



KEMENTERIAN KESIHATAN MALAYSIA

# AIDS

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**UNIVERSAL INFECTION  
CONTROL PRECAUTIONS**

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# **UNIVERSAL INFECTION CONTROL PRECAUTIONS**

AIDS/STDs Section  
**Ministry of Health Malaysia**  
**KUALA LUMPUR**

## **PREFACE**

This guide has been developed by staff of the Ministry of Health Malaysia on the basis of recommendations and meetings held by the various experts in this country from around have provided substantial input, and special mention needs to be addressed to Dr Mohd Zaini Abd Rahman, Dr G. Doraisamy, Dr Abdul Rahman Yusof, Dr Nasaruddin Abdullah and Ms Wong Yuk Heong.

This guide is intended for those who provide services to those who are infected or affected by the HIV Infection. It is hoped that its reference will be useful as a tool to promote consistency in the field of Universal Infection Control Precautions for those in the HIV Control Programs.

The Secretariat assistance of the AIDS/STDs Section, Ministry of Health in the production of this guide is gratefully acknowledged.

**KUALA LUMPUR, MALAYSIA**  
APRIL 1995

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## CHAPTER 1

# UNIVERSAL INFECTION CONTROL PRECAUTIONS

## -Minimising the risk of blood-borne infection

### 1.1 INTRODUCTION

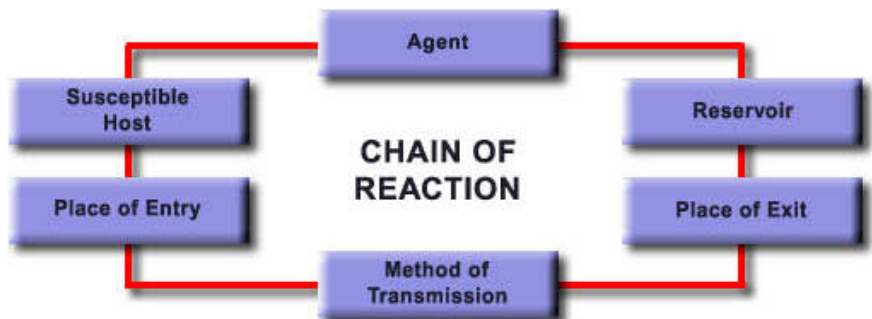
Blood and body fluids may contain blood-borne viruses (eg. Hepatitis B and HIV) or other bacterial and other viral pathogens. These can present a risk to other patients and health care workers. As it is not always possible to know who is infected with these pathogens, emphasis on infection control effort should focus primarily on 'Universal Infection Control Precautions' (UICP) which prevent the exposure to blood and body fluids which are presumed to be potentially infective.

These precautions apply to patients with:

- HIV;
- hepatitis B, C, non-A non-B
- syphilis
- malaria
- blood-borne viral and bacterial infections

### 1.2 THE CHAIN OF REACTION

Figure 1: The chain of infection



The chain of infection in Figure 1 depicts factors in the transmission of disease producing organisms (pathogens) from one person to

another. Each link represents an opportunity for the interruption of the process. It is vital to understand this in order to prevent transmission. The links of the chain are defined and described specifically for HIV and HBV in Figure 2

**Figure 2: The chain of HIV and HBV infection**

Link chain	in	Definition	HIV and HBV
Agent		Micro-organism which causes infection. Agents include bacteria, viruses, fungi and parasites	The agent causing HIV infection is human immunodeficiency virus The agent causing hepatitis B infection is Hepatitis B virus
Reservoir		A place where micro-organisms live, such as humans and animals, in soils, food, plants, air or water	HIV and HBV live inside humans
Place of exit		Where the micro-organism leaves the reservoir	HIV and HBV leave the human body via the penis in semen, vaginal secretions in blood through breaks in skin and rarely, the breast (breast-milk)
Method of transmission		How the micro-organism travels from place to place	HIV and HBV are transmitted via: <ul style="list-style-type: none"> <li>● sexual contact and semen donation;</li> <li>● through blood in use of contaminated needles and syringes</li> <li>● blood or blood products</li> <li>● from an infected mother to her unborn infant during delivery or shortly after birth.</li> </ul>

Link chain	in	Definition	HIV and HBV
Place of entry		Where the microorganism enters the next host usually the same way as it left the old host.	HIV and HBV enter the host via the penis, vagina, rectal lining, breaks in skin, blood transfusion and rarely breast-feeding.
Susceptible host		A person who may become infected.	HIV and HBV infection can occur in anyone who has sexual or blood contact with an infected person and in infants of HIV-infected mothers

### 1.3 RISK ASSESSMENT

Transmission of HIV in health care settings can occur from patient to health care worker, between patients, or from health care worker to patients.

The risk to staff arises:

- from sharps and hollow needles;
- splashing of conjunctivae and mucous membranes with contaminated blood and body fluids;
- heavy contamination of broken skin, eg. cuts, dermatitis etc.;
- handling of large quantities of blood and body fluids without protective clothing.

The risk to patients arises from:-

- use of recycled hollow needles and syringes;
- contaminated blood transfusion;
- heavy soiling of the environment;
- poor ward facilities and cleaning



## 1.4 UNIVERSAL INFECTION CONTROL PRECAUTIONS

*Application for universal infection control precautions means that all patients' body fluids should be treated as infectious, since it is not known who is infected and carry a virus.*

The purpose of these precautions is to prevent the exposure and infection of health care workers from blood-borne pathogens. The rationale for applying the precautions is that the health care worker may not know who is and is not infected, thereby making it important to treat all blood and body fluids as infectious.

*Infection control precautions are intended to isolate the virus and the body fluids, not the patient.*

Universal infection control precautions apply to:

Body fluids which may contain HIV or Hepatitis B:

- Blood
- Blood-stained body fluids
- Semen
- Vaginal secretions
- Tissues
- CSF, amniotic, pericardial, pleural fluids etc

Body fluids which may contain other pathogenic micro-organisms:

- Faeces
- Urine
- Vomit
- Sputum

Universal infection control precautions do not apply to:

Body fluids which are unlikely to contain pathogens:

- Tears

- Nasal secretions
- Sweat
- Saliva

Note: Gloves should be worn for direct contact With mucous membranes, such as the mouth and stomas.

## **1.5 PROTECTION CLOTHING**

Protective clothing eg. gloves, aprons etc is recommended when there is a risk of contamination by blood, body fluids and tissue when particular high risk procedures are performed.

There are basically two systems being practised. A two-tier system (protective Clothing is used only for known high-risk patients, such as HIV and Hepatitis B positive patients) is sometimes practiced in areas with a low incidence of blood-borne diseases. However single tier system (where universal precautions are applied to all patients) should be practised when the incidence is high.

### **1.5.1 Gloves**

Gloves should be worn for direct contact with blood or body fluids and for direct contact with non-intact skin or mucous membranes.

Gloves should be made of latex and should fit well. Disposable gloves are recommended unless heat dis-infection is available. Alcohol dis-infection between patients is not recommended because the viruses can become 'fixed' to the latex by the alcohol. Gloves should be discarded after each procedure.

### **1.5.2 Plastic aprons**

These should be worn to protect staff from body fluids. Again, disposable aprons are preferable to recycled ones.

### **1.5.3 Eye protection**

Goggles or some sort of eye protection (visor) should be worn to (avoid conjunctival splash contamination. Spectacles are acceptable.

### **1.5.4 Masks**

These are recommended to avoid blood or body fluids splashing into the mouth and nostrils.

### **1.5.5 Broken Skin**

Cuts and abrasions on the hands and forearms should be covered with a waterproof dressing.

### **1.5.6 Handwashing**

Hands should be washed thoroughly and immediately with soap and water after contact with body fluids.

Hands should be thoroughly washed even if gloves are worn.

Handwashing is the single most important procedure for the prevention of hospital-acquired infections.

There are two types of hand washing:

**1. Social hand washing.** This should be carried out:

- routinely before and after coming into contact with patients;
- when starting work;
- when going off-duty;
- when they become visibly dirty;
- when they are contaminated with body fluids or organic matter;
- after visiting the toilet;
- after removing gloves;
- after a non-sterile procedure;

- contact with patients during ward rounds or routine procedures such as bed-making or lifting should be followed by decontamination of the hands with alcohol chlorhexidine or a soap and water hand-wash.

**2. Aseptic hand-washing.** This type of hand washing should be used when an aseptic procedure is about to be performed on a patient (e.g. introducing central venous pressure lines, peripheral cannulae or urinary catheters). This requires meticulous cleaning of the hands and the use of a sustained action disinfectant. It is usually accompanied by the wearing of gloves.

#### **Procedure for hand-washing:-**

- Remove all rings, jewellery (including watch) and roll up the sleeves.
- Wet the hands under running water and apply a recommended amount of the hand-wash provided to the palms of the hands.
- Rub to make a lather.
- Rub the hands together and then cup them around each other to massage all the finger tips properly, massaging the thumbs and the webs of the fingers.
- Wash the wrist and backs of the hands.
- Rinse the hands thoroughly under running water.
- Dry thoroughly with several pieces of paper towel or single-use cotton towels.

#### **If washing for an aseptic procedure:**

- Do not touch any non-sterile surface.
- Wear gloves.
- Remove gloves after the procedure, wash hands and dry thoroughly.

#### **Hand Disinfection**

Sustained-action disinfectants with alcohol (rub) should be used:

- When moving from one patient to another.
- After non-sterile duties not involving body fluids.
- After handling or touching a potentially contaminated surface.
- Before touching a neutropenic or high-dependence patient.

All hand disinfection agents should be kept in a sterile dispenser that delivers a known quantity of soap or disinfectant. The container and nozzle must be cleaned regularly to prevent contamination and blocking. Open containers of disinfectant and soap should not be left on ward wash-hand basins as they can become contaminated with bacteria . When empty, the disinfectant containers should be returned to the pharmacy to be washed, cleaned and refilled. Defective pumps must be replaced immediately.

## **Soap and Water**

Soap and water remove most organic contamination and are acceptable as a social-hand wash. However, bars of soap may be left lying in pools of water, where they become contaminated with multiple antibiotic-resistant Gram-negative bacilli, which are then transferred to the hands of staff and then to patients. If bar soaps are used they should be stored dry - either on a piece of string or fixed to the wall by magnet holders.

Soap and water should be supplemented with an alcohol-containing sustained action disinfectant prior to carrying out an aseptic technique.

## **Sustained-action disinfectants**

Sustained-action disinfectants (e.g. chlorhexidine and povidone iodine) remove organic contamination and with repeated use, maintain low bacterial hand-counts. They are recommended prior to an aseptic technique. There is a reported level of allergy to these disinfectants, although the most common reason for 'allergy' is inadequate drying of the

hands. Hand-creams may be applied after washing and drying the hands.

Some users are genuinely allergic to chlorhexidine and alternative (e.g. povidone iodine) may be used.

### **Alcohol-based sustained-action disinfectants**

Alcohol-based sustained-action disinfectants (e.g. Hibisol) are extremely useful and are an excellent means of providing hand disinfection in areas where washing facilities are lacking or where the staff are too busy to disinfect their hands between patients. A container of alcohol-based disinfectant beside each bed in a high dependency unit results in a significant increase in compliance with disinfection policy. A container placed on the clinical notes trolley is useful for hand disinfection between patients during ward rounds.

Alcohol-based disinfectants are also useful where hand-washing facilities are lacking and in remote regions when minor surgical procedures are performed outside the operating theatre. Alcohol (70%) alone is cheaper and as effective as 'Hibisol'.

## **1.6 ISOLATION FACILITIES**

Single cubicles should be provided only for patients who need high-dependency nursing. If a special ward or unit is available, all patients should be treated as high risk and isolation is not necessary.

### **Requirements**

Protective clothing - gloves and aprons are essential. Masks should be used if indicated.

## **1.7 SPILLAGE OF BLOOD AND BODY FLUIDS**

Spillages should be dealt with as quickly as possible:

- wear domestic or latex gloves; (use a plastic bag over the hands if gloves are not available).
- cover the spillage with hypochlorite granules (presept) or paper towels soaked with hypochlorite solution (1000 p.p.m of available chloride or 10 000 p.p.m. for heavy soiling);
- allow 2 minutes contact time;
- clear spillages and dispose of as clinical waste;
- wash surface with water and detergent;

## 1.8 STERILIZATION AND DISINFECTION

All the blood-borne pathogens mentioned are killed by heat sterilization Recommended minimum temperatures are:

- 115 °C x 30 minutes or;
- 121 °C x 15 minutes or;
- 126 °C x 10 minutes or;
- 134 °C x 3 minutes

Ultraviolet light in doses lower than  $5 \times 10^3$  J/m<sup>2</sup> or gamma radiation below  $2 \times 10$  rads do not eliminate these viruses. Heat-sensitive equipment (e.g. fibre optics) should be disinfected with 2 per cent glutaraldehyde for at least 10-30 minutes and rinsed thoroughly before use. Heat disinfection (85°C x 3 minutes) is also effective.

### Disinfectants

Hypochlorites are recommended for surfaces and 2 percent glutaraldehyde for heat-sensitive equipment.

**Figure 3: Recommended dilutions of chlorine-releasing compounds**

"Dirty" Conditions	"Clean" conditions (for flooding the contaminated surface prior to removal of bulk material)	(Following physical removal of bulk material)
Available Chlorine (required dilution)	0.5% (5 g/litre, 5000 p.p.m.)	0.05 -01% (1 g/litre, 500 - 1000 p.p.m.)
Sodium hypochlorite solution (5% available chlorine)	100ml/litre	10 - 20 ml/litre.
Calcium hypochlorite 70% available chlorine	7.0 g/litre	0.7 -1.4 g/litre
Sodium dichloroisocyanurate (NaDCC) (60% available chlorine)	8.5 g/litre	0.9 -1.7 g/litre
NaDCC - based tablets ( 1.5 g of available chlorine per tablet)	4 tablets/litre	1/2 - 1 tablet/litre
Chloramine (tosylchloramide sodium, chloramine T (25% available chlorine)	20 g/litre	10 - 20 g/litre

\* Chloramine releases chlorine at a slower rate than dohypochlorites.

Therefore a higher available chlorine concentration is required in chloramine solutions for the same effectiveness. Chloramine solutions are not inactivated by biological materials (e.g. protein and blood) thus a similar concentration is recommended for both clean and dirty conditions.



Chlorine compounds are very unstable. Prepare solutions daily or store in a covered brown bottle for up to 30 days. The bottle must be tightly capped between use. Avoid direct sunlight.

General guidance on the use of chemical (disinfection procedures is found in 'Disinfection and Sterilization Policy and Practice, Ministry of Health, Malaysia. Third Edition 1993'.

## **1.9 INTRAVENOUS PROCEDURES**

These must be performed with great care by an experienced practitioner:

Gloves and plastic aprons should be worn; eye protection is optional.

A closed system (Vacutainer) is recommended but if a hypodermic needle and syringe must be used the whole unit must be discarded in a sharps container. **DO NOT RESHEATH NEEDLES.**

Cannulae, hypodermics and Vacutainers with retractable needles are available for use on high-risk patients. Although these are expensive and cumbersome to use, they greatly reduce the risk of needle-stick injuries.

### **Collection and transportation of blood from patients**

- Perform an absolute minimum of test on high-risk patients.
- Collect specimens (using a closed system, see above) in secure containers, label clearly and put in a leak-proof bag with request form.
- (Venepuncture should only be performed by an experienced phlebotomist. Double gloves may be worn and a disposable paper towel should be placed beneath the patient's arm to reduce contamination from accidental blood spillage).
- Any gauze or soiled paper towels should be discarded in the clinical waste bag.
- Transferring the blood to an appropriate container should be done slowly and carefully and without creating an aerosol.
- Needles should not be resheathed but discarded in the sharps container. However, if resheathing is absolutely necessary, use a mushroom device, which holds the cap so the needle

can be introduced safely. Alternatively, lay the cap on the table with the closed end against anything that offers resistance and insert the needle carefully - NEVER hold the cap while resheathing.

## **1.10 WASTE DISPOSAL**

Reference should be made to the Ministry of Health's Guidelines on Disposal of Hospital Waste. Waste should be separated immediately into Clinical waste, (potentially dangerous and presents a high risk of infection) non-clinical waste and kitchen waste.

### **Protection and training of staff**

- All staff handling clinical waste must be adequately trained and aware of the protocol for action in the event of accidental inoculation or body contamination.
- All staff must be provided with adequate protective clothing.
- Hepatitis B immunization should be offered to all staff and proper records of such immunization should be kept by the respective departments.

### **Sharps**

There is a very real risk of acquiring blood-borne diseases from sharps contaminated with blood products. All sharps, including FINE-BORE needles, must be single-use only:

- Needles and syringes should never be recycled, no matter what the circumstances.
- Needles should never be reused for injecting drugs into i.v. giving system.

### **Broken Glass**

Broken glass should be included in the sharps category. To dispose safely with broken glass:

1. Wear thick gloves
2. Use newspaper or similar thick paper to collect the glass.
3. Wrap the glass securely in the paper.

4. Put the wrapped glass in a cardboard box, which should be marked **BROKEN GLASS - HANDLE WITH CARE** or with yellow **BIOHAZARD** tape.
5. Tell the porters that the box contains broken glass.

## **Sharp Containers**

All sharps containers must:

- Be leak-proof and puncture-proof
- Have a handle that allows lifting with only one hand (so that the container falls away from the body when it is carried).
- Have a non-reopenable lid.
- Be designed to be used with one hand.
- Carry a **BIOLOGICAL HAZARD** sign.
- Be sealed and replaced when it is no more than two-thirds full.

Different sized sharps containers should always be available.

## **Disposal**

Sharps containers are clinical waste and should be put into clinical waste bags before being incinerated.

Ideally, all sharps containers should be incinerated but, if this is not possible, they should be buried in impervious tin containers and lined with the other clinical waste. Whichever method is used, there must be no possibility of injury from the sharps.

## **Excreta and other liquid waste**

Excreta and other liquid waste should be discarded directly into the toilet leading to a working sewer system.

Waste contaminated with blood or body fluid should be discarded into yellow colour bags for incineration, ensuring that no fluid leaks from the bag.

## **Limlug**

Where incineration facilities are not available, clinical waste can be treated with lime and buried in the hospital grounds.

To do this safely:

1. Dig a pit, approximately 2.5 m deep.
2. Spread a layer of up to 75 cm of clinical waste across the bottom of the pit.
3. Add a layer of lime.
4. Continue layering every 75 cm until the pit is filled to within 0.5 m of the ground.
5. Fill the pit with earth before starting another.

Limlug is the cheapest and most effective means of getting rid of clinical waste in areas where incineration facilities are not available. Care should be taken not to bury non-biodegradable products, eg. plastic bags. Tins containing sharps should be buried. Use paper bags when liming.

### **Accidents**

Staff safety is very important and inoculation accidents must be avoided. Where such an accident occurs, it must be documented by the senior manager and reported to the Head of Department and the Infection Control Team immediately so that appropriate action can be taken. (See Appendix VI & VII).

## **1.11 STAFF PROTECTION AND IMMUNIZATION**

- All staff working with hepatitis B and HIV patients must be immunized against hepatitis B.
- Staff should have adequate training in the care of patients who are HIV or hepatitis B - positive and should be aware of the risks involved.
- Clear policies of safety, covering inoculation accidents must be available. All inoculation accidents must be reported and documented.
- Frequent lectures are essential to allay fear and promote good morale.

## **Needle-stick injuries**

- If a non-immunized member of staff sustains a needle-stick injury they should be offered hyperimmune gammaglobulin within 48 hours of the injury and a course of hepatitis B vaccination should be started, if the source is Hepatitis B'e'Ag. positive, if not then Hepatitis B vaccine alone is sufficient.

If the source is known to be HIV-positive, Zidovudine may be administered within 24 hours of exposure and counselling should be offered to the injured member of staff. Zidovudine is reported to delay, but not to prevent, the disease process. It has serious side-effects and its efficacy had yet to be proven. (Reference should be made to the Appendix VI).

## **CHAPTER 2**

### **UNIVERSAL INFECTION CONTROL PRECAUTIONS FOR LABORATORY SERVICES INCLUDING BLOOD TRANSFUSION CENTRES**

#### **2.1 INTRODUCTION**

Laboratory safety procedures are important to protect the staff. Although HIV is a disease that can be transmitted by percutaneous inoculations of blood, there have been documented cases of health care workers who have seroconverted, e.g. their blood serology has become HIV positive as a result of needle stick injury or mucous membrane exposure with HIV positive blood. Standard laboratory safety practices can minimize such accidental exposure and ensure that each blood sample would be treated carefully with the assumption that all specimens are potentially infectious.

#### **2.2 NEW HEALTH CARE WORKERS**

- i. All new staff in health care setting should be trained in universal infection control precautions and laboratory safety procedures.
- ii. They should be screened for Hepatitis B and given appropriate vaccination.

#### **2.3 EMERGENCY MEASURES**

1. The emergency equipment (e.g. first aid box, wash basin, eye wash fountain) should be available and easily accessible.
2. Reporting of accidents
  - i. Accidents such as cuts, needle sticks and skin abrasions with instruments possibly contaminated with blood should be reported promptly to the safety officer and head of Unit.
  - ii. First aid should be administered immediately. The punctured wound/cut is washed with plenty of water and soap and or 1:10 hypochlorite solution (0.05% available chlorine). Bleeding is encouraged under cold running water. The eyes and mouth are

washed and rinsed with water if the face had been splashed with blood.

- iii. The accident (e.g. cuts, needle sticks) is documented, including details of exposure to blood and blood products.
- iv. The blood is tested to determine the likely type of infection whether Hepatitis or HIV.
- v. The staff is referred for clinical assessment, counselling and the blood sample obtained to test for Hepatitis/HIV status.

## **2.4 FURNITURE AND EQUIPMENT**

1. All Work benches and laboratory environmental surfaces (including drawers) should be made of non-porous material (e.g. formica) and able to withstand regular disinfection.
2. The top half of the door should be made of clear glass panel, visible from the outside.
3. Centrifuges should have a lid.

## **2.5 PROTECTIVE CLOTHING**

1. Gowns with no front opening are recommended. A changing area is to be provided for wearing of gowns on entering the laboratory and removal when leaving the laboratory.
2. A centralised laundry (dobi) system is recommended for used and soiled gowns.
3. Disposable gloves should be worn when handling all blood specimens. The gloves are to be removed when answering the telephones, performing written work and on completion of laboratory analyses.

## **2.6 HANDWASHING FACILITIES**

Basins for washing hands should be available and located at the exit/entrance of the laboratory.

## 2.7 GENERAL PRECAUTIONS

1. The specimens for which special measures must be taken are blood, serum, unfixed tissue and tissue fluids. Minimal risk is presented by urine, saliva and faeces without overt blood staining. Specimens should be kept in "dirty area" of the laboratory.
2. Separate clean areas should be designated for books, forms and reports.
3. Work bench tops should be regularly wiped with 0.5% sodium hypochlorite.
4. Serum, plasma and similar specimens should be preferably centrifuged in sealed buckets with translucent caps. If breakage occurs in a centrifuge, the investigation should generally be abandoned and the centrifuge decontaminated by chemical disinfection and the buckets by autoclaving. Important unrepeatable specimens may be salvaged by trained and informed staff wearing suitable protective clothing, as directed by the head of unit. It is not necessary to open the centrifuge buckets in a safety cabinet.
5. Centrifuge buckets should be routinely disinfected at the end of the day.
6. All Pan Jets must be sterilized every morning by boiling for 15 minutes. If contaminated by blood, it is to be cleaned and sterilized before using.
7. Laboratory equipment should be decontaminated according to the manufacturer's recommendation before repair and servicing. A system for certifying this should be set up.
8. Hands should be washed with soap and water: - on removing gowns and gloves - when contaminated with blood/blood products.
9. Products of human origin used as reagents or controls should have an identification number so that its source can be traced if necessary.
10. There is to be NO pipetting of specimens by mouth. Mechanical pipettors should be used.



## **2.8 COLLECTION, DESPATCH AND RECEPTION OF SPECIMENS**

1. Specimens must be collected in robust screw-capped and leak-proof containers which will stand upright. The diagnosis must be clearly written on the Request Forms.
2. Full instructions should be given to the amahs and attendants (porters) about action in case of an accident with an inoculation-risk specimen.

## **2.9 CHEMICAL PATHOLOGY/HAEMATOLOGY**

1. Test should wherever possible be confined to those which can be performed in an enclosed system e.g. automatic analyzer.
2. Automated machinery should be designed:
3. To avoid splashing (or be adequately screened)
4. To have a closed system from specimen presentation to safe discharge of effluent.
5. Blood-gas analyzers may present a particular problem, it should be satisfactory to decontaminate the application nozzle with disinfectant after use for a HIV-risk specimen.

Note: If the apparatus required servicing preliminary disinfection of the entire system will be necessary.

## **2.10 HISTOPATHOLOGY**

1. The usual methods of fixation of tissue and smears are satisfactory for the inactivation of HIV.
2. Wherever possible, tissues should be received in the laboratory as small specimens in fixative. For small biopsy specimens, 6-8 hours in formaldehyde solution would suffice and this time interval should satisfy most diagnostic needs. When a more rapid result is required other methods of fixation, such as the use of heated formaldehyde solution, may suffice. No special precautions need be taken with

fixed

specimens.

3. Frozen sections should not be made on unfixed material from HIV-risk patients. Post-mortem examinations are carried out for medicolegal purposes or clinical reasons at the medico-legal discretion of the Pathologist.

## **2.11 MICROBIOLOGY**

Specimens of blood or blood cultures which appear to have leaked will be processed only if unrepeatably.

Only tests necessary for patient management will be performed.

## **12. WASTE DISPOSAL**

1. All glassware should be decontaminated by autoclaving at 121 °C for 10 - 15 minutes or heat treated at 160 °C for one hour prior to discarding the contents.
2. Pour liquid wastes down a sink into a closed sewer system. If there is no working sewer, treat potentially contaminated liquid wastes the same as solids.
3. Sharp instruments and needles should be put in a puncture resistant container to be disposed of by incineration. Needles should not be bent or reinserted into the original sheath.

All blood and blood products should be autoclaved/heat treated before disposal.

## **CHAPTER 3**

### **INFECTION CONTROL PRECAUTIONS IN SPECIFIC DEPARTMENTS**

#### **3.1 Operating theatres and the labour ward.**

3.1.1 The hepatitis B and/or HIV status of the patients should be determined before the operation (the latter is voluntary). The theatre/labour ward staff (and Infection Control Team) should be informed so that appropriate preparations can be made:

- i. An adequate supply of hypochlorite and a new sharps disposal container should be ordered.
- ii. All disposable items used during the operation (administration sets, i.v. cannulae, etc.) should be disposed of in the sharps container.
- iii. The sharps container should be sealed and disposed of as soon as possible after the procedure.
- iv. All instruments should be sent to the CSSD after the procedure. They should be clearly labelled as high risk. No attempt should be made to wash the instruments after the procedure.
- v. Non-disposable items should not be incinerated - they can be sterilized.
- vi. Linen should be sent to laundry marked as 'infected linen'; there is no need for incineration. Pre-packed, disposable, sterile packs may be used if available.
- vii. All staff should wear protective clothing.
- viii. Keep equipment and staff to a minimum.
- ix. Suction - disposable suction tubing is preferred. Where this is not available send for autoclaving after use.
- x. Disposal of abdominal swabs: - there should be minimal handling; - the contaminated (blood-soaked) swabs should be discarded by the surgeon into individual plastic bags, this will facilitate weighing and counting. The swabs can then be discarded. Soaking in a disinfectant such as hypochlorite is not necessary.
- xi. Where possible avoid electrical and other delicate equipment, which is difficult to sterilize.

#### **3.1.2 After the procedure:**

- i. All disposable, incineratable waste should be removed in clearly labelled colour-coded bags.
- ii. Wash surfaces with warm water and detergent.

- iii. Wash walls up to hand height with water and detergent.
- iv. Spot clean blood and body fluid spillage with hypochlorite.
- v. Send heat-stable equipment for sterilization Label 'high risk'. Do not soak in bleach.
- vi. Send respiratory equipment for heat - or 2 per cent glutaraldehyde-disinfection (label clearly).
- vii. Wipe large machine (e.g. diathermy and anaesthetic equipment) with warm water and detergent to remove organic contamination. This is sufficient unless heavy soiling has occurred, when they should be wiped over with hypochlorite. Do not allow excessive exposure to hypochlorite - it corrodes metal.

### 3.1.3 Post-delivery care and immunization

- i. Isolate mother and baby in a cubicle if available.
- ii. All babies born to hepatitis B surface antibody positive mothers should be immunized against hepatitis B within 48 hours of birth. If the mother is known to be HBe antigen positive, the baby should also receive hyperimmune gamma-globulin.
- iii. Take blood from the baby when 24 hours old and repeat 3-6 weeks later to confirm hepatitis status, and 3 months later for HIV testing if indicated.
- iv. Wear protective clothing (gloves and disposable gowns) when handling blood and body fluids.
- v. Protective clothing should be disposed of in a clinical waste bag within the cubicle.
- vi. Place all body fluids (discharge and lochia) in a bag. Label as CLINICAL WASTE - HIGH RISK and send for incineration.
- vii. Toilet facilities. If private facilities are available with the cubicle, the bowl should be cleaned and wiped over daily. If facilities are not available then a bedpan should be provided, which should be immediately emptied and disinfected in the bedpan disinfector.
- viii. Send all linen, clothing, etc. to the laundry labelled 'infected linen'.
- ix. Label clearly all investigatory specimens taken from mother and baby.

## 3.2 Renal dialysis unit

The same basic principle apply to the dialysis unit as to the operating theatre and delivery room:

- i. Staff should be immunized against hepatitis B before starting work in the unit.
- ii. All patients should be screened and immunized against hepatitis B.
- iii. Disposable tubing and heat-labile equipment are recommended for dialysis.
- iv. The outer surfaces of the renal dialysis machine should be cleaned with warm water and detergent.
- v. The inside of the machine should be cleaned with 1 per cent chloro (hypochlorite) and rinse thoroughly before further use.
- vi. Disposable filters should be used to prevent contamination with blood.
- vii. Disposable administration lines, dialyser and needles should be used.
- viii. Equipment to be recycled should be able to withstand autoclave temperatures of 121°C.

### **3.3 Dental Unit**

Blood and body fluids containing blood should be considered infective in all dental patients. HIV has not been shown to be transmitted via saliva. However, dental procedures often result in small amounts of blood mixing with oral fluids. Thus, universal precautions should be followed for contact with blood and saliva.

- i. Wear gloves when in contact with oral mucous membranes.
- ii. Wear a mask and eye covering when splashes of blood or fluids containing blood are likely.
- iii. Sterilize or disinfect instruments after use with each patient and clean surfaces with a suitable disinfectant.

### **3.4 Housekeeping**

There are no special housekeeping precautions for the prevention of infection from HIV, HBV or other blood-borne pathogens. However, certain important points should be remembered:

- i. The greatest risk of housekeepers' exposure to HIV and HBV is via needlestick injury from trash which has not been properly packaged for disposal. All sharp instruments and equipment, including needles and syringes, must be disposed of in puncture-resistant containers.

- ii. Housekeepers and cleaners should carry waste in containers which are small enough to be easily held away from the body to avoid injuries.
- iii. Do not put hand into waste baskets.
- iv. Do not clean by hand under cupboards, but use cleaning equipment.
- v. Do not use disinfectant fogging of a room, following patient discharge. Disinfectant fogging is toxic and expensive. Thorough cleaning is the most effective way to remove soil and micro-organisms .

### **3.5 Laundry**

There are no special precautions for laundering to prevent the transmission of HIV. The following guidelines will help prevent transmission:

- i. Handle soiled linen as little as possible. Wear gloves when handling it.
- ii. Place wet linen into leak-proof bags. If no leak-proof containers are available, fold the linen with the wet parts inside, and surround with dry linen for carrying.
- iii. Bag linen at the location where it is used. Do not sort linen in patient areas.

Wash laundry in hot water (at least 71 degrees Centigrade or 160 degrees Fahrenheit). If only cold water is available, use special chemical detergents for this purpose or add bleach.

## **CHAPTER 4**

### **GUIDELINES FOR THE TRANSPORT AND DISPOSAL OF DEAD BODIES DUE TO HIV INFECTION/AIDS**

#### **4.1 INTRODUCTION**

HIV infection/AIDS is transmitted mainly by sexual contact and through blood and blood products. Therefore it is unlikely that transmission of HIV infection/AIDS can take place while handling dead bodies of patients with HIV infection/AIDS. However, persons handling dead bodies of confirmed or suspected cases should take all possible care to prevent blood, blood products or body fluids from coming into direct contact with their skin and mucous membrane. Those with obvious cuts, burns, open wounds and suffering from immune deficiency states therefore, should not be assigned to deal with the dead bodies. It is important for all health care workers to respect the different religious and cultural practices and traditions concerning the handling of dead bodies.

#### **4.2 GENERAL PRECAUTIONARY MEASURES**

1. All staffs/persons handling the body and the soiled linen should wear gloves.
2. Where there is possibility of injury to the fingers (e.g. cleaning the oral cavity) double gloves should be worn.
3. If there is danger of fluid spillage such as when disinfecting or washing the body, the attendant should wear in addition, a mask, waterproof apron and boots.
4. Further, they must wash their hands thoroughly with soap and water after the procedures.
5. If the relatives request to see the body, they should be allowed but must be strongly discouraged from embracing or kissing it.

#### **4.3 SUPERVISION**

Following notification, supervision for the handling, transport and disposal/burial of the dead bodies shall be by the district Health Inspector (for male dead bodies) the Public Health Nurse (for female dead bodies) and the Medical Assistant in charge of the mortuary for death in the hospital.

## **4.4 DEATH IN THE HOSPITAL**

### **4.4.1 HOSPITAL WARD**

1. Notify the Medical Assistant in charge of the mortuary who will inform the District Health Officer of the death. The next-of-kin of the deceased is also to be informed immediately of the death and that burial is required to be done within 24 hours. The assistance of the nearest police station should be duely sought if the next-of-kin could not be directly contacted.
2. The body should not be handled more than necessary.
3. Place the body in a translucent body bag and transport it to the mortuary room on a steel top trolley for subsequent disinfection.
4. Soiled linen should be handled as little as possible and with minimal agitation to prevent gross microbial contamination of the air and of person handling the linen. All the soiled linen should therefore be bagged, properly labelled and sent to the laundry where they are first disinfected with sodium hypochlorite for 1/2 hour before being washed.
5. Stretcher trolley, bed and other formites that come in contact with the body/body fluids must be immediately disinfected with sodium hypochlorite.

### **4.4.2. IN THE MORTUARY**

1. All clothings worn by the deceased are removed and soaked in sodium hypochlorite for at least 1/2 hours.
2. The body is first washed with sodium hypochlorite and then followed by rites of the respective religions. The washing is to be done by representatives of the religious department/relatives under direct supervision of the health personnel.
3. Cleaning of the oral cavity or other orifices should be done with the assistance of a sponge holder (forceps) or other suitable instrument.
4. All orifices should be plugged with cotton wool soaked in sodium hypochlorite.
5. The body is then wrapped in cloth. Bodies with open wounds due to accidents or with skin lesions should be wrapped in cloth and put in a translucent body bag. In the case of a Muslim, white cloth is used and the body further wrapped twice more in white cloth.
6. The body can then be transported in a coffin made of wood or metal for burial or cremation. This coffin must be of sufficiently solid construction to withstand load stresses.



4.4.3. The preparation area and any place which is contaminated or could possibly be contaminated with body fluids should also be disinfected with sodium hypochlorite.

#### **4.5 DEATH IN THE HOUSE**

1. The family of the patient would have been advised to inform the District Health Officer immediately of the death and the nature of the disease. This can be done directly or through the nearest Police Station or Penghulu.
2. Subsequent disinfection of the body and clothing should be supervised by the Health Inspector/Nurse.
3. A minimum number of people should be involved with the preparation of the body. It is recommended that not more than 5 people be involved.
4. The body is similarly disinfected first with sodium hypochlorite and then wrapped as in para 4.4.2.5.
5. Water from the washing of the body should be disinfected with chloride of lime.
6. The patient's clothing, bed, linen, preparation area and areas possibly contaminated by the body fluids should also be disinfected with sodium hypochlorite.
7. The body could then be buried or cremated according to the respective religious practice within 24 hours.

#### **4.6 TRANSPORT OF A DEAD BODY INTO/OUT OF THE COUNTRY**

1. The legal requirements for the transport into/out of the country of corpses, human remains or bones other than cremated ashes is the same as for other infectious disease. The necessary documents required are the death certificate, embalment certificate, and certificate of import/export or transport.
2. After the body had been embalmed, the body should then be put in a coffin with an inner lining of translucent polythene of sufficient thickness e.g. 0.26 mm thick and sealed.
3. The coffin is then placed in a container made of aluminium and sealed.
4. The outer container for covering or disguising the contents should be of wood or metal which must be of sufficiently solid construction to withstand load stresses.

## NOTES

1. 'Body bag': A translucent plastic bag 0.1 mm thick routinely used for the transport of bodies for forensic purposes.
2. "Sodium hypochlorite": The required strength for use is 1: 10 solution of 5.25% freshly prepared sodium hypochlorite.

Plastic body bag, gloves, mask, waterproof aprons and boots should be available in all Health Offices at all times.

## **APPENDIX I**

### **GUIDELINES FOR DISCARDING OF DISPOSABLE SYRINGES AND NEEDLES IN HOSPITALS, CLINICS AND HEALTH CENTRES IN GOVERNMENT AND PRIVATE SECTORS**

#### **1. OBJECTIVES:**

1. To prevent accidental needle prick injury and therefore, possible HIV infection to medical and health personnel.
2. To render all used disposable syringes and needles useless from use by potential users (e.g. Drug addicts).

#### **2. PRECAUTIONS**

To avoid needle prick injuries:

- Do not recap or resheath needles after collecting blood or giving injection.
- Do not bend disposable needles by hand.
- Do not reuse or sterilize disposable needles.

#### **3. METHODS FOR DISPOSAL**

Incineration is the recommended method for the disposal of the disposable needles and syringes. However, if an incinerator is not available then needles and syringes are disposed off by burning and burying in ground. (See Appendix IV).

#### **4. RECOMMENDED PROCEDURE - BY INCINERATION (eg. IN HOSPITAL)**

1. The used needles and syringes are put into a suitable puncture-proof container (hard plastic/glass/tin).
2. At the end of each working day, they are gathered centrally.

3. Burn the contents in the incinerator. The melted products are disposed off through the scavenging service.

## **5. SUPERVISION AND RESPONSIBLE PERSONNEL**

5.1 A supervisor is to be identified and responsible for the followings:

1. *Ensuring that staff directly handling needles and syringes safely render them useless as recommended by this guideline.*
2. *Ensuring that used disposable needles and syringes are properly disposed off.*

5.2 A suitable personnel is to be identified for each specific ward, clinic, laboratory or place to be responsible for the final disposal of the disinfected useless needles and syringes regularly.

## APPENDIX II

### FLOW CHART FOR THE DISPOSAL OF DISPOSABLE NEEDLES, SYRINGES AND SHARPS



## **APPENDIX III**

### **STANDARD BIOSAFETY GUIDELINES FOR LABORATORIES**

The major hazard to laboratory workers is contamination of the hands and mucous membranes of the eyes, nose, and mouth by infectious blood and other body fluids. Such contamination occurs as a result of penetrating injuries caused by sharp objects, and the spilling and splashing of specimen materials. The guidelines given here outline practices and procedures designed to keep such accidents to a minimum.

#### **PRECAUTIONS FOR LABORATORY WORKERS**

1. Wear gloves when handling infectious material or where there is a possibility of exposure to blood or other body fluids. All laboratories that work with material that is potentially infected with HIV require a generous supply of good-quality gloves.
2. Discard gloves whenever they are thought to have become contaminated wash your hands and put on new gloves.
3. Do not touch your eyes, nose, or other exposed membranes or skin with gloved hands.
4. Do not leave the workplace or walk around the laboratory wearing gloves.
5. Wash your hands with soap and water immediately after any contamination and after work is completed. If gloves are worn, wash your hands with soap and water after removing the gloves.
6. Wear a laboratory gown, overall, or uniform when in the laboratory. Wrap-around gowns are preferable. Remove this protective clothing before leaving the laboratory.
7. When work with material that is potentially infected with HIV is in progress, close the laboratory door and restrict access to the laboratory. The door should have a sign: 'Biohazard. No admittance'.
8. Keep the laboratory clean, neat, and free from extraneous material and equipment.
9. Disinfect work surfaces when procedures are completed and at the end of each working day. An effective all-purpose disinfectant is a hypochlorite solution with a concentration of 0.1% available chlorine (1 g/litre, 1000 ppm).
10. Whenever possible, avoid using needles and other sharp instruments. Place used needles, syringes, and other sharp instruments and objects in a puncture-resistant container. Do not recap used needles and do not remove needles from syringes.

11. Never pipette by mouth.
12. Perform all technical procedures in a way that minimizes the risk of creating aerosols, droplets, splashes, or spills.
13. Do not eat, drink, smoke, apply cosmetics, or store food or personal items in the laboratory.
14. Make sure that there is an effective insect and rodent control programme. (This is a standard biosafety recommendation).

## **SPILLS AND ACCIDENTS**

1. Spills of infected or potentially infected material should first be covered with paper towelling or other absorbent material. A disinfectant should be poured around the spill area and then over the absorbent material and left for 10 minutes. The standard disinfectant recommended for cleaning contaminated surfaces is a hypochlorite solution with a concentration of 0.5% available chlorine (5 g/litre. 5000 ppm). However, for laboratories working with HIV cultures and virus preparations, a higher concentration of available chlorine (1.0%) is recommended. The mixture of disinfectant and spilt material should be cleaned up with absorbent material, which should be placed in the contaminated waste container. The surface should then be wiped again with disinfectant. Gloves should be worn throughout the procedure, and direct contact between gloved hands and the disinfected spilt material should be avoided. Broken glass or plastic should be swept up with a dustpan and brush.
2. Needle-stick or other puncture wounds, cuts, and skin contaminated spills or splashes of specimen material should be thoroughly washed with soap and water. Bleeding from any wound should be encouraged.
3. All spills, accidents, and overt or potential exposure to infectious material should be reported immediately to the laboratory supervisor. A written record should be kept of all such incidents. Appropriate medical evaluation, surveillance, treatment and, if necessary, counselling should be provided.

## **HANDLING AND DISPOSAL OF CONTAMINATED MATERIAL AND WASTE**

1. Reusable equipment such as pipette tips, syringes, cannulas, needles and specimen tubes should be placed in a puncture-resistant metal or plastic container at the work station. Such equipment must be chemically disinfected prior to cleaning and then autoclaved prior to cleaning and

then autoclaved or boiled. Gloves must be worn during disinfection and cleaning.

2. Contaminated laboratory gowns, coats, and other protective clothing should be placed in a separate container located within the laboratory. Before reuse, such clothing should be autoclaved or disinfected and washed.
3. Disposable contaminated equipment, e.g. syringes, needles, and other sharp instruments or objects, should be placed in a puncture-resistant metal or plastic container at the work station. This and other contaminated material should preferably be autoclaved, boiled, or chemically disinfected in the work area. Alternatively, it may be transported from the work area in a securely covered leak-proof container to a central site on the laboratory premises for immediate autoclaving or incineration. If the containers are to be reused they should be cleaned and disinfected before reuse.
4. Incineration is the method of choice for disposing of contaminated material and waste if the incinerator is located on laboratory premises and under laboratory control. If the material has to be removed from the premises it must be autoclaved or otherwise disinfected. Ashes and debris should be buried in a landfill site.
5. Burial of decontaminated material and waste in a controlled landfill site is the only acceptable option when incineration is impossible or not permitted. Extreme care must be taken to ensure that any material and waste disposed of in this manner have been sterilized or disinfected and that syringes and needles are destroyed mechanically. The materials should be deposited in trenches, covered with earth, and compacted daily. The controlled fill must be fenced off, and scavenging strictly prohibited.
6. Radioactive material should not be incinerated. It should be disposed of in accordance with national codes and requirements.

## **HEALTH AND MEDICAL SURVEILLANCE OF EMPLOYEES**

Laboratory workers should be given an initial clinical examination, and a baseline serum sample should be obtained and kept frozen for possible future reference. All findings should be kept confidential.



If a laboratory worker is exposed to blood, other body fluids, or virus-culture material either parenterally or through mucous membranes, the source material should, if possible, be tested for the presence of virus and/or antibody. If the source material is positive for HIV antibody, virus, or antigen or is not available for examination, the worker should be serologically tested and advised to report and seek medical evaluation any acute febrile illness that occurs within 12 weeks after the exposure. Such an illness - particularly if characterised by fever, rash, or lymphadenopathy - may indicate HIV infection. During the follow-up that must be instituted the worker should be instructed to take general precautions for preventing HIV transmission, and given appropriate counselling. If seronegative, he or she should be retested 6 weeks after the exposure and periodically thereafter (at 3 and 6 months after exposure).

Records should be kept of all illness and absences of laboratory worker. The results of the HIV testing of laboratory employees should be kept confidential.

## **SUPPLEMENTARY GUIDELINES FOR SEROLOGICAL LABORATORIES**

For serological laboratories, the standard biosafety guidelines should be supplemented by the following requirements for the laboratory facilities and equipment.

### **Laboratory facilities and equipment**

1. It is desirable for work with known HIV-contaminated material to be carried out in a separate laboratory or laboratory room devoted exclusively to such work. If this is not possible, a secluded and clearly identified working area should be provided within the laboratory.
2. Biological safety cabinets are not required for the serological testing of potentially HIV - contaminated material. Safety glasses, face shields or other protective devices should be worn when necessary to protect the eyes and face from splashes and impacting objects.
3. Ample space must be provided for carrying out laboratory procedures safely.
4. The walls, ceiling and floor should be smooth, easy to clean, impermeable and resistant to the chemicals and disinfectants normally used in the laboratory. The floor should be non-slip.

5. The bench tops should be impervious and resistant to disinfectants, acids, alkalis, organic solvents and moderate heat.
6. The laboratory furniture should be sturdy and easy to clean.
7. Wash basins should be provided in each laboratory room, preferably near the exit.
8. Doors to laboratory rooms should be self-closing and have vision panels.
9. There are no specific ventilation requirements. A mechanical ventilation system is not necessary. Windows that open should be fitted with fly screens.
10. An autoclave for the decontamination of infectious laboratory material and waste should be available in the same building as the HIV laboratory.

Facilities for storing outer garments and personal items and space for eating, drinking and smoking should be provided outside the work-room.

## **APPENDIX IV**

### **GUIDELINES FOR HEALTH CARE WORKERS WHO HAVE BEEN EXPOSED TO BLOOD, BLOOD PRODUCTS AND BODY FLUIDS OF PATIENTS POSITIVE FOR HIV**

#### **1. Types of Exposure of Injury To Be Considered**

1. Percutaneous injury (deeper than epidermis) e.g. needle stick, cut with sharp object.
2. Mucous Membrane Contact
3. Skin that is chapped, abraded or has dermatitis.

#### **2. Immediate Action To Be Taken**

If an exposure or injury occurs, the following should be done:  
Press cut under running water for at least 5 minutes and clean with chlorhexidine (except for eye).

#### **3. Determine Current HIV Status of Patient And Medical Health Care Worker**

1. If HIV status of patient is negative, the health care worker may not need treatment.
2. If HIV status of patient is positive, the health care worker should be followed up and offered the option of treatment like AZT or DDI as prophylaxis due to high risk of HIV infection. There are arguments for and against the value of Zidovudine treatment. Some people think it is worth starting treatment with this drug immediately after exposure. The option to start treatment is for the 'at risk' workers.
3. If AZT (3' - AZIDO - 3' Deoxycythmidine) is used for prophylaxis the following doses are suggested:

1. 100 mg AZT 4 hourly; or 500 mg daily for 3 months To be given within one hour after injury/ exposure
2. Contraindications
  - Pregnancy
  - Breast Feeding The drug and the HIV virus are excreted in milk.
3. Interaction with other drugs:
  - acetaminophin containing compounds was associated with increased frequency of marrow suppression.
  - Gancyclovir (used to treat CMV infections) and most cancer chemotherapeutic drugs should not be administered with AZT .. risk of severe neutropenia.
  - Acyclovit, Amphotericin B, Bactrim, Ketoconazole Pentamidine, Sulfadoxine, Pyrimethamine are well tolerated when combined with AZT.
4. Adverse Reactions:
  - i. Headache - most common usually moderate to severe.
  - ii. Nausea
  - iii. Myalgia
  - iv. Insomnia
  - v. Skin Rash
  - vi. Bone marrow suppression usually manifest as anemia and neutropenia. Thrombocytopenia is rare.

Please note that AZT has toxic side effects. The risk of long term toxicity is not known yet.

The efficacy of zidovudine prophylaxis for human after exposure to HIV has yet to be assessed.

No data is available on the best dosage of AZT to be used.

#### **4. History**

If an exposure occurs the following information should be recorded in the worker's medical record. All information should be confidential.

1. Date and time of exposure
2. Job duty being performed by workers at time of exposure.
3. Details of exposure:
  - i. Amount of fluid/material
  - ii. Type of fluid/material
  - iii. Severity of exposure (eg. percutaneous exposure).
4. Describe source of exposure - whether it is HIV positive (patient if also need to be tested).
5. Details about counselling, post exposure management and follow-up

#### **5. Monitoring And Evaluation of Health Care Worker**

Worker should be clinically and serologically evaluated for HIV infection.

1. As soon as possible after exposure (baseline)
2. If Anti HIV negative, re-test at 6 weeks, 12 weeks and 6 month after exposure.
3. Worker should be clinically followed up and acute illness noted.
4. Worker should not donate blood, semen or organ during the 12 weeks after exposure. Advise on preventative aspect of HIV transmission. Exposed women should not breast-feed infants during the follow up period.
5. Carry out haematology (FBP) and liver function at each follow up.
6. Look for Drug Toxicity and side effects.

7. Monitor Retrovir (Zidovudine AZT) Using Monitoring Record established by Burrough Wellcome.

## 6. Reporting

Every exposure of a health care worker to HIV infected material should be reported to AIDS/STD section, Disease Control Division Ministry of Health with a copy to Medical Services Division for surveillance of workers with occupational exposure to HIV. No names or personal identifiers of workers need to be given.

## NOTES

**Exposures** If it is exposed to blood or blood products or cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, semen, vaginal secretion positive for HIV. Occupational exposure - exposure that occurs during the performance of job duties - that may place a worker at risk of HIV infection.

## **APPENDIX V**

### **MANAGEMENT OF PERSONS AFTER OCCUPATIONAL EXPOSURES**

Record in the worker's medical report the following:

- date and time of exposure
- job duty being performed by the worker at time of exposure.
- details of exposure
  - i.including amount of fluid or material
  - ii.type of fluid or material
  - iii.severity of exposure
- description of the source of exposure. The source (patient) should be tested for HIV (Anti-HIV) and hepatitis (HBsAg)
- details about counselling, post-exposure management and follow-up.

N.B. Confidentiality of source individual should be maintained at all times!

If the source individual is Anti-HIV positive then the HCW should be evaluated clinically and serologically for evidence of HIV-infection as soon as possible after exposure (baseline) and if seronegative, should be retested at 6 weeks, 12 weeks and 6 months after exposure.

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