State of Kuwait
Ministry of Health
Infection Control Directorate

Guidelines for the Prevention of Exposures to Blood Borne Pathogens among Healthcare Workers

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CONTENTS

I. INTRODUCTION

The risk of transmission of blood-borne pathogens in the health-care setting has become a matter of increasing concern in recent years.

Healthcare workers remain at substantial risk of occupational exposure to blood-borne pathogens, 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 healthcare personnel 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.

In spite of effective pre-exposure and post exposure prophylaxis for HBV and recommendations for postexposure prophylaxis after HIV exposure, the best approach to prevent occupational blood-borne infection is the prevention of percutaneous injuries associated with medical devices contaminated with blood.

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

II. AIM

The aim of this policy is:

- To prevent occupational exposure to blood-borne pathogens among HCP .
- To ensure that health-care workers have safe and healthy working environment.
- To ensure proper reporting of exposure incidents.
- To provide guidelines for selecting sharps disposal containers
- To provide guidelines for selecting and evaluating needle devices with safety features.

III. Blood borne Virus Transmission

Hepatitis B Virus

Most healthcare personnel today are immune to HBV as the result of pre-exposure vaccination. However, susceptible healthcare personnel are still at risk for needlestick exposure to an HBV-positive source. Without postexposure prophylaxis, there is a 6%-30% risk that an exposed, susceptible healthcare worker will become infected with HBV. The risk is highest if the source individual is hepatitis B e antigen positive, a marker of increased infectivity.

Hepatitis C Virus

The average risk of HCV transmission following percutaneous exposure to an HCV-positive source is 1.8% (range: 0% -7%).

Occupational HCV transmission to healthcare personnel has been also documented to occur mainly through percutaneous injuries and in some cases through splash to the conjunctiva or a non-intact skin exposure.

Human Immunodeficiency Virus (HIV)

The average risk of HIV transmission after a percutaneous exposure is estimated to be approximately 0.3%.

The risk for HIV infection was found to be increased with exposure to a larger quantity of blood from the source person as indicated by a) a device visibly contaminated with the patient's blood, b) a procedure that involves placing a needle directly in the source patient's vein or artery, or c) a deep injury. Occupational HIV transmission occurs mainly after mucous-membrane exposures and to a lesser extent after skin exposure.

IV. Occupational Exposure:

Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Significant Exposure:

- Percutaneous exposure - an inoculation or other blood/blood stained body fluid contaminated sharp object injury, a bite which causes bleeding or other visible skin puncture.
- Mucocutaneous exposure - to blood or body fluids with contamination of nonintact skin (e.g. cuts, abrasions, sores, chapped skin etc) conjunctivae or mucous membranes.

Non-significant Exposure:

- Exposure of intact skin
- Exposure to vomit, faeces or urine (unless visibly blood stained)
- Exposure to sterile or uncontaminated sharp objects

V. Exposure control measures

The goal of the hierarchy of controls is selecting the most effective control measures in order of priority for their effectiveness in minimizing health-care workers' exposure to blood or body fluids, or preventing injury or illness resulting from exposure.

Hierarchy of Controls (from most effective to least effective)

a) Elimination of Hazard / Substitution
b) Engineering Controls
c) Administrative Controls
d) Work Practice Controls
e) Personal Protective Equipment (PPE)

(a) Elimination of hazard/ Substitution

Elimination is the most effective measure is the complete removal of a hazard from the work area. Examples include:

- Removing sharps and needles and eliminating all unnecessary injections and replacing them with oral medication of similar efficacy.
- Jet injectors may eliminate some uses of syringes and needles.
- Elimination of unnecessary sharps such as towel clips, and using needleless IV systems (non-needle connectors for supplemental or "piggyback" connection to intravenous lines).

Substitution is replacement of the work practices with others that present a lesser risk, e.g. Substituting blunt suture needles for every potential application (muscle, fascia, fat, liver, not blood vessels).

(b) Engineering controls

These controls developed to minimize exposure to blood or body fluids should take into account:

- sharps containers, also known as safety boxes;
- newer device technology such as safer devices with engineered injury prevention features;
- ergonomic factors such as improved lighting, workplace maintenance and workstation layout;
- regular checks of the instruments and equipment used in the workplace, such as autoclaves and other sterilization equipment and processes, with repair or replacement as appropriate.

1. Sharp disposal containers

Sharps container should be leak and puncture resistant. It should be placed within arm's reach (preferably in a secured area) to allow for easy disposal of sharps. Sharps container should be sealed and replaced when the container is three quarters full.

For details of the four major criteria for evaluating the performance of sharps disposal containers (see appendix 2).

2. Safety engineered devices

Safety engineered device is defined as: Needles and other sharp devices with an integrated engineered feature to prevent sharp injury.

These engineering modifications generally involve one of the following strategies:

- Eliminate the need for a needle (substitution);
- Permanently isolate the needle so that it is never poses a hazard; or
- Provide a means to isolate or encase a needle after use.

Selecting and Evaluating Needle Devices with Safety Features:

These devices are designed to enhance the safety of health care workers, they should be evaluated to ensure that:

- 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.

Safety Device List:

The Safety Device List is a list of devices designed to prevent percutaneous injuries and exposures to bloodborne pathogens in the health care setting. The list is updated regularly with new products. It is intended to help health care facilities in their efforts to reduce sharps injuries and comply with OSHA's revised bloodborne pathogens standard.

Examples: syringes with guards or sliding sheaths; retractable needle syringes; shielded or retracting catheters; delivery systems using catheter ports or connector sites using a needle that is housed in a protective covering; blunt suture needles; plastic (not glass) capillary tubes.

(c) Administrative controls

These are workplace policies aimed at limiting exposure to the hazard. Examples include:

- Policies limiting exposure to hazards through standard precautions.
- Allocation of resources demonstrating commitment to HCW safety.
- Needlestick prevention committee.(Appendix 4)
- Consistent training on use of safe devices.

(d) Work practice controls

These controls reduce exposure to occupational hazards through the method by which the work is conducted, this include the followings:

1. Hepatitis B immunization

Hepatitis B immunization is recommended for all clinical and support staff who have potential contact with blood and body fluid through their work.

2. Standard precautions

Standard infection control precautions should be followed at all times to minimize the risk of transmission of infection between patients and between patients and staff .

-Hand Hygiene

Hand decontamination is the single most important factor in reducing cross-infection.

Hand washing facilities should be provided at clearly identified sites in the workplace and equipped with approved disinfectant. Alternatively a 70 % alcohol hand rub should be available in the clinical areas, including at the end of every bed and readily available at the point of care, and in ward/department entrance/exit.

- HCW should wash their hands and dry at the beginning and end of each shift, before and after taking care of a patient, after contact with blood or body fluids, after contact with patient environment , before and after after eating, drinking, smoking and going to the toilet, and before and after exiting their work area
- Gloves should not be used as a substitute for hand hygiene and Hand hygiene is to be performed before & after all glove use.
- HCW should also check for cuts or abrasions on exposed parts of the body, and use waterproof dressings to cover any found.
- HCW should be encouraged to report any reactions they may have to frequent hand washing and the substances used, for appropriate action.

-Personal Protective equipment (PPE) :

The use of PPE is a control measure that places barriers and filters between the worker and the hazard.PPE should be worn when there is a risk of contact with blood/body fluids. A risk assessment should be carried out for each procedure.

In each healthcare facility there should be

- a clear policy for their use and health-care workers are fully aware of it;
- adequate supplies of items for PPE;
- easy access to PPE items that should be worn whenever HCP are likely to come into contact with blood or body fluids which include
    - non-porous waterproof dressings for health-care workers with abraded or broken skin;

- a variety of gloves in a range of sizes, sterile and non-sterile, including heavy latex, vinyl, waterproof and other puncture-resistant materials;;
- plastic aprons, waterproof gowns,
- eye protection
- masks

-Patient placement

Although it is not necessary to routinely isolate patients infected with blood born virus (BBV), unless they have another infection i.e. MRSA, TB. they should be placed in a side room if they are bleeding or if the patient requires isolation for psychological/social reasons.
Patients with AIDS/HIV who are immuno-suppressed may require protective isolation.

3. Safe handling of sharps and injection equipment

Work practices to prevent sharps injuries are typically presented as a list of specific practices to avoid (e.g., recapping used needles) or to use (e.g., disposing in appropriate sharps disposal containers). To promote safe work practices, healthcare personnel need to have an awareness of the risk of injury throughout the time a sharp is exposed and use a combination of strategies to protect themselves and their co-workers throughout the handling of the device. For details see appendix 5 and 6.

4. Cleaning, disinfection and sterilization of equipment

There are three levels on which decisions will be made to clean, disinfect or sterilize equipment:

(a) if the equipment is used solely for contact with intact skin,it requires cleaning only;

(b) if the equipment is to have contact with mucous membranes or is contaminated with blood, it requires cleaning and high-level disinfection;

(c) if the equipment is to have contact with normally noninfected human tissue, it requires cleaning and sterilization.

Cleaning must always precede disinfection or sterilization. It should be done with appropriate detergent and water, and:

(i) gloves should be worn during cleaning;

(ii) items should be washed and scrubbed to remove all visible contamination, if possible by mechanical means such as a dishwasher; care should be taken during cleaning to avoid splashing;

(iii) eye protection should be worn if splashing is likely to occur.

Incorrect use of some disinfectants is potentially hazardous, and instructions on labels and in material safety data sheets should be followed.

Sterilizing equipment should be used in accordance with the manufacture recommendations (refer to Disinfection Policy)

5. Environmental Cleaning

The environment plays a relatively minor role in transmitting infection, but dust, dirt and liquid residues will increase the risk. They should be kept to a minimum by regular cleaning and by good design features in buildings, fittings and fixtures.

- •A written cleaning schedule should be devised specifying the persons responsible for cleaning, the frequency of cleaning and methods to be used .
- • Work surfaces and floors should be smooth-finished, intact, durable of good quality, washable and should not allow pooling of liquids and be impervious to fluids.
- • Carpets are not recommended in treatment rooms or areas where clinical procedures will take place because of the risk of body fluid spills.
- • Mops and buckets should be kept clean, dry and store inverted.
- • Mop head should be removable for frequent laundering, or single-use if this is not possible.
- • Keep equipment and materials used for general cleaning separate from those used for cleaning up body fluids.
- • Use general purpose detergent for all environmental cleaning - follow the manufacturer's instructions.
- •Blood spills should be assessed and attended to immediately. (Appendix 7)

6. Laundry

-All used linen should be treated as potentially infectious and placed in a standard bag for linen. If there is a risk of contamination due to leakage of body fluids, or when dealing with a known infectious case, the bag for linen should be placed in the clear heat sensitive plastic bag.

-Bags for linen should be only three-quarters filled and should be secured prior to transport.

-High utility puncture-resistant gloves should be worn because sharps may remain in the linen.

-Sharps containers should be made available for disposal of sharps found when sorting used linen. If sharps are found or exposure occurs, this should be reported and recorded.

-Contaminated clothing or linen should be washed with detergent using the hot wash cycle of a domestic washing machine, heating the water to a temperature of at least 80 °C.

7. Labeling, transport and reception of specimens

- Specimens from patients with known or suspected BBV infection should be labeled or marked "Biohazards". Accompanying paperwork should be similarly labeled. For reasons of patient confidentiality the diagnosis, if known, should not be specified.
- Specimens for transportation should be dispatched in individual sealable transparent plastic bags.
- The request form should give sufficient information to the laboratory staff receiving it to assess what special precautions may be required in the laboratory.

8. Waste management

The facility should establish a waste management procedure in conformity with national law and practice. Such a procedure should pay particular attention to the following:

- educate and train personnel involved in handling and disposal of potentially infective waste of possible health and safety hazards;
- pack and mark waste according to waste category;
- use no-touch receptacles (e.g., foot-pedal operated lid or open, plastic-lined waste basket) for disposal of waste.
- used syringe needles should not be bend, recap, or break before discarding into a container
- place the clearly marked puncture-resistant containers for the disposal of sharps as close as practicable to the areas where sharps are being used;
- regularly replace sharp containers before they reach the manufacturer’s fill line or when they are two third full;
- The containers should be sealed before they are transported;
- Store regulated medical wastes awaiting treatment in a properly ventilated area inaccessible to pests;
- Laboratories should inactivate amplified microbial cultures and stocks onsite (e.g., autoclaving) before transport and disposal.
- Safely dispose blood, suctioned fluids, ground tissues, excretions, and secretions according to local sewage discharge requirements.

9. Body handling and disposal

-When there is any risk of contact with blood and body fluids in handling bodies for any purpose, standard precautions should be used. Gloves should be worn together with other protective clothing as necessary.

-Drainage tube sites and open wounds should be covered by waterproof dressings.

-All bodies should be examined to ensure there are no sharps remaining in them.

-The body must be placed in a cadaver bag and a yellow sticker attached to dead body, body bag and mortuary sheet .(category 2 classification signified by a yellow label).

- Those undertaking post-mortem examination should adopt similar precautions for invasive procedures on living patients.

(e) Personal protective equipment

This was discussed earlier in details.

VI. Exposure incident management

Exposure management is an integral component of a complete program to prevent infection following blood-borne pathogen exposure and is an important element of workplace safety. Immediate action includes first aid, notification and reporting for HBV, HCV and HIV, and provision of post-exposure prophylaxis (PEP). Follow-up actions should include Care, treatment and support as well as voluntary counseling and testing.

HCP should be educated as part of job orientation and ongoing job training to report occupational exposures immediately after they occur, particularly because PEP are most likely to be effective if administered as soon as possible.

i. Immediate actions

The first aid given is based on the type of exposure (e.g. splash, needle-stick or other injury) and the means of exposure (e.g. intact skin, non-intact skin). Appendix 8 shows the first aid to apply in different situations.

No evidence exists that using antiseptics for wound care or expressing fluid by squeezing the wound further reduces the risk of blood-borne pathogen transmission; however, the use of antiseptics is not contraindicated. The application of caustic agents (e.g., bleach) or the injection of antiseptics or disinfectants into the wound is not recommended.

ii. Exposure Reporting

The health-care worker should report immediately to Preventive Medicine Department in the corresponding healthcare facility to ensure that full reports on the injury and immediate treatment provided

are completed in confidential and timely manner (usually on a form the facility designates for this purpose- the exposure form appendix 9). A copy of the report form should be sent to:

- the corresponding department of the exposed HCP
- Infection Control Department

Infection control team will revise the incident report and can carry investigations of the incident for:

- identification of infection control breach
- institution of corrective action as early as possible
- giving the appropriate recommendations to improve practice and prevent future exposures.

iii. Post exposure prophylaxis (PEP)

Access to Preventive Medicine Department who can provide post exposure care should be readily available. HBIG, hepatitis B vaccine, and antiretroviral agents for HIV and PEP should be available for timely administration (i.e., either by providing access on-site or by creating linkages with other facilities or providers to make them available off-site).

iv. Follow-up, care, treatment and support

Follow-up actions should be carried out by preventive medicine department which include care, treatment and support as well as voluntary counseling and laboratory testing.

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Appendix (1) Glossary

Administrative Controls: A method of controlling employee exposures through enforcement of policies and procedures, modification of work assignment, training in specific work practices, and other administrative measures designed to reduce the exposure.

Blood borne pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).

Engineering Controls: In the context of sharps injury prevention, means controls (e.g., sharps disposal containers; safer medical devices, such as sharps with engineered sharps injury protections and needleless systems) that isolate or remove the bloodborne pathogens hazard from the workplace.

EPINet: The Exposure Prevention Information Network developed by Dr. Janine Jagger at the University of Virginia in 1991 to provide standardized methods for recording and tracking percutaneous injuries and blood and body fluid contacts.

Exposure Incident/Event : a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Healthcare personnel (HCP): is an individual employed to work in the facility (e.g. nurse, physician, pharmacist, technician, mortician, dentist, student, contractor, attending clinician, public safety worker, emergency response personnel, health-care waste worker, first-aid provider or volunteer), whose activities involve contact with patients or with blood or other body fluids from patients.

Hierarchy of controls: Concept used by the industrial hygiene profession to prioritize prevention interventions. Hierarchically these include administrative controls, engineering controls, personal protective equipment and work practice controls

Hollow-bore needle: Needle (e.g., hypodermic needle, phlebotomy needle) with a lumen through which material (e.g., medication, blood) can flow.

NaSH: The National Surveillance System for Health Care Workers systematically collects information important to prevent occupational exposures to healthcare personnel through collaboration between CDC and participating hospitals. Surveillance of blood and body fluid exposures is one of several modules that is part of NaSH.

Personal Protective Equipment (PPE): Specialized equipment worn by an employee to protect against a hazard.

Sharps: Any object that can penetrate the skin including, but not limited to, needles, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Sharps Injury: An exposure event occurring when any sharps penetrates the skin.

Solid Sharp: A sharp that does not have a lumen through which material can flow, e.g., suture needle, scalpel.

Standard Precautions: include the major features of universal precautions and applies to blood and all moist body substances, not just those associated with blood borne virus transmission. Standard precautions are designed to prevent transmission of infectious agents in the healthcare setting to patients and healthcare personnel.

Work practice controls: Actions that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., visual inspection of a sharps container for hazards before attempting disposal).

Appendix (2) 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 56-52 inches at a standing work station, and 42- 38 inches 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.
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- 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 (3) 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 (4) Needle-stick prevention committee

- It is a multidisciplinary needle-stick and sharps injury prevention committee, required to bring together various departments, such as :
  - **Nursing**
  - **Persons from clinical and laboratory services**
  - **Purchasing,**
  - **Materials Management/Product Evaluation**
  - **Housekeeping**
  - **Infection control,**
  - **Employee health, risk management, and employee education and training**.
- For the committee to be effective it must have power—the decision-makers in your institution should be represented.
- Frontline health care workers—those most at risk for injury and with the most experience using needles and sharps—are equally represented on that committee.

- In some cases, it might be easier to work with an existing health and safety committee or infection control committee that already has the decision-making authority in this arena.
- It is essential to be aware of the roles and levels of authority of all the related committees.
- If there is a resistance in initiating safe devices, there is a need to seek assistance from some of these committees.
- The committee will need access to data—in a way that protects confidentiality—regarding the specific devices involved and the conditions in which each injury took place. And it's equally important that the committee has final say on device selection to maintain its power.

Role of the Committee

The needle stick prevention committee should seek training on the principles of the industrial hygiene hierarchy of controls, product design features, and applying criteria for device evaluation to ensure a consistent knowledge level among device evaluators and for an effective selection process.

The training should not be conducted by or in the presence of product representatives.

Once a device is selected, the manufacturer can provide useful in-service education on the use of that device prior to implementation.

This committee's primary goals are to prevent needle stick and sharps injuries and to ensure that the hospital is adhering to the nationally approved standards.

The committee should have clearly defined authority and not just serve in an advisory role.

The committee's responsibilities should include:

- Defining blood-borne pathogen exposure problems.
- Developing strategies for improved needle-stick injury reporting procedures.
- Overseeing the exposure control plan including post-exposure follow-up.
- Monitoring the post-exposure treatment program.
- Developing surveillance systems to monitor needle-stick injuries.
- Reviewing the sharps injury log.
- Tracking of all occupational injuries and illnesses.
- Obtaining and disseminating information about new devices as they develop.
- Evaluating, selecting, and implementing safe devices.
- Ensuring health care workers' input into product selection.
- Training on new safety devices.
- Documenting the committee's work in meeting minutes.

Appendix (5) 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 (6) Measures to reduce risks of percutaneous exposure during surgical procedures

In order to minimize the risk of injury, the tasks of each member of the surgical team should be outlined. Specific hazards and measures to reduce the risks from these should be identified for each team member.

A. Methods, procedures and equipment

• Theatres must be informed in advance of known or high-risk patients .It is advisable, but not essential, to put the patient at the end of the theatre list, for thorough cleaning of the area before the next list .

• have no more than one person working in an open wound/body cavity at any time (unless essential to the safe and successful outcome of an operation);

• use a "hands-free" technique where the same sharp instrument is not touched by more than one person at the same time, avoid hand to hand passing of sharp instruments during an operation;

• assure safer passage of necessary sharp needles and instruments via a "neutral zone", announce when a sharp instrument or needle is placed there. The "neutral zone" may be a tray, kidney basin or an identified area in the operative field;

• ensure that scalpels and sharp needles are not left exposed in the operative field, but always removed promptly by the scrub nurse having been deposited in the neutral zone by the operator or assistant;

• use instruments rather than fingers for retraction, and for holding tissues while suturing;

• use instruments to handle needles and to remove scalpel blades;

• direct sharp needles and instruments away from own non-dominant, or assistant's hand;

• remove sharp suture needles before tying suture; tie suture with instruments rather than fingers.

B. Alternative equipment and procedures should be considered where practicable:

• eliminate any unnecessary use of sharp instruments and needles

• choose for alternative less invasive surgical procedures where practicable and effective;

• avoid scalpel injuries associated with assembly/disassembly, by using scalpels which are either disposable, have retractable blades or which incorporate a blade release device;

• avoid the use of sharp clips for surgical drapes; blunt clips are available as are disposable drapes incorporating self-adhesive operating film;

• consider double gloving with a larger pair of gloves innermost for optimum comfort. Double gloving does not "prevent" sharps injury, but has been shown to effect up to a six-fold decrease in inner glove puncture. In the event of percutaneous injury, the volume of blood transmitted may also be reduced due to the enhanced wiping effect of two layers of glove.

C. Reducing risk of blood-skin contact

• if a glove puncture is suspected or recognized, rescrub if possible and re-glove as soon as safety permits;

• change gloves regularly if performing, or assisting with a prolonged surgical procedure even if no glove puncture is suspected or recognized;

• protect body, eyes and face;

• choose waterproof gowns, or wear a surgical gown with waterproof cuffs and sleeves and a plastic apron underneath;

• if legs or feet may be contaminated (as in obstetric and some other procedures performed in the lithotomy position), ensure that impermeable gown/apron covers legs and wear impermeable footwear;

• ensure that all blood is cleansed from a patient's skin at the end of an operation before patient leaves theatre;

• remove protective clothing including footwear on leaving the contaminated area. All contaminated reusable protective clothing, including footwear, should be subjected to cleaning and disinfection or sterilisation, with appropriate precautions for those undertaking it. Footwear should be adequately decontaminated after use.

D. Measures to reduce eye and other facial exposure

. Protect mucous membrane of eyes with protective eyewear. This should prevent splash injuries (including lateral splashes) without loss of visual acuity and without discomfort.

. Eye wash should be available in case of accidental exposure. Contact lenses should be removed prior to eye washing.

Appendix (7) 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)

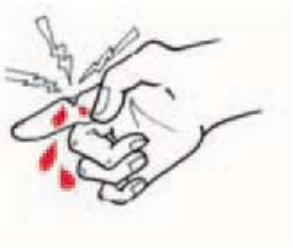
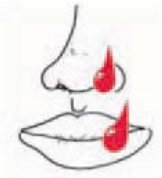
- Large blood spills in 'dry' areas (such as clinical areas)

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.

Appendix (8) First aid table

Injury or exposure	Management
Needle-stick or other sharps injury  **freely**	**Immediately wash the affected area with soap and water allow injury to bleed**
Splash of blood and/or body fluids on non-intact Skin 	**1. Immediately wash the affected area with soap and water.** **2. DO NOT use disinfectant on skin** **3. DO NOT scrub or rub the area**
Splash of blood or body fluids to eyes 	**Flush the area gently but thoroughly with running water or saline for at least 15 minutes while the eyes are open** **Keep eyelid gently inverted**
Splash of blood or body fluids to mouth or nose 	**1. Immediately spit out the blood or fluids and rinse the mouth with water several times** **2. Blow the nose and clean the affected area with water or saline** **3. DO NOT use disinfectant**
Splash of blood and/or body fluids on intact skin 	**Immediately wash the affected area with soap and water** **DO NOT rub the area**

Appendix (9-A) Needle stick and sharp object injury Epinet report form

Last Name:_____ **First Name**:_____

Exposure ID: (for the office use only) **S**_____ Facility ID: (for office use only)_____

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

3) Department where incident occurred:_____ **4) Home 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**
- ☐ **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, nurse 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 center**
- ☐ **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, loading dock)**
- ☐ **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**
- ☐ **2. Uncontaminated (no known exposure to patient or contaminated equipment**
- ☐ **3. Unknown**

Was there Blood on the device?

☐ **1. Yes** ☐ **2. No**

10) **For What Purpose was the Sharp Item Originally Used?** (check all that apply)

- ☐ **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)**
- ☐ **7. To Draw Venous Blood Sample**
- ☐ **8. To Draw Arterial Blood Sample**
- ☐ **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**_____

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)**
☐ **4. Disassembling device or Equipment**
☐ **5. In Preparation for Reuse of Reusable Instrument (sorting, disinfection, sterilizing, etc)**
☐ **6. While Recapping Used Needles**
☐ **7. Withdrawing a Needle from Rubber or Other Resistant Material (rubber stopper, IV port 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**
☐ **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 In appropriate Waste Container**
☐ **14. Other , Describe_____**

12) **What Type of Device Caused the Injury** (check all that apply)

☐ **Needle –Hollow Bore**
☐ **Surgical**
☐ **Glass**

Which Device Caused the Injury? (Check one box from one of the three sections only)

<u>Needles</u> (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, describe:_____**

<u>Surgical Instrument or Other Sharp Items</u> (for glass items see "glass")

☐ **30. Lancet (finger or heel sticks)**
☐ **31. Suture Needle**
☐ **32. Medical Student**
☐ **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:_____**

<u>Glass</u>

☐ **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:_____**

12 a) 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**

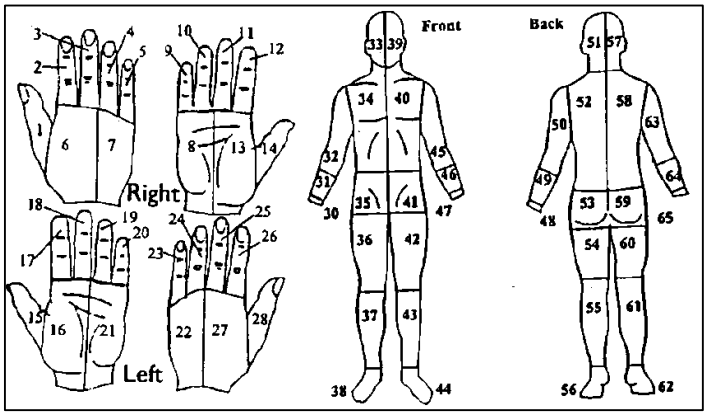
13a) Was the Protective Mechanism Activated?

- ☐ **1. Yes, Fully**
- ☐ **2. Yes, Partially**
- ☐ **3. No**
- ☐ **4. Unknown**

13b) Did Exposure Incident Happen?

- ☐ **1. Before Activation**
- ☐ **2. During Activation**
- ☐ **3. After Activation**
- ☐ **4. Unknown**

13) Mark the Location of the Injury:



14) Was the Injury?

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

15) If injury was to the hand , did the sharp Item penetrate?

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

16) Dominant Hand of the Injured Worker

- ☐ **1. Right Handed**
- ☐ **2. Left Handed**

17) Describe the Circumstances Leading to this Injury (please note if a device malfunction was involved):

_____

_____

_____

_____

18) For Injured Health care Worker: If the sharp had no integral Safety Features, Do you have an opinion that such a Feature could have prevented the injury?

☐ **1. Yes** ☐ **2. No** ☐ **3. Unknown**

Describe:_____

_____

_____

19) For Injured Health care 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:_____

_____

_____

_____

Signature _____

Appendix (9-B) Blood and body fluid exposure Epinet report form

Last Name:_____ **First Name:**_____

Exposure ID: (for the office use only) B_____ **Facility ID: (for office use only)**_____

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

2) Department where incident occurred:_____

4) Home 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**
- ☐ **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, nurse 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 center**
- ☐ **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, loading dock)**
- ☐ **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 Fluid 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:**_____

Was that body fluid visibly contaminated with blood? ☐ **1. Yes** ☐ **2. No** ☐ **3. 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**
- ☐ **Other, Describe:** _____

12) Was the Exposure the Result of : (check one box only)

- ☐ **1. Direct Patient Contact**
- ☐ **5. Other Body Fluid Container Spilled/Leaked**

☐ **2. Specimen Container Leaked or Spilled**
☐ **3. Specimen Container Broke**
☐ **4. IV Tubing/Bag/Pump leaked/broke**
☐ **10. Feeding/Ventilator/ Tube separated /Leaked/ Splashed. Specify Tubing_____**
☐ **6. Touched Contaminated Equipment/ Surface**
☐ **7. Touched Contaminated Drapes/Sheets/Gowns, etc.**
☐ **8. Unknown**
☐ **9. Other, Describe:_____**

If Equipment Failure, Please Specify: Equipment Type:_____

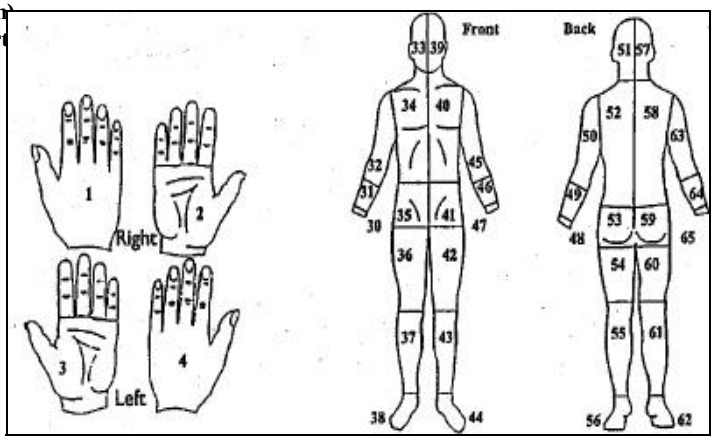
Manufacturer:_____

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 5cc, or up to 1 teaspoon)**
☐ **2. Moderate Amount (up to 50cc, or up to quart**
☐ **3. Large Amount (more than 50cc)**



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 Injured 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:_____
_____
_____
_____

Signature _____