No further serologic testing or vaccination is recommended.
- If anti-HBs <10 mIU/mL (negative), the individual is considered susceptible to HBV infection and should be revaccinated with a 3-dose series. Retest anti-HBs 1–2 months after the third dose:
- If anti-HBs is negative after 6 doses of vaccine, HCP is a non-responder and should be counselled and medically evaluated.

7.1.1.3 Anti-HBs testing is not recommended routinely for previously vaccinated HCP who were not tested 1–2 months after their original vaccine series. These HCP should be tested for anti-HBs when they have an exposure to blood or body fluids. If found to be anti-HBs negative, the HCP should be treated as susceptible.

7.1.2 Exposure control measures

The hierarchy of controls from most effective to least effective include:

7.1.2.1 Hazard Elimination/ Substitution:

Elimination is the most effective measure by complete removal of a hazard from the work area.

7.1.2.2 Engineering Controls:

- Sharps containers: A sharp container should be leak and puncture resistant, placed within arm's reach in a secured area, and sealed. It is replaced when it is three-quarters full ***(Appendix H).***

- Safety engineered device: A sharp device with integrated engineered feature to prevent sharp injury e.g., eliminate the need for a needle (substitution); permanently isolate the needle so that it poses no hazard; or provide means to encase a needle after use ***(Appendix I).***
- Lighting, and regular checks of the instruments or equipment.

7.1.2.3 Administrative Controls:

These are policies and training aiming at prevention of occupational exposure.

7.1.2.4 Work Practice Controls

a. Standard precautions should be followed all the time, hand hygiene is a major component of standard precautions. HCP should also check for cuts or abrasions on exposed parts of the body, and use waterproof dressings to cover.

b. Safe handling of sharps and injection equipment ***(Appendix J).*** Cleaning and decontamination of equipment and environment ***(Appendix K).***

c. When dealing with a known infectious case or there is risk of leakage of body fluids, linen should be placed in clear heat sensitive plastic bag. Bags for linen should be only three-quarters filled and secured prior to transport to laundry.

d. Specimens from patients with known or suspected BBV should be labeled "Biohazards" and transported in sealable transparent plastic bags.

e. Waste management requires trained personnel, foot-operated receptacles, clearly marked sharp containers, and color-coded waste bags, inactivation of on-site autoclaving of microbial cultures in Labs before transport and safe disposal of blood, suctioned fluids, tissues, excretions, and secretions.

f. For body handling and disposal, standard precautions should be used all time. Wear PPE as necessary. Drainage tube sites and open wounds should be covered

by waterproof dressings. Ensure there are no sharps remaining. Place all bodies in a cadaver bag and for infectious cases, a yellow sticker should be attached to dead body, body bag and mortuary sheet.

7.1.2.5 Personal Protective equipment (PPE)

PPE should be worn when there is a risk of contact with blood/body fluids.

7.2 Risk assessment

7.2.1 The exposure is evaluated for the potential to transmit HBV, HCV, and HIV based on the type of body substance involved and the route and severity of the exposure ***(Table 1)***.

7.2.2 The risk assessment should not be carried out by the individual who has sustained the injury.

7.2.3 Exposures to blood, fluid containing visible blood, or other potentially infectious fluid or tissue through needlestick or other penetrating sharp-related event or contact with a mucous membrane pose a risk for BBV transmission and require evaluation.

7.2.4 For HCV and HIV, exposure to a blood-filled hollow needle or visibly bloody device suggests a higher risk exposure than exposure to a needle that was most likely used for giving an injection. In addition, any direct contact with concentrated virus in a research laboratory is considered an exposure that requires clinical evaluation.

7.2.5 For skin exposure, follow-up is indicated only if it involves exposure to a body fluid listed in ***table 1*** and evidence exists of compromised skin integrity (e.g., dermatitis, abrasion, or open wound).

7.2.6 Significant occupational exposures

To be considered significant, one of the fluids listed below must come into contact with tissue in one of the following ways:

- Percutaneous injury: needle stick, puncture or cut with a sharp object.
- Contact with mucous membranes: splash to eyes, nose or mouth.
- Contact with non-intact skin: prolonged or extensive contact of exposed skin, which is chapped or abraded, with blood or other potentially infectious body fluids.

The factors considered in assessing occupational exposure to BBVs are presented in ***(table 1)***.

Table 1. Factors to consider in assessing the need for follow-up of occupational exposures	
Type of exposure	• Percutaneous injury • Mucous membrane exposure • Nonintact skin exposure • Bites resulting in blood exposure to either person involved
Type and amount of fluid/tissue	• Blood • Fluids containing blood • Direct contact with concentrated virus • Potentially infectious fluid or tissue (semen; vaginal secretions; and cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids)
Infectious status of source	• Presence of HBsAg • Presence of HCV antibody • Presence of HIV antibody
Susceptibility of exposed person	• Hepatitis B vaccine and vaccine response status • HBV, HCV, and HIV immune status
High risk patient	• Clinical evidence of AIDS or symptoms of HIV infection • A known close contact of a Hepatitis B, Hepatitis C, or HIV positive individual. • Had unprotected sex with someone who has a BBV. • Sharing injecting equipment with someone who has a BBV

7.3 Post Exposure Management

7.3.1 Immediate measures following exposure:

a. Wash with soap and water.

b. Flush splashes to the nose, mouth, or skin with water.

c. Irrigate eyes with clean water, saline, or sterile irrigants.

d. No evidence of benefit of the following to reduce transmission of BBVs

– application of antiseptics or disinfectants of puncture site

– squeezing (“milking”) puncture sites

7.3.2 Prompt reporting of the exposure incident to In-Charge person.

7.3.3 Risk assessment and deciding PEP by the Preventive Medicine physician/ Causality physician

7.3.3.1 Evaluate exposure source

Information available in the medical record at the time of exposure e.g., laboratory test results, clinical diagnosis, or previous medical history might confirm or exclude BBV infection.

7.3.3.1.1 When the source patient is known

- Blood sample must be obtained after informed consent either from the source individual or, in the case of a minor, from his guardian. Confidentiality of the source person should be maintained at all times.
- Test for HBsAg, anti-HCV, and HIV antibody as soon as possible.
- Consider rapid HIV-antibody test if testing by Enzyme immunoassay cannot be completed within 24-48 hours.
- If the source person is not infected with a BBV, baseline testing or further follow-up of the exposed HCP is not necessary
- For patients who cannot be tested, consider medical diagnoses, clinical symptoms, and history of risk behaviours
- Any persons determined to be infected should be referred for appropriate counselling and treatment

7.3.3.1.2 When the source patient is NOT known

- Evaluate the likelihood of high risk exposure: (a needle visibly contaminated with the patient's blood is considered a high risk).
- Review the prevalence of HBV, HCV, or HIV in the population (exposure in a geographic area where injection-drug use is prevalent would have a high risk for transmission).
- Do not test discarded needles for BBVs; the reliability of this test is not known.

7.3.3.1.3 If the source person is known to have HIV infection

- Available information on the person's stage of infection (i.e., asymptomatic, symptomatic, or AIDS), CD4+ T-cell count, viral load, current and previous antiretroviral therapy, and any genotypic or phenotypic viral resistance should considered in choosing the appropriate PEP regimen. If such information is not available, initiation of PEP -if indicated- should not be delayed.
- Changes in the PEP regimen can be made after PEP has been started, as appropriate.
- Re-evaluation of exposed HCP should be considered within 72 hours postexposure, especially as additional information about the exposure or source person becomes available.

7.3.3.1.4 If the source person is HIV negative and has no clinical evidence of AIDS or symptoms of HIV infection

- No further testing of the person for HIV infection is indicated

7.3.3.2 Evaluate the exposed HCP

Baseline serologic testing for HBV, HCV and HIV of exposed HCPs should be performed for all significant exposures taking into account the following:

◊ HBV
- Test for anti-HBs if HCP has been vaccinated, but vaccine response is unknown
- Baseline testing not necessary if vaccine response is known

◊ HCV:
- If HCV positive source, test exposed HCP for anti-HCV and ALT
- If source not infected, baseline testing not necessary

◊ HIV:
- Baseline HIV antibody for significant occupational exposures

7.3.4 Post Exposure prophylaxis(PEP)

7.3.4.1 Exposures to HBV: (Table 2)

- When HBIG is indicated, it should be administered as soon as possible after exposure (preferably within 24 hours). The effectiveness of HBIG when administered >7 days after exposure is unknown. When hepatitis B vaccine is indicated, it should also be administered as soon as possible (preferably within 24 hours) and can be administered simultaneously with HBIG at a separate site (vaccine should always be administered in the deltoid muscle).
- For exposed persons who are in the process of being vaccinated but have not completed the vaccination series, vaccination should be completed as scheduled, and HBIG should be added as indicated .
- Persons exposed to HBsAg-positive blood or body fluids who are known not to have responded to a primary vaccine series (anti HBs≤ 10mIU/mL), should receive a single dose of HBIG and reinitiate the hepatitis B vaccine series with the first dose of the hepatitis B vaccine as soon as possible after exposure.

  Alternatively, they should receive two doses of HBIG, one dose as soon as possible after exposure, and the second dose 1 month later. The option of administering one dose of HBIG and reinitiating the vaccine series is preferred for non-responders who did not complete 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.
- HCP who are pregnant or breast-feeding can receive the hepatitis B vaccine and/or HBIG. Pregnant HCP who are exposed to blood should be vaccinated against HBV infection, because infection during pregnancy can cause severe illness in the mother and a chronic infection in the newborn. The vaccine does not harm the fetus

Table 2 Recommended postexposure prophylaxis for exposure to hepatitis B virus

Vaccination and antibody response status of exposed HCP*	Treatment		
	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 responder[1]	No treatment	No treatment	No treatment
Known nonresponder[2]	HBIG x 1 and initiate revaccination or HBIG x 2††	No treatment	If known high risk source, treat as if source were 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	No treatment	Test exposed HCP for anti-HBs** 1.If adequate,[1] no treatment is necessary 2.If inadequate,[2] administer vaccine booster and recheck titer in 1-2 months

CDC. MMWR 2001;50 (RR11):22

§Hepatitis B surface antigen.

* 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 .

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

[2] A nonresponder 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 nonresponders 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 Hbs Ag

7.3.4.2 Exposures to HCV

- For the person exposed to an HCV-positive source
  - Perform baseline testing for anti-HCV and ALT activity; and
  - Perform follow-up testing (e.g., at 4–6 months) for anti-HCV and ALT activity (if earlier diagnosis of HCV infection is desired, testing for HCV RNA may be performed at 4–6 weeks).
- Immunoglobulin and antiviral agents are not recommended for PEP after exposure to HCV-positive blood.

7.3.4.3 Exposures to HIV (Fig 1):

- If testing the source patient is delayed, PEP should still be initiated while awaiting test results. If the source is found to be HIV negative, PEP should be discontinued.
- Serologic testing for HIV at baseline, six weeks, three months, and six months following the exposure with or without prophylaxis is important to identify HIV seroconversion. The vast majority of individuals who seroconvert will do so within the first three months.
- In general, exposure can be categorized into low or high risk depending on the nature of the exposure and the HIV disease in the source:
  a) Low risk percutaneous exposure: Low risk sharps injuries are those that occur through a solid needle, appear superficial, and occur from a low-risk source, such as a patient with an HIV viral load <1500 copies/ ml.
  b) High risk percutaneous exposure: High risk sharps injuries include those from a hollow bore needle, from a device with the presence of visible blood, or form a needle that was in an artery or vein of the source patient.
  c) Mucocutaneous exposures: These are considered low risk except large volumes of blood from a source who has a plasma HIV viral load >1500copies/ml.

- People potentially exposed HIV should also be advised to seek medical examination if they develop symptoms consistent with primary HIV infection, often described as a “mononucleosis-like syndrome”. The most common findings are fever, lymphadenopathy, sore throat, mucocutaneous lesions, myalgia/ arthralgia, diarrhea, headache, nausea/vomiting, and weight loss. The usual time from HIV exposure to the development of symptoms is two to four weeks. HIV viral load testing should be performed in these patients to diagnose acute retroviral syndrome.
- PEP medications of HCP:
  Combination therapy of Truvada (emtricitabine / tenofovir disoproxil fumarate) plus Isentress (raltegravir) is recommended. PEP should be initiated as quickly as possible. The goal is to start within in one to two hours or earlier after exposure(Table 3)
- PEP options for drug-resistant virus:
  When the source of an occupational HIV exposure is infected with resistant virus, specialist consultation is advised. An HIV specialist can help design the appropriate regimen by considering the results of resistance testing for the source patient on the current Antiretroviral Therapy (ART) regimen.

Table 3 Recommended Antiretroviral Drug Regimens in Cases of Postexposure Prophylaxis

	Truvada (Emtricitabine/Tenovofovir)	Isentress (Raltegravir)
Dose	1 tab (200/300 mg)	1 tab (400 mg)
Route	PO	PO
Frequency	Once/day	Twice/ day
Relation to meals	None	None
Duration	28 days	28 days
Applicable for Pregnant HCP	Yes	Yes
Dose adjustment in renal disease	Cl cr ≥ 50 mL / minute: No dose adjustment necessary. Cl cr 30 - 49 mL / minute: Increase interval to every 48 hours. Cl cr < 30 mL / minute or hemodialysis: Not recommended.	No dose adjustment required, for any stage of renal impairment
Side effects	In most cases, side effects are absent or are mild. Nausea and fatigue, headache, vomiting, and diarrhea, if they do occur, treat the symptoms with the proper relevant medications	

Figure 1: IMMEDIATE RISK ASSESSMENT OF SHARP AND SPLASH INJURY FOR HIV PROPHYLAXIS

High Risk Exposure incident:

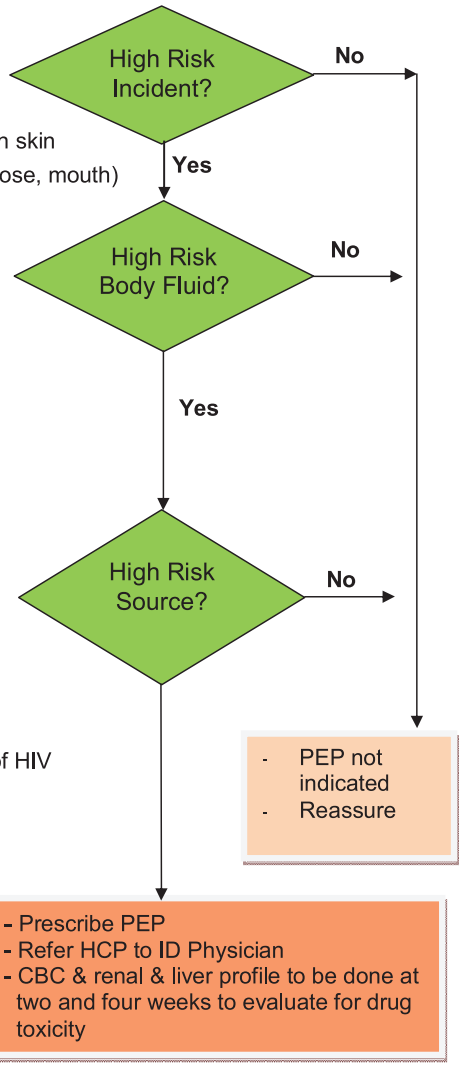
- Percutaneous from sharp device eg, needle stick/surgical instrument scratch, drawing blood/ other penetrating sharp
- Mucocutaneous e.g. Body fluid on broken skin Body fluid on mucous membrane (eye, nose, mouth)

High Risk Body Fluid:

- Blood
- Amniotic fluid
- Human breast milk
- CSF, pleural, pericardial peritoneal
- synovial fluid
- Saliva associated with dentistry
- Semen/vaginal secretions
- Unfixed tissues/organs
- Vomit, faeces, urine only when contaminated with blood
- Direct contact with concentrated virus

High Risk Source:

Known HIV positive



<u>Consider also those at risk of HIV:</u>

- Clinical evidence of AIDS or symptoms of HIV infection
- A known close contact of a Hepatitis B, Hepatitis C, or HIV positive individual
- Those from endemic areas (South,East or central Africa)
- Sex between Men
- Multiple blood transfusions < 1985
- Transfusions abroad
- IV Drug user
- Unprotected sex with HIV+ or at risk partner

<u>Starter first dose</u>

Truvada 1 tablet/ day

+

Isentress 1 tablet twice / day

7.4 Exposure follow-up testing and counseling

7.4.1 HBV

- Because post-exposure treatment is highly effective in preventing HBV infection, CDC does not recommend routine follow-up after treatment.
- If symptoms suggestive of hepatitis develop, (e.g., jaundice, loss of appetite, nausea, vomiting, fever, stomach or joint pain, extreme tiredness) the patient must report to the healthcare provider.
- If HCP receives hepatitis B vaccine, HCP should be tested for Anti-HBs titer 1-2 months after completing the vaccine series to determine if he has responded to the vaccine and protected against HBV infection.
- The exposed HCP does not need to modify sexual practices or refrain from becoming pregnant. An exposed nursing mother might continue to breastfeed
- Advise exposed HCP to refrain from donating blood, plasma, organs, tissue, or semen until follow-up testing by the healthcare provider has excluded seroconversion

7.4.2 HCV

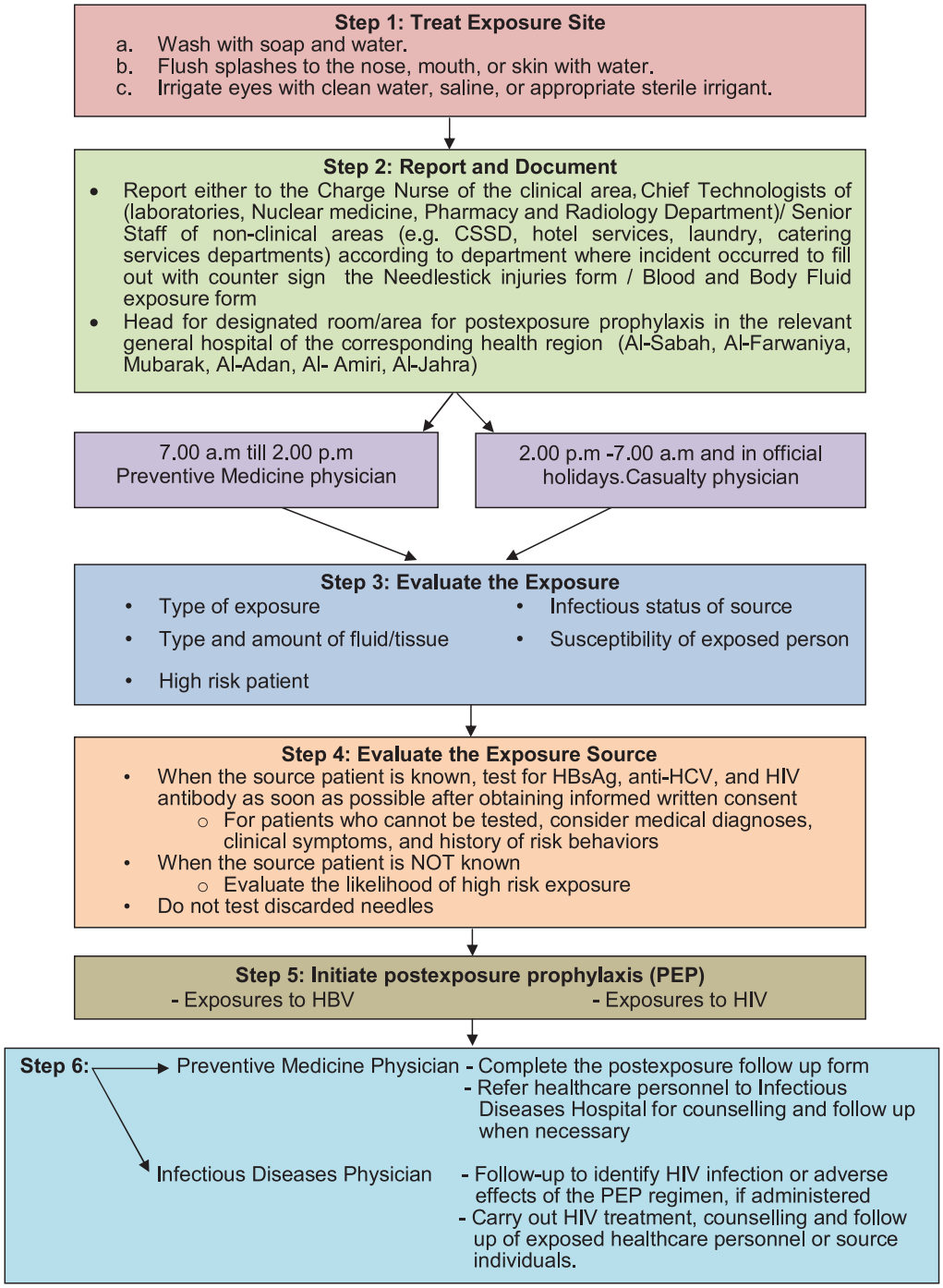
- Repeat test for anti-HCV and alanine aminotransferase (ALT) at least 4-6 months post exposure
- To check for infection earlier, HCP can be tested for the virus (HCV-RNA) 4-6 weeks after the exposure. Report any symptoms suggesting hepatitis to your healthcare provider.
- The exposed HCP does not need to modify sexual practices or refrain from becoming pregnant. An exposed nursing mother might continue to breastfeed
- Advise exposed HCP to refrain from donating blood, plasma, organs, tissue, or semen until follow-up testing by the health-care provider has excluded seroconversion

7.4.3 HIV

- With percutaneous or sharps injuries form an HIV-infected source, the risk of HIV infection averages 3/1000, but varies greatly depending on the inoculum size, the depth of penetration, and exposure to a hollow bore versus suture needle.

- Exposure of source blood to intact skin is considered “no risk”. There are no confirmed cases of HIV transmission in HCP with skin abrasions, cuts, sores, or other breaches in skin integrity.
- All documented transmissions have involved source blood, bloody body fluids, or laboratory cultures of HIV.
- The risk is likely considerably lower if the source has unknown HIV status or if prior tests were negative.
- The HCP may also be at risk for other blood borne pathogens such as hepatitis B or C.
- The goal is to initiate PEP within one to two hours of exposures. It is thought that benefit of PEP is greatly diminished after 24 -36 hours.
- Follow-up is important to identify HIV infection or adverse effects of the PEP regimen, if administered.
- Blood testing for HIV will be done at baseline, six weeks, three months, and six months following exposure. Exposed HCP should report any subsequent febrile or mononucleosis like illness so that they can be evaluated for acute retroviral syndrome.
- For those who opt to take PEP, blood testing (CBC & renal & liver profile) will also be done at two and four weeks to evaluate for drug toxicity.
- For women who are breastfeeding, temporary discontinuation of breastfeeding following exposure until the six months serologic test is negative should be considered. This is to avoid infant exposure to both antiretroviral agents and, should the mother become infected, HIV in breast milk.

7.5 Summary Guide to reporting procedures after the injury



8. Training and orientation

8.1 Training on the appropriate use of PPE, the safe handling and disposal of sharps, standard precautions and the procedures to follow in the event of an injury will be provided by Infection Prevention and Control Team in each hospital.

8.2 Training of the Preventive medicine, Casualty and Infectious Diseases physicians on risk assessment of source individual or exposed HCP, exposure reporting and post exposure management will be provided by the Infection control directorate in collaboration with an Infectious Disease consultant.

9. Important Contact Information

Name	7 Am -2 PM	2 PM -7 AM
Virology Unit of CPHL-Al Shaab	22653631 / 22653651	
AIDS Control Unit	22435107 / 326	
PEP services, hospitals	Preventive Medicine	Casualty Department
• Farwaniya	24888000 / 5850-5851	24892508 24888000 / 5504-6511-6561-6562-6563
• Al- Jahraa	24575300 / 5415	24575300 / 5770
• Al-Adan	23942512 23940600 / 7217	23940600 / 5504-5505
• Al-Amiri	22450005 / 5850 25311431	22450005 / 2081-2082-2062-2063
• Al-Sabah	24812000 / 4258-4447-5850	24812000/5250
• Mubarak Al-Kabeer	25312700 / 5850 - 25311431	25311427
• Infectious Diseases Hospital	24870133-24870351 / 5850 24876652	24870133-24870351 / 4001

10. Monitoring effectiveness and compliance

Compliance with the policy will be evaluated by Needle stick prevention subcommittee of the infection control committee in each hospital.

11. References

11.1 CDC. Immunization of Health-Care Personnel: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR, 2011; 60(RR-7).

11.2 CDC. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis. MMWR 2005;54(RR09):1-17.

11.3 Preventing Needlestick Injuries among Healthcare Workers:A WHO–ICN Collaboration www.ijoeh.com • INT J OCCUP ENVIRON HEALTH VOL 10/NO 4, OCT/DEC 2004 • www.ijoeh.com

11.4 CDC. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis. MMWR Recomm Rep 2001; 50(RR-11): 1-52

11.5 Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program. http://www.cdc.gov/sharpssafety/

Appendix A: Needlestick and Sharp Object Injury Report

Ministry of Health

This form is adopted from Exposure Prevention Information Network (EPINet)

Injury ID: *(for office use only)* S_____ **Completed by:** _____

Name: _____ **Gender:** 1☐ M 2☐ F

Civil ID: _____ **Nationality:** 1☐ K 2☐ NK

Facility name: _____ **Telephone :** _____

Health region: _____

1) Date of injury: ☐☐ ☐☐ ☐☐☐☐ **2) Time of injury:** ☐☐ ☐☐

3) Department where incident occurred: _____

4) Home/Employing department: _____

5) What is the job category of the injured worker? (check one box only)

- ☐ 1 Doctor *(attending/staff)*; specify specialty_____
- ☐ 2 Doctor *(intern/resident/fellow)* specify specialty _____
- ☐ 3 Medical student
- ☐ 4 Nurse: specify ⟹ ☐ 1 RN ☐ 2 LPN ☐ 3 NP ☐ 4 CRNA ☐ 5 Midwife
- ☐ 5 Nursing student
- ☐ 18 CNA/HHA
- ☐ 6 Respiratory therapist
- ☐ 7 Surgery attendant
- ☐ 8 Other attendant
- ☐ 9 Phlebotomist/Venipuncture/IV team
- ☐ 10 Clinical laboratory worker
- ☐ 11 Technologist *(non-lab)*
- ☐ 12 Dentist
- ☐ 13 Dental hygienist
- ☐ 14 Housekeeper
- ☐ 19 Laundry worker
- ☐ 20 Security
- ☐ 16 Paramedic
- ☐ 17 Other student
- ☐ 15 Other, describe: _____

6) Where did the injury occur? (check one box only)

- ☐ 1 Patient room
- ☐ 2 Outside patient room *(hallway, nurses station, etc.)*
- ☐ 3 Emergency department
- ☐ 4 Intensive/Critical care unit: specify type: _____
- ☐ 5 Operating room/Recovery
- ☐ 6 Outpatient clinic/Office
- ☐ 7 Blood bank
- ☐ 8 Venipuncture room
- ☐ 9 Dialysis facility *(hemodialysis and peritoneal dialysis)*
- ☐ 10 Procedure room *(x-ray, EKG,etc)*
- ☐ 11 Clinical laboratories
- ☐ 12 Autopsy/Pathology
- ☐ 13 Service/Utility *(laundry,central supply, etc)*
- ☐ 16 Labor and delivery room
- ☐ 17 Home-care
- ☐ 14 Other, describe: _____

7) Was the source patient identifiable? (check one box only)

☐ 1 Yes ☐ 2 No ☐ 3 Unknown ☐ 4 Not applicable

8) Was the injured worker the original user of the sharp item? (check one box only)

☐ 1 Yes ☐ 2 No ☐ 3 Unknown ☐ 4 Not applicable

9) The sharp item was: (check one box only)

- ☐ 1 Contaminated (known exposure to patient or contaminated equipment) ⟹ **was there blood on the device?** ☐ 1 Yes ☐ 2 No
- ☐ 2 Uncontaminated (no known exposure to patient or contaminated equipment)
- ☐ 3 Unknown

10) For what purpose was the sharp item originally used? (check one box only)

- ☐ 1 Unknown/Not applicable
- ☐ 2 Injection, intra-muscular/subcutaneous, or other injection through the skin *(syringe)*
- ☐ 3 Heparin or saline flush *(syringe)*
- ☐ 4 Other injection into *(or aspiration from)* IV injection site or IV port *(syringe)*
- ☐ 5 To connect IV line *(intermittent IV/piggyback/IV infusion/other IV line connection)*
- ☐ 6 To start IV or set up heparin lock *(IV catheter or winged set-type needle)*
- ☐ 16 To place an arterial /central line
- ☐ 9 To obtain a body fluid or tissue sample *(urine/CSF/amniotic fluid/other fluid, biopsy)*
- ☐ 10 Finger stick/Heel stick
- ☐ 11 Suturing
- ☐ 12 Cutting
- ☐ 17 Drilling
- ☐ 13 Electrocautery
- ☐ 14 To contain a specimen or pharmaceutical *(glass item)*
- ☐ 15 Other; describe

_____

- ☐ 7 To draw venous blood sample
- ☐ 8 To draw arterial blood sample ⟹ **if used to draw blood was it?** ☐ 1 Direct stick? ☐ 2 Draw from a line?

11) Did the injury occur? (check one box only)

- ☐ 1 Before use of item *(item broke/slipped, assembling device, etc.)*
- ☐ 2 During use of item *(item slipped, patient jarred item, etc)*
- ☐ 15 Restraining patient
- ☐ 3 Between steps of a multi-step procedure *(between incremental injections, passing instruments, etc.)*
- ☐ 16 Device left on floor, table, bed or other inappropriate place
- ☐ 8 Other after use-before disposal *(in transit to trash, cleaning, sorting, etc.)*
- ☐ 9 From item left on or near disposal container
- ☐ 10 While putting item into disposal container

- ☐ 4 Disassembling device or equipment
- ☐ 5 In preparation for reuse of reusable instrument *(sorting, disinfecting, sterilizing, etc.)*
- ☐ 6 While recapping used needle
- ☐ 7 Withdrawing a needle from rubber or other resistant material *(rubber stopper, IV port, etc.)*
- ☐ 11 After disposal, stuck by item protruding from opening of disposal container
- ☐ 12 Item pierced side of disposal container
- ☐ 13 After disposal, item protruded from trash bag or inappropriate waste container
- ☐ 14 Other: describe: _____

12) What type of device caused the injury? (check one box only)

- ☐ Needle-*hollow-bore*
- ☐ Surgical
- ☐ Glass

Which device caused the injury? (check one box from one of the three sections only)

Needles *(for suture needles see "**surgical instruments**")*

- ☐ 1 Disposable syringe
  - ☐ a Insulin
  - ☐ b Tuberculin
  - ☐ c 24/25-gauge needle
  - ☐ d 23-gauge needle
  - ☐ e 22-gauge needle
  - ☐ f 21-gauge needle
  - ☐ g 20-gauge needle
  - ☐ h "Other"
- ☐ 2 Pre-filled cartridge syringe (includes Tubex™, Carpuject ™ -type syringes)
- ☐ 3 Blood gas syringe (ABG)
- ☐ 4 Syringe, other type
- ☐ 5 Needle on IV line *(includes piggybacks & IV line connectors)*
- ☐ 6 Winged steel needle *(includes winged-set type devices)*
- ☐ 7 IV catheter stylet
- ☐ 8 Vacuum tube blood collection holder/needle *(includes Vacutainer™–type device)*
- ☐ 9 Spinal or epidural Needle
- ☐ 10 Unattached hypodermic needle
- ☐ 11 Arterial catheter introducer needle
- ☐ 12 Central line catheter needle *(cardiac, etc.)*
- ☐ 13 Drum catheter needle
- ☐ 14 Other vascular catheter needle *(cardiac, etc.)*
- ☐ 15 Other non-vascular catheter needle *(ophthalmology, etc.)*
- ☐ 28 Needle, not sure what kind
- ☐ 29 Other needle, please describe: _____

Surgical instrument or other sharp items *(for glass items see "**glass**")*

- ☐ 30 Lancet (finger or heel sticks)
- ☐ 31 Suture needle
- ☐ 32 Scalpel, reusable *(scalpel, disposable code is 45)*
- ☐ 33 Razor
- ☐ 34 Pipette *(plastic)*
- ☐ 35 Scissors
- ☐ 36 Electro-cautery device
- ☐ 37 Bone cutter
- ☐ 38 Bone chip
- ☐ 39 Towel clip
- ☐ 40 Microtome blade
- ☐ 41 Trocar
- ☐ 42 Vacuum tube *(plastic)*
- ☐ 43 Specimen/Test tube *(plastic)*
- ☐ 44 Fingernails/Teeth
- ☐ 45 Scalpel, disposable
- ☐ 46 Retractors, skin/bone hooks
- ☐ 47 Staples/Steel sutures
- ☐ 48 Wire *(suture/fixation/guide wire*
- ☐ 49 Pin *(fixation, guide pin)*
- ☐ 50 Drill bit/bur
- ☐ 51 Pickups/Forceps/Hemostats/Clamps
- ☐ 58 Sharp item, not sure what kind
- ☐ 59 Other sharp item: Describe: _____

Glass

- ☐ 60 Medication ampule
- ☐ 61 Medication vial *(small volume with rubber stopper)*
- ☐ 62 Medication/IV bottle *(large volume)*
- ☐ 63 Pipette *(glass)*
- ☐ 64 Vacuum tube *(glass)*
- ☐ 65 Specimen/Test tube *(glass)*
- ☐ 66 Capillary tube
- ☐ 67 Glass slide
- ☐ 78 Glass item, not sure what kind
- ☐ 79 Other glass item: Describe: _____

12a) Brand/Manufacturer of product: (e.g. ABC Medical Company) _____

12b) Model:

- ☐ 98 Please specify: _____
- ☐ 99 Unknown

13) If the item causing the injury was a needle or sharp medical device, was it a" safety design" with a shielded, recessed, retractable, or blunted needle or blade?

- ☐ 1 Yes
- ☐ 2 No
- ☐ 3 Unknown

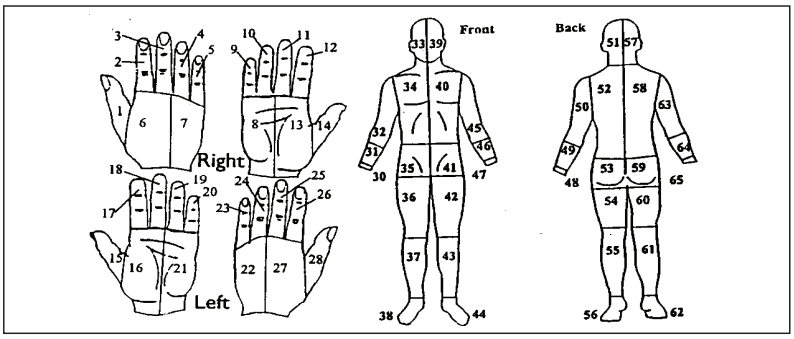
13a) Was the protective mechanism activated?

- ☐ 1 Yes, fully
- ☐ 2 Yes, partially
- ☐ 3 No
- ☐ 4 Unknown

13b) Did injury incident happen?

- ☐ 1 Before activation
- ☐ 2 During activation
- ☐ 3 After activation
- ☐ 4 Unknown

14) Mark the location of the injury:



15) Was the injury?

- ☐ 1 Superficial *(little or no bleeding)*
- ☐ 2 Moderate *(skin punctured, some bleeding)*
- ☐ 3 Severe *(deep stick/cut, or profuse bleeding*)

16) If injury was to the hand, did the sharp item penetrate?

- ☐ 1 Single pair of gloves
- ☐ 2 Double pair of gloves
- ☐ 3 No gloves

17) Dominant hand of the injured worker:

- ☐ 1 Right-handed
- ☐ 2 Left-handed

18) Describe the circumstances leading to this injury *(please note if a device malfunction was involved*)**:**

_____

_____

_____

19) For injured healthcare worker: If the sharp had no integral safety feature, do you have an opinion that such a feature could have prevented the injury? ☐ 1 Yes ☐ 2 No ☐ 3 Unknown

Describe: _____

_____

_____

_____

20) For injured healthcare worker: Do you have an opinion that any other engineering control, administrative or work practice could have prevented the injury? ☐ 1 Yes ☐ 2 No ☐ 3 Unknown

Describe: _____

_____

_____

_____

Cost:

_____ Lab charges (Hb, HCV, HIV, other)
_____ Healthcare worker
_____ Source
_____ Treatment prophylaxis (HBIG, Hb vaccine, tetanus, other)
_____ Healthcare worker
_____ Source
_____ Service charges (Emergency Dept, Employee Health, other)
_____ Other costs (Worker's Comp, surgery, other)
_____ TOTAL (round to nearest KD)

Appendix B: Blood and Body Fluid Exposure Report

Ministry of Health

This form is adopted from Exposure Prevention Information Network (EPINet)

Exposure ID: *(for office use only)* **B**_____ **Completed by**: _____

Name: _____ **Gender:** 1☐ **M** 2☐ **F**

Civil ID: _____ **Nationality:** 1☐ **K** 2☐ **NK**

Facility name: _____ **Telephone :** _____

Health region: _____

1) Date of exposure: ☐☐ ☐☐ ☐☐☐☐ **2) Time of exposure:** ☐☐ ☐☐

3) Department where incident occurred: _____

4) Home/Employing department: _____

5) What is the job category of the exposed worker? (check one box only)

- ☐ 1 Doctor *(attending/staff)*; specify specialty _____
- ☐ 2 Doctor *(intern/resident/fellow)* specify specialty _____
- ☐ 3 Medical student
- ☐ 4 Nurse: specify ⟹ ☐ 1 RN ☐ 2 LPN ☐ 3 NP ☐ 4 CRNA ☐ 5 Midwife
- ☐ 5 Nursing student
- ☐ 18 CNA/HHA
- ☐ 6 Respiratory therapist
- ☐ 7 Surgery attendant
- ☐ 8 Other attendant
- ☐ 9 Phlebotomist/Venipuncture/IV team
- ☐ 10 Clinical laboratory worker
- ☐ 11 Technologist *(non-lab)*
- ☐ 12 Dentist
- ☐ 13 Dental hygienist
- ☐ 14 Housekeeper
- ☐ 19 Laundry worker
- ☐ 20 Security
- ☐ 16 Paramedic
- ☐ 17 Other student
- ☐ 15 Other, describe: _____

6) Where did the exposure occur? (check one box only)

- ☐ 1 Patient room
- ☐ 2 Outside patient room *(hallway, nurses station, etc.)*
- ☐ 3 Emergency department
- ☐ 4 Intensive/Critical care unit: specify type: _____
- ☐ 5 Operating room/Recovery
- ☐ 6 Outpatient clinic/Office
- ☐ 7 Blood bank
- ☐ 8 Venipuncture room
- ☐ 9 Dialysis facility *(hemodialysis and peritoneal dialysis)*
- ☐ 10 Procedure room *(x-ray, EKG,etc)*
- ☐ 11 Clinical laboratories
- ☐ 12 Autopsy/Pathology
- ☐ 13 Service/Utility *(laundry,central supply, etc)*
- ☐ 16 Labor and delivery room
- ☐ 17 Home-care
- ☐ 14 Other, describe: _____

7) Was the source patient identifiable? (check one box only)

☐ 1 Yes ☐ 2 No ☐ 3 Unknown ☐ 4 Not applicable

8) Which body fluids were involved in the exposure? (check all that apply)

- ☐ Blood or blood products
- ☐ Vomit
- ☐ Sputum
- ☐ Saliva
- ☐ CSF
- ☐ Peritoneal fluid
- ☐ Pleural fluid
- ☐ Amniotic fluid
- ☐ Urine
- ☐ Other, describe: _____

8a) Was the body fluid visibly contaminated with blood? ☐ Yes ☐ No ☐ Unknown

9) Was the exposed part? (check all that apply)

- ☐ Intact skin
- ☐ Non-intact skin
- ☐ Eyes (*conjunctiva*)
- ☐ Nose (*mucosa*)
- ☐ Mouth (*mucosa*)
- ☐ Other, describe: _____

10) Did the blood or body fluid? (check all that apply)

- ☐ Touch unprotected skin
- ☐ Touch skin between gap in protective garments
- ☐ Soak through barrier garment or protective garment
- ☐ Soak through clothing

11) Which barrier garments were worn at the time of exposure? (check all that apply)

- ☐ Single pair latex/vinyl gloves
- ☐ Double pair latex/vinyl gloves
- ☐ Goggles
- ☐ Eyeglasses *(not a protective item)*
- ☐ Eyeglasses with side shields
- ☐ Face shield
- ☐ Surgical mask
- ☐ Surgical gown
- ☐ Plastic apron
- ☐ Lab coat, cloth *(not a protective garment)*
- ☐ Lab coat, other, describe: _____
- ☐ Other, describe: _____

12) Was the exposure the result of? (check one box only)

- ☐ 1 Direct patient contact
- ☐ 2 Specimen container leaked/spilled
- ☐ 3 Specimen container broke
- ☐ 4 IV Tubing/Bag/Pump leaked/broke
- ☐ 10 Feeding/Ventilator/Other tube separated/leaked/splashed. Specify tubing: _____
- ☐ 5 Other body fluid container spilled/leaked
- ☐ 6 Touched contaminated equipment/surface
- ☐ 7 Touched contaminated drapes/sheets/gowns, etc.
- ☐ 8 Unknown
- ☐ 9 Other, describe: _____

If equipment failure, please specify: **Equipment type**: _____

Manufacturer: _____

13) For how long was the blood or body fluid in contact with your skin or mucous membranes? (check one)

- ☐ 1 Less than 5 minutes
- ☐ 2 5-14 minutes
- ☐ 3 15 minutes to 1 hour
- ☐ 4 More than 1 hour

14) How much blood/body fluid came in contact with your skin or mucous membranes? (check one)

- ☐ 1 Small amount (up to 5 cc, or up to 1 teaspoon)
- ☐ 2 Moderate amount (up to 50 cc, or up to quarter cup)
- ☐ 3 Large amount (more than 50 cc)

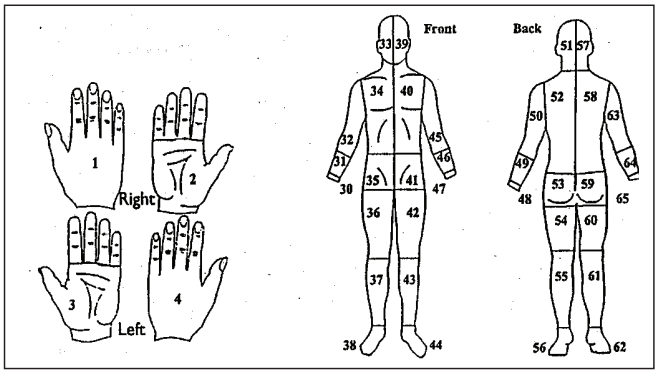
15) Location of the exposure:

Write the number of the location of up to three exposed body parts in the blanks below.

Largest area of exposure: _____

Middle area of exposure: _____

Smallest area of exposure: _____



16) Describe the circumstances leading to this exposure: *(please note if a device malfunction was involved):*

_____

_____

_____

_____

_____

17) For exposed worker: Do you have an opinion that any other engineering control, administrative or work practice could have prevented the exposure? ☐ 1 Yes ☐ 2 No ☐ 3 Unknown

Describe: _____

_____

_____

_____

Cost:

_____ Lab charges *(Hb, HCV, HIV, other tests)*

_____ Healthcare worker

_____ Source

Treatment Prophylaxis *(HBIG, Hb vaccine, tetanus, other)*

_____ Healthcare worker

_____ Source

_____ Service charges *(Emergency dept, Employee health, other)*

_____ Other costs *(Worker's comp, surgery, other)*

_____ TOTAL *(round to nearest KD)*

Appendix C: Post-Exposure Follow-up Report

Ministry of Health

This form is adopted from Exposure Prevention Information Network (EPINet)

Injury ID: (for office use only) _____ **Completed by**: _____

Date of Injury/Exposure: _ _ / _ _ / _ _ _ _

Name: _____ **Gender:** 1☐ M 2☐ F

Civil ID: _____ **Nationality:** 1☐ K 2☐ NK

Facility name: _____ **Telephone :** _____

Health region: _____

Source Patient:

1) Was the source patient identifiable?

☐ 1 source known and tested ☐ 2 source known but not tested, reason: _____ ☐ 3 source not known

2) Was the source patient positive for the pathogens below? (even if tested before this exposure?)

Pathogen	Test *(circle)*	Result *(circle result)*			Date Drawn
Hepatitis B	HbsAg	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _
	HbeAg	1 positive	2 negative	3 not tested	
	Anti HBs	1 positive	2 negative	3 not tested	
	Anti HBc	1 positive	2 negative	3 not tested	
Hepatitis C	Anti-HCV EIA	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _
	PCR-HCV	1 positive	2 negative	3 not tested	
	RNA	1 positive	2 negative	3 not tested	
HIV	Anti-HIV	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _
	#CD4 Cells	count _____		3 not tested	
	Antigen Load	RNA copies/ml _____		3 not tested	
	Other				_ _ / _ _ / _ _ _ _
Other	_____	_____			_ _ / _ _ / _ _ _ _

3) If source patient was believed to be in high risk group for blood borne pathogens, check all that apply:

☐ Blood Product Recipient ☐ Elevated Enzymes ☐ Sexual ☐ Dialysis

☐ Injection Drug Use ☐ Hemophilia ☐ Other, Describe: _____

4) If the source patient was HIV positive, had he been treated with any of the following before exposure?

☐ Unknown ☐ 3TC ☐ IDV

☐ AZT ☐ ddC ☐ Other Anti-Retroviral: _____

5) Additional source patient comments: _____

Health Care Worker:

1) Health Care Worker was seen by: ☐ 1 Preventive Health ☐ 2 Emergency Room ☐ 3 Other, Describe: _____

2) Was the Health Care Worker Vaccinated against HBV before exposure?

☐ 0 No doses ☐ 1-Dose ☐ 2-Doses ☐ 3-Doses ☐ 4-Doses ☐ 99 More than 4

If yes, anitbody level upon completion, if tested: _____ *Date tested:* _ _ / _ _ / _ _ _ _

2a) Was Health Care Worker Pregnant? ☐ 1 Yes ☐ 2 No ☐ 3 Not Applicable

If yes, which trimester? ☐ 1 First ☐ 2 Second ☐ 3 Third

3) Results of baseline tests:

Pathogen	Test *(circle)*	Result *(circle result)*			Date Drawn	# Days to Next Test
Hepatitis B	HbsAg	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	HbeAg	1 positive	2 negative	3 not tested		____
	Anti HBs	1 positive	2 negative	3 not tested		____
	Anti HBc	1 positive	2 negative	3 not tested		____
Hepatitis C	Anti-HCV EIA	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti-HCV supp.	1 positive	2 negative	3 not tested		____
	_____	1 positive	2 negative	3 not tested		____

HIV	Anti-HIV	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
Other	_____	_____			_ _ / _ _ / _ _ _ _	____
Other	_____	_____			_ _ / _ _ / _ _ _ _	____

4) Circle all Post Exposure Treatment/Prophylaxis Given to the Health Care Worker and FILL IN THE DOSAGES

Treatment	Dose	Date Given	Duration/Comments
HBIG	1. _____	_ _ / _ _ / _ _ _ _	_____
	2. _____	_ _ / _ _ / _ _ _ _	_____
HBV Vaccine	1. _____	_ _ / _ _ / _ _ _ _	_____
	2. _____	_ _ / _ _ / _ _ _ _	_____
	3. _____	_ _ / _ _ / _ _ _ _	_____
	Booster: _____	_ _ / _ _ / _ _ _ _	_____
HIV Antiretroviral Specify: _____		_ _ / _ _ / _ _ _ _	_____
HIV Antiretroviral Specify: _____		_ _ / _ _ / _ _ _ _	_____
HIV Antiretroviral Specify: _____		_ _ / _ _ / _ _ _ _	_____
Other, Specify _____		_ _ / _ _ / _ _ _ _	_____

5) Result of Follow-Up Tests: (Space provided for repeated test results)

Pathogen	Test *(circle)*	Result *(circle result)*			Date Drawn	# Days to Next Test
Hepatitis B	Panel 1					
	HbsAg	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti HBs	1 positive	2 negative	3 not tested		____
	Anti HBc	1 positive	2 negative	3 not tested		____
	Panel 2					
	HbsAg	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti HBs	1 positive	2 negative	3 not tested		____
	Anti HBc	1 positive	2 negative	3 not tested		____
	Panel 3					
	HbsAg	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti HBs	1 positive	2 negative	3 not tested		____
	Anti HBc	1 positive	2 negative	3 not tested		____
Hepatitis C	Anti-HCV (test 1)	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti-HCV (test 2)	1 positive	2 negative	3 not tested		____
HIV	Anti-HIV (test 1)	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti-HIV (test 2)	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti-HIV (test 3)	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
	Anti-HIV (test 4)	1 positive	2 negative	3 not tested	_ _ / _ _ / _ _ _ _	____
Other	_____	_____			_ _ / _ _ / _ _ _ _	____
Other	_____	_____			_ _ / _ _ / _ _ _ _	____

6) Additional Comments:

_____
_____
_____
_____
_____
_____
_____

7) Follow up of prophylaxis
Serological results

Time	Date	HIV	HBsAG	HCV
_____	_ _ / _ _ / _ _ _ _	_____	_____	_____
_____	_ _ / _ _ / _ _ _ _	_____	_____	_____
_____	_ _ / _ _ / _ _ _ _	_____	_____	_____

Follow up of HBV vaccination

- ☐ one dose
- ☐ base vaccination → date _ _ / _ _ / _ _ _ _
  - injection after 1 month → date _ _ / _ _ / _ _ _ _
  - injection after 2 months → date _ _ / _ _ / _ _ _ _
  - injection after 1 year → date _ _ / _ _ / _ _ _ _

Appendix D: Vaccination status completeness for all HCP

شهادة تطعيم للعاملين في المجال الصحي

الاسم: _____ تاريخ الميلاد: ____/____/_____

الرقم القومي: _____ النوع: _____ الجنسية: _____

تاريخ الإلتحاق بالعمل بدولة الكويت: ____/____/_____

هل تم التطعيم ضد إلتهاب الكبد (ب): _____ نعم _____ لا

إذا كانت الإجابة نعم أذكر تاريخ الجرعة الأولي : ____/____/_____ مركز التطعيم: _____

إذا كانت الإجابة نعم أذكر تاريخ الجرعة الثانية : ____/____/_____ مركز التطعيم: _____

إذا كانت الإجابة نعم أذكر تاريخ الجرعة الثالثة : ____/____/_____ مركز التطعيم: _____

نتيجة فحص الأجسام المضادة السطحية للمناعة (بعد استكمال الجرعات): _____ مللي وحدة دولية/ملي لتر

هل تم التطعيم ضد الفاريسيلا: _____ نعم _____ لا

إذا كانت الإجابة نعم أذكر تاريخ الجرعة الأولي : ____/____/_____ مركز التطعيم: _____

إذا كانت الإجابة نعم أذكر تاريخ الجرعة الثانية : ____/____/_____ مركز التطعيم: _____

هل تم التطعيم ضد الحصبة/الحصبة الألمانية/النكاف: _____ نعم _____ لا

إذا كانت الإجابة نعم أذكر تاريخ التطعيم: ____/____/_____ مركز التطعيم: _____

هل تم التطعيم ضد التيتانوس: _____ نعم _____ لا

إذا كانت الإجابة نعم أذكر تاريخ آخر جرعة من التطعيم : ____/____/_____ مركز التطعيم: _____

هل هناك تطعيمات آخري: _____ نعم _____ لا

إذا كانت الإجابة نعم أذكر التطعيم (1): _____ تاريخ التطعيم: ___/___/_____ مركز التطعيم: _____

إذا كانت الإجابة نعم أذكر التطعيم (2): _____ تاريخ التطعيم: ___/___/_____ مركز التطعيم: _____

إذا كانت الإجابة نعم أذكر التطعيم (3): _____ تاريخ التطعيم: ___/___/_____ مركز التطعيم: _____

- ❖ يجب أن يحتفظ العاملين في المجال الصحي بهذه الشهادة وتقديمها عند الحاجة لذلك.
- ❖ يجب أن يتم توقيع المسئول عن التطعيم مع خاتم مركز التطعيم.

Appendix E-1:

Ministry of Health

Policy for Prevention and Management of Needle stick Injuries /Blood & Body Fluid Exposure among Healthcare Personnel in Healthcare Setting

INFORMED CONSENT FORM FOR SOURCE PERSON

Informed consent to perform (HBV, HCV and HIV) tests and authorization for release of HIV-related information for purposes of providing postexposure prophylaxis to healthcare personnel accidentally exposed to needle stick injury or blood and body fluid

A healthcare personal has been exposed to your blood or a body fluid in a manner that may pose a risk for the transmission of a bloodborne infection. Many individuals may not know whether they have a bloodborne infection because people can carry these viruses without having any symptoms. We are therefore asking for your consent to test for the presence of human immunodeficiency virus (HIV).You will also be tested for hepatitis B virus (HBV) and hepatitis C virus (HCV). HIV testing is voluntary and requires your consent in writing; consent can be withdrawn for the test at any time.

لقد تعرض احد العاملين بالقطاع الصحي إلى دمك أو سوائل من جسمك بطريقة قد تشكل خطرا للعدوى بالفيروسات المنقولة عبر الدم. وبما أن العديد من الأشخاص لا يعرفون ما إذا كان لديهم عدوى بهذه الفيروسات حيث قد تكون العدوى بدون وجود أعراض فإننا نطلب الموافقة على إجراء اختبار لوجود فيروس نقص المناعة المكتسب. سيتم أيضاً إجراء اختبار لوجود فيروس التهاب الكبد الفيروسي نوع (ب) ونوع (سي). إن اختبار فيروس نقص المناعة المكتسب اختياري و يتطلب موافقة كتابية منك ويمكن سحب الموافقة على إجراء الاختبار للفيروسات في أي وقت.

The test result will be used to help determine whether the exposed person is actually at risk for HIV and requires treatment for that exposure. We will inform you of the test results, helping you understand their implications.

سيتم استخدام نتيجة الاختبار للمساعدة في تحديد ما إذا كان الشخص الذي تعرض للدم أو سوائل الجسم هو في الواقع لديه احتمالية خطر الإصابة بفيروس نقص المناعة المكتسب أو يتطلب علاجا. وسوف نطلعكم على نتائج الاختبار ونساعدك على استيعاب ما يترتب عليه.

You also are being asked to authorize the release of confidential HIV-related information related to this request to the treating physician who is treating the exposed person. This release is necessary to provide appropriate post-exposure prophylaxis and to counseling the exposed person about his or her risk of becoming infected and possibly infecting others.

أيضا يطلب منك الإذن بالإفصاح عن المعلومات السرية المتصلة بفيروس نقص المناعة المكتسب والمتعلقة بهذا الطلب إلى الطبيب المعالج للشخص الذي تعرض للدم أو سوائل الجسم وذلك لتلقى الادويه الوقائيه اللازمه لما بعد التعرض وتقديم الاستشارة للشخص الذي تعرض للدم أو سوائل الجسم ومعرفة خطر انتقال أو إصابته للفيروس حتى يتم التحكم في العدوى و منع انتشار الفيروس للآخرين.

I understand the purpose for which I am being asked to submit a specimen for HIV testing. My questions about the HIV test were answered. I agree to be tested for HIV, and I authorize the release of this information to those determined by law.

أنا أفهم الغرض من الطلب بأن أقدم عينة لاختبار فيروس نقص المناعة المكتسب. أسئلتي عن اختبار فيروس نقص المناعة المكتسب قد أجيبت. أنا أوافق على اجراء الاختبار لهذا الفيروس، وأفوض الإفصاح عن هذه المعلومات الى الجهات التى يحددها القانون

----------	-- / --/ ---	-- / --/ ----	----------
Name of person to be tested	Date	التاريخ	اسم الشخص المراد إجراء الاختبار له

----------	----------
Signature of the person to be tested, **or his/her legal commissioner**	التوقيع للشخص المراد إجراء الاختبار له أو المفوض عنه **قانوناً**

----------	----------	----------	----------
Name of the witness	Signature of the witness	توقيع الشاهد	اسم الشاهد

Appendix E-2:

Ministry of Health

Policy for Prevention and Management of Needle stick Injuries /Blood & Body Fluid Exposure among Healthcare Personnel in Healthcare Setting

INFORMED CONSENT FORM FOR EXPOSED PERSON

Informed consent to perform HBV, HCV and HIV tests and authorization for release of HIV-related information for purposes of providing post-exposure prophylaxis

You as a healthcare personal have been exposed to blood or a body fluid from an individual in a manner that may pose a risk for the transmission of a bloodborne infection. Many individuals may not know whether they have a bloodborne infection because people can carry these viruses without having any symptoms. We are therefore asking for your consent to test for the presence of human immunodeficiency virus (HIV).You will also be tested for hepatitis B virus (HBV) and hepatitis C virus (HCV). HIV testing is voluntary and requires your consent in writing; consent can be withdrawn for the test at any time.

لقد تعرضت إلى دم أو سوائل من جسم شخص بطريقة قد تشكل خطرا للعدوى بالفيروسات المنقولة عبر الدم. وبما أن العديد من الأشخاص لا يعرفون ما إذا كان لديهم عدوى بهذه الفيروسات حيث قد تكون العدوى بدون وجود أعراض فإننا نطلب الموافقة على إجراء اختبار لوجود فيروس نقص المناعة المكتسب . سيتم أيضاً إجراء اختبار لوجود فيروس التهاب الكبد الفيروسي نوع (ب) ونوع (سي). إن اختبار فيروس نقص المناعة المكتسب اختياري و يتطلب موافقة كتابية منك ويمكن سحب الموافقة على إجراء الاختبار للفيروسات في أي وقت.

The test result will be used to help determine whether you have infection with HIV and require treatment. We will inform you of the test results and help you understand their implications.

سيتم استخدام نتيجة الاختبار للمساعدة في تحديد ما إذا كان لديك إصابة غير معروفة مسبقاً بفيروس نقص المناعة المكتسب وهو الأمر الذي يتطلب العلاج. وسوف نطلعكم على نتائج الاختبار ونساعدك على استيعاب ما يترتب عليه.

You also are being asked to authorize the release of confidential HIV-related information related to this request to the treating physician. This release is necessary to provide appropriate post-exposure prophylaxis and to counseling.

أيضا يطلب منك الإذن بالإفصاح عن المعلومات السرية المتصلة بفيروس نقص المناعة المكتسب والمتعلقة بهذا الطلب إلى الطبيب المعالج .هذا الافصاح ضرورى لتلقى الادويه الوقائيه اللازمه لما بعد التعرض وتقديم الاستشارة.

I understand the purpose for which I am being asked to submit a specimen for HIV testing. My questions about the HIV test were answered. I agree to be tested for HIV, and I authorize the release of this information to those determined by law.

أنا أفهم الغرض من الطلب بأن أقدم عينة لاختبار فيروس نقص المناعة المكتسب. أسئلتي عن اختبار فيروس نقص المناعة المكتسب قد أجيبت. أنا أوافق على اجراء الاختبار لهذا الفيروس، وأفوض الإفصاح عن هذه المعلومات الى الجهات التى يحددها القانون.

----------	-- / --/ ----	-- / --/ ----	----------
Name of person to be tested	Date	التاريخ	اسم الشخص المراد إجراء الاختبار له

----------	----------
Signature of the person to be tested, **or his/her legal commissioner**	التوقيع للشخص المراد إجراء الاختبار له أو المفوض عنه **قانوناً**

----------	----------	----------	----------
Name of the witness	Signature of the witness	توقيع الشاهد	اسم الشاهد

Appendix F:

Ministry of Health

Laboratory Request Form

Lab. No.

Policy for Prevention and Management of Needle stick Injuries/ Blood & Body Fluid Exposure among Healthcare Personnel

Hospital:----------		Health region: ----------		
Name :----------	Age:----------	Gender: ❑M ❑F		Nationality: ❑K ❑NK
Department where incident occurred:----------		Unit:----------	Ward:--------	Room:----------
Civil ID File No. ----------		Specimen & source:----------		
Date of injury/ exposure: _ _ / _ _ / _ _ _ _ Date specimen taken: _ _ / _ _ / _ _ _ _ Time specimen taken: ----------		Doctor's stamp and signature		Tel. No.
Tests for source patient		Tests for exposed healthcare personnel		
HBV: ❑HBsAg ❑HBeAg ❑Anti HBs ❑Anti HBc HCV: ❑Anti-HCV EIA ❑PCR-HCV HIV: ❑Anti-HIV ❑#CD4 Cells ❑Antigen load Other: ----------		HBV: ❑HBsAg ❑HBeAg ❑Anti HBs ❑Anti HBc HCV: ❑Anti-HCV EIA ❑PCR-HCV HIV: ❑Anti-HIV Other: ----------		
For Lab. Use Only		For Lab. Use Only		
Date: : ---- /---- /--------	Technologist:----------		Consultant----------	

Appendix G: Immunization of new HCP

1. **Hepatitis B**
2. **Measles, Mumps, Rubella (MMR)**
   HCP who work in medical facilities should be immune to measles, mumps, and rubella.
   - HCP born in 1957 or later can be considered immune to measles, mumps, or rubella only if they have documentation of:
     (a) Laboratory confirmation of disease or immunity or
     (b) Appropriate vaccination against measles, mumps, and rubella (i.e., 2 doses of live measles and mumps vaccines given on or after the first birthday and separated by 28 days or more, and at least 1 dose of live rubella vaccine).

   HCP with 2 documented doses of MMR are not recommended to be serologically tested for immunity
   - HCP born before 1957 generally is considered acceptable evidence of measles, mumps, and rubella immunity. Consider recommending 2 doses of MMR vaccine routinely to unvaccinated HCP born before 1957 who do not have laboratory evidence of disease or immunity to measles and/or mumps, and should consider one dose of MMR for HCP with no laboratory evidence of disease or immunity to rubella.
3. **Varicella**
   It is recommended that all HCP be immune to varicella. Evidence of immunity in HCP includes:
   - Documentation of 2 doses of varicella vaccine given at least 28 days apart
   - History of varicella or herpes zoster based on physician diagnosis
   - Laboratory evidence of immunity, or laboratory confirmation of disease.
4. **Tetanus/Diphtheria/Pertussis (Td/Tdap)**
   All HCP who have not or are unsure if they have previously received a dose of Tdap should receive a one-time dose of Tdap as soon as feasible, without regard to the interval since the previous dose of Td. Then, they should receive Td boosters every 10 years thereafter.
5. **Meningococcal**
   Vaccination is recommended for microbiologists who are routinely exposed to isolates of N. meningitidis. Use of MCV4 is preferred for persons age 55 years or younger; give IM. Use MPSV4 only if there is a permanent contraindication or precaution to MCV4. Use of MPSV4 (not MCV4) is recommended for HCP older than age 55; give SC.
6. **Annual Immunization of HCP-Influenza**
   All HCP, including physicians, nurses, paramedics, emergency medical technicians, employees of nursing homes and chronic care facilities, students in these professions, and volunteers, should receive annual vaccination against influenza. Live attenuated influenza vaccine (LAIV) may only be given to non-pregnant healthy HCP age 49 years and younger. Inactivated injectable influenza vaccine (TIV) is preferred over LAIV for HCP who are in close contact with severely immunosuppressed persons (e.g., stem cell transplant patients) when patients require protective isolation.

Appendix H: Criteria for selecting and evaluating the performance of sharps disposal containers

A. Functionality: Containers should remain functional during their entire usage.

- It should be durable, closable, leak resistant on their sides and bottom and puncture resistant until final disposal.
- Containers should be stable when placed on a horizontal surface and whenever used.
- Containers should be of sufficient size and shape to accommodate the particular type of sharp that requires disposal. At a minimum, one sharps disposal container should be provided at each work site .
- Mounting brackets for containers should be rugged and provide for ease of servicing and decontamination.
- Closure mechanisms should be designed to minimize exposure to contents and injury. Once activated, the final closure mechanism should be resistant to manual opening.

B. Accessibility: Containers should be accessible to workers who use, maintain, or dispose of sharp devices. Convenient placement should also be considered, along with portability of containers within the workplace.

- The design should minimize any catching or snagging of sharps during insertion into the container.
- The disposal opening should be identifiable and accessible by the user and should facilitate one-handed disposal.
- Security may be a concern in some areas e.g.. paediatric, geriatric wards, mental health facilities and areas with high patient or visitor traffic.
- Handles -if present- should be sufficiently sturdy to avoid breaking during handling and transport.
- No obstacles should be found between the site of use and the container. Unsafe locations lead to unnecessary movements. Placement of the sharps container outside patient room increases the possibility of injury.
- Users should have a clear, unobstructed view of the container inlet opening, the container should be located within arm's reach, and the fixture height should be below the eye level of 95% of adult female. An optimal installation range of 1.3-1.4 meter at a standing work station, and 0.96- 1.06 meter for a seated work station.

C. Visibility: The container, the full status, warning labels, and color coding should be plainly visible to workers.

- Sharps disposal containers should be visible and recognizable and should carry a hazard warning labeling.
- The disposal opening or access mechanism should be visible to the user before sharps placement.
- The current fill status of the container should be easily observable by the user before sharps placement.
- Safety features and aesthetics should not distort recognition of the container, fill status or the disposal opening.

D. Accommodation: Containers should be accommodating or convenient for the user and the facility and should be environmentally sound (e.g., free of heavy metals and composed of recycled materials).

- Accommodation also includes ease of storage, assembly, and operation.
- Mounting systems –if required- should be safe, durable, stable, cleanable, and (where appropriate) lockable. Placement and removal should be simple, uncomplicated and should not compromise safety and security.

Appendix I: Selecting and evaluating safety engineered needle devices

The suggested criteria for the design and performance of safety engineered devices proposes that the safety feature should accomplish the following:

- Be an integral part of the device,
- Be simple and obvious in operation,
- Be reliable and automatic,
- Provide a rigid cover that allows the hands to remain behind the needle,
- Ensure that the safety feature is in effect before disassembly and remains in effect after disposal,
- Ensure the user technique is similar to that of conventional devices,
- Minimize the risk of infection to patients and should not create infection control issues beyond those of conventional devices,
- Have minimal increase in volume, relative to disposal,
- Be cost effective.
- Features designed to protect healthcare personnel should not compromise patient care.

The major elements of a process for selecting and evaluating needle devices with safety features are:

1. Form a multidisciplinary team that includes workers to
   - develop, implement, and evaluate a plan to reduce needlestick injuries in the facility.
   - evaluate needle devices with safety features to ensure:
     - the safety feature works effectively and reliably,
     - the device is acceptable to the health care worker, and
     - the device does not adversely affect patient care.
2. Identify priorities based on assessments of how needlestick injuries are occurring, patterns of device use in the institution, and local and national data on injury and disease transmission trends. Give the highest priority to needle devices with safety features that will have the greatest impact on preventing occupational infection (e.g., hollow-bore needles used in veins and arteries).
3. When selecting a safer device, identify its intended scope of use in the health care facility and any special technique or design factors that will influence its safety, efficiency, and user acceptability.
4. Conduct a product evaluation, making sure that the participants represent the scope of eventual product users. The following steps will contribute to a successful product evaluation:
   - Train health care workers in the correct use of the new device.
   - Establish clear criteria and measures to evaluate the device with regard to both health care worker safety and patient care.
   - Conduct onsite follow up to obtain informal feedback, identify problems, and provide additional guidance.
5. Monitor the use of a new device after it is implemented to determine the need for additional training, solicit informal feedback on health care worker experience with the device (e.g., using a suggestion box), and identify possible adverse effects of the device on patient care.

   Ongoing review of current devices and options will be necessary. As with any evolving technology, the process will be dynamic, and with experience, improved devices with safety features will emerge.

Appendix J: Safe Work Practices for Preventing Sharps Injuries

Before the beginning of a procedure that involves the use of a needle or other sharp device:

- Ensure that equipment necessary for performing a procedure is available within arms reach.
- Assess the work environment for adequate lighting and space to perform the procedure.
- If multiple sharps will be used during a procedure, organize the work area (e.g. procedure tray) so that the sharp is always pointed away from the operator.
- Identify the location of the sharps disposal container; if moveable, place it as close to the point-of-use as appropriate for immediate disposal of the sharp. If the sharp is reusable, determine in advance where it will be placed for safe handling after use.
- Assess the potential for the patient to be uncooperative, combative, or confused. Obtain assistance from other staff or a family member to assist in calming or restraining the patient as necessary.
- Inform the patient of what the procedure involves and explain the importance of avoiding any sudden movement that might dislodge the sharp, for successful completion of the procedure as well as prevention of injury to healthcare personnel.

During a Procedure That Involves the Use of Needles or Other Sharp Devices:

- Maintain visual contact with the procedure site and location of the sharp device.
- When handling an exposed sharp, be aware of other staff in the immediate environment and take steps to control the location of the sharp to avoid injury to oneself and other staff.
- Do not hand-pass exposed sharps from one person to another; use a predetermined neutral zone or tray for placing and retrieving used sharps. Verbally announce when sharps are being placed in a neutral zone.
- If the procedure necessitates reusing a needle multiple times on the same patient (e.g., giving local anesthesia), recap the needle between steps using a one-handed technique or a fixed device that enables one-handed recapping.
- If using an engineered sharps injury prevention device, activate the safety feature as the procedure is being completed, observing for audio or visual cues that the feature is locked in place.

During Clean-up following a Procedure:

- Visually inspect procedure trays, or other surfaces (including patient beds) containing waste materials used during a procedure, for the presence of sharps that may have been left inadvertently after the procedure.
- Transport reusable sharps in a closed container that has been secured to prevent the spillage of contents.

During Disposal:

- Visually inspect the sharps container for hazards caused by overfilling.
- Make sure the sharps container being used is large enough to accommodate the entire device.
- Avoid bringing the hands close to the opening of a sharps container; never place hands or fingers into a container to facilitate disposal of a device.
- Keep the hands behind the sharp tip when disposing the device.
- If disposing of a sharp with attached tubing (e.g., winged steel needle), be aware that the tubing can recoil and lead to injury; maintain control of the tubing as well as the needle when disposing the device.

After Disposal:

- Visually inspect sharps containers for evidence of overfilling before removal. If a sharps container is overfilled, obtain a new container and use forceps or tongs to remove protruding devices and place them in the new container.
- Visually inspect the outside of waste containers for evidence of protruding sharps. If found, notify safety personnel for assistance in removing the hazard.
- Keep filled sharps containers awaiting final disposal in a secure area.

Improperly Disposed Sharps:

- If an improperly disposed sharp is encountered in the work environment, handle the device carefully, keeping the hands behind the sharp at all times.
- Use a mechanical device to pick up the sharp if it cannot be performed safely by hand.

Appendix K: Cleaning Spills of Blood and Body Fluids

Procedures for dealing with small spillages eg, splashes and droplets (<10 ml)

1. Gloves and a plastic apron must be worn.
2. The area should be wiped thoroughly using disposable paper roll / towels.
3. The areas should be cleaned using a neutral detergent and warm water.
4. Recommended concentration of sodium hypochlorite in a concentration of 525-615 ppm chlorine to decontaminate surfaces.
5. Used the gloves, apron / towels should be dispose in to yellow waste bag.
6. Wash hands.

Procedure for dealing with large spills (>10 ml):

- Large blood spills in a 'wet' area e.g. a bathroom or toilet area:

1. Where large spills have occurred in a 'wet' area, such as a bathroom or toilet area, the spill should be carefully washed off into the sewerage system using copious amounts of water and the area flushed with warm water and detergent.
2. The area must then be disinfected using a chlorine releasing agent. Use a 1:100 dilution (e.g., 1:100 dilution of a 5.25-6.15% sodium hypochlorite provides 525-615 ppm available chlorine)

- Large blood spills in 'dry' areas (such as clinical areas)

1. Where possible, isolate spill area
2. Where a spillage of potentially infectious material has occurred the area must be vacated for at least 30 minutes for aerosol particles to be dispersed.
3. Wear protective equipment like disposable cleaning gloves, eyewear, mask and plastic apron
4. Cover the spill with paper towels or absorbent granules, depending on the size of the spill, to absorb the bulk of the blood or body fluid/substance. Use disposable (for example, cardboard) scraper and pan to scoop up absorbent, paper towel and any unabsorbed blood or body substances
5. Place all contaminated items into yellow plastic bag or in sharp container for disposal.
6. Pour 5,000 ppm chlorine solution and allow 10 minutes to react then wipe up making sure that you don't allow it to come into contact with your skin or clothing and discard in biohazard waste.
7. Decontaminated areas should then be cleaned thoroughly with warm water and neutral detergent .
8. Follow this decontamination process with a terminal disinfection. Use a 1:100 dilution (525–615 ppm available chlorine)
9. Discard contaminated materials (absorbent toweling, cleaning cloths, disposable gloves and plastic apron).
10. Wash hands
11. Clean and disinfect bucket and mop. Dry and store appropriately.

Procedure for dealing with spilled Urine, feces, sputum and vomit:

1. Single use gloves and a plastic apron must be worn.
2. The spillage should be covered with disposable paper towel to absorb the spilled material. These should then be gathered up and placed in a yellow waste bag. The area must then be cleaned thoroughly using detergent and hot water and dried.
3. The area must then be disinfected using a chlorine releasing agent. Use a 1:100 dilution (e.g., 1:100 dilution of a 5.25-6.15% sodium hypochlorite provides 525-615 ppm available chlorine)
4. Protective clothing and paper must be discarded into the yellow waste bag.
5. Wash hands.