

Infection Control Management Project

Volume 2: Guidelines for Infection Control at Obstetrics and Paediatrics OPD

- 1. Protocols
- 2. Reference Text
- 3. Tool for Monitoring

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Infection Control Management Project

Volume 2: Guidelines for Infection Control at Obstetrics and Paediatrics OPD

Adapted by AAA team from:

- The National Infection Control Guidelines, 2006. The National AIDS Control Program, Ministry of Health, Pakistan
- 2. Manual of National Standards for Family Planning, Prepared by FALAH Project MOPW, Population Council, Jhpiego, USAID Islamabad
- 3. Performance Standards for Primary Health Care At Rural Health Care At Rural Health Centers/Basic Health Units, Prepared by Pride Project, USAID, Jhpiego, International Rescue Committee, Management Sciences for Health
- 4. WHO Poster, How to Handwash & How to Hand rub, October 2006
- 5. Safe management of wastes from health-care activities (1999): WHO, 1999.
- 6. Infection Prevention Guidelines for Healthcare Facilities with Limited Resources. JHPIEGO and USAID. Linda Tietjen, Débora Bossemeyer, Noel McIntosh.
- 7. Infection Prevention Guidelines for Healthcare Facilities in Ethiopia. Federal Ministry of Health Ethiopia. Disease Prevention and Control Department. Addis Ababa, Ethiopia. July 2004
- 8. Participants Handbook. Injection Safety in the Context of Infection Prevention and Control. Ministry of Health and John Snow, Inc. Research and Training (MMIS Kenya Program). October 2006.
- Final Guideline. Infection Control. Prevention of healthcare-associated infections in primary and community care. National Institute of Health and Clinical Excellence, UK. 2003.







Infection Control at Obstetrics and Paediatrics OPD

All staff MUST:

- 1. Make certain that the OPD is clean
- 2. Ensure adequate supply of clean water for drinking and healthcare purposes.
- 3. Maintain hand hygiene, for preventing cross-contamination (person to person or contaminated object to person).
- 4. Have personnel protective equipment available (aprons, eyewear, gloves, close-toed shoes) and use them.
- 5. Prevent Needle/Sharp injuries and use containers for sharps disposal and empty these safely
- Ensure that clean supplies are available at the appropriate sites (gauze, cotton wool, instruments, plastic containers etc)
- 7. Ensure that antiseptics, disinfectants are available and used appropriately
- 8. Perform decontamination of instruments and other articles at the site of use
- 9. Have separate area for instrument cleaning
- 10. Ensure that soiled linen is collected properly
- 11. Follow that waste is collected properly







Reference Text

Standard Precautions as advocated by WHO for health care facilities

Treating all patients in the health care facility with the same basic level of "standard" precautions involves work practices that are essential to provide a high level of protection to patients, health care workers and visitors.

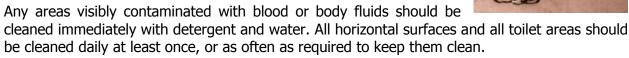
These include the following:

- Hand washing and antisepsis (hand hygiene);
- Use of personal protective equipment when handling blood, body substances, excretions and secretions;
- Appropriate handling of patient care equipment and soiled linen;
- Prevention of needlestick/sharp injuries;
- Environmental cleaning and spills-management; and
- Appropriate handling of waste.

1. Ensure Cleanliness of the OPD

All areas of the OPD which includes registration area, waiting area, examination rooms, pharmacy area and toilets must be kept clean. This means that there is NO dust, cobwebs, blood, trash, used needles and syringes or bandages, etc on the floor, walls, roof or fixtures (fans, lights) and furniture.

Routine cleaning is important to ensure a clean and dust-free environment. There are usually many micro-organisms present in "visible dirt", and routine cleaning helps to eliminate this dirt. The facility should be cleaned by wet mopping. Dry sweeping (*Jharoo*) is not recommended. The use of a neutral commonly used detergent solution improves the quality of cleaning.



2. Have Adequate Supply of Water for Drinking and Healthcare

The OPD should have provision for regular supply of adequate water for use. It is essential that this water is safe or made safe before use through purification process. Water filtration plant should be installed in the hospital to supply pure water to all units.







For drinking, store water in clean containers that do not allow hands to enter the storage. The water should either be from the filtration or purified through products like PUR, Aquatab, etc.

3. Maintain Hand Hygiene

Wash hands with soap and water when visibly soiled, otherwise use **hand rub**.

Before handwashing, remove ALL wrist and hand jewellery. Keep fingernails short, clean and free from nail polish.

The purpose of handwashing is to mechanically remove soil and debris from the skin, and reduce the number of transient microorganisms. **Handwashing with plain soap and clean water is as effective as washing with antimicrobial soaps**. In addition, plain soap causes less skin irritation.

Handwashing or disinfection should be done before:

- Examining a client/patient
- Wearing gloves for any routine procedure/examination

Handwashing or disinfection should be done after:

- Any situation in which hands may become contaminated, such as:
 - Handling soiled instruments and other items,
 - Touching mucous membranes, blood, or other body fluids (secretions or excretions), and
 - Having contact with a client/patient
- Removing gloves

If single use towels are not available, air dry hands. DO NOT use multi-use towels as they harbour large number of micro organisms and can be responsible for outbreaks of drug resistant organisms in hospitals.

Perform Antiseptic Hand Rub before touching each patient. Use of an antiseptic hand rub is more effective in killing transient and resident flora than handwashing with antimicrobial agents or plain soap and water. It is quick and convenient to perform, and gives a greater initial reduction in hand flora. Antiseptic hand rubs also contain a small amount of an emollient such as glycerin, propylene glycol, or sorbitol that protects and softens skin.

Making antiseptic handrub: A non-irritating, antiseptic hand rub can be made by adding glycerin, propylene glycol, or sorbitol to alcohol (2 ml in 100 ml of 60-90 percent ethyl or isopropyl alcohol solution). Use 5 ml (about 1 teaspoonful) for each application, making sure that it comes into contact with all surfaces of the hands. Rub hands together vigorously, paying







particular attention to the tips of the fingers, the thumbs and the areas between the fingers, until the solution has evaporated and the hands are dry (15-30 seconds).

DO NOT USE HANDRUB in case hands that are visibly soiled, or potentially grossly contaminated with dirt or organic material. They must be washed with liquid soap and water.

An emollient hand cream or any vegetable oil can be applied to protect skin from the drying effects of regular hand decontamination. In case of irritation, try a different product or just plain soap instead of carbolic or medicated soaps.

Popular commercial products (such as Safeguard, Bodyguard, Lifebouy) have no proven extra efficacy than normal soap. These may alter hand flora increasing resistance of organisms.

See figure for handwash and hand rub on next page







Method of Handwashing

Wash hands only when visibly soiled! Otherwise, use handrub! Duration of procedure: 40-60 sec.



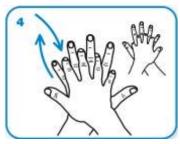
Wet hands with water



Apply enough soap to cover all hand surfaces



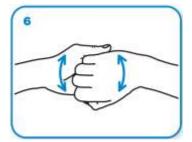
Rub hands palm to palm



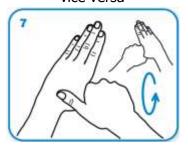
Right palm over left dorsum with interlaced fingers and vice versa



Palm to palm fingers interlaced



Backs of fingers to opposing palms with fingers interlocked



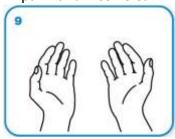
Rotational rubbing of left thumb clasped in right palm and vice versa



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



Rinse hands with water



And your hands are safe





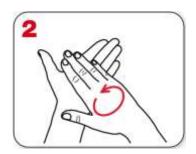


Method of Handrub

Wash hands only when visibly soiled! Otherwise, use handrub! Duration of procedure: 30 sec.

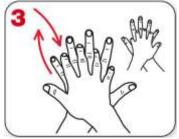




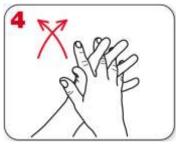


Apply a handful of alcohol handrub in a cupped hand and cover all surfaces

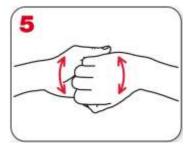
Rub hands palm to palm



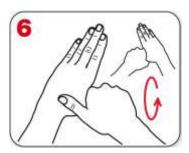
Right palm over left dorsum with interlaced fingers and vice versa



Palm to palm fingers interlaced



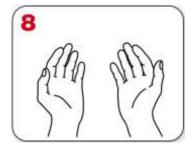
Backs of fingers to opposing palms with fingers interlocked



Rotational rubbing of left thumb clasped in right palm and vice versa



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



And your hands are safe







4. Use Personal Protective Equipment (PPE)

Protective barriers, referred to as personal protective equipment (PPE), are essential both for protecting patients/clients from micro-organisms present and staff working in the health care setting.

The OPD should have available and ready to use PPE at ALL times that includes, but is not limited to gloves, masks, eyewear, (face shields, goggles or glasses), caps, gowns, aprons and other items. These must be used by doctors, paramedics and other staff for situations where they may have contact with blood, body fluids, excretions or secretions. They must be adequately trained in proper use.

The following principles guide the use of personal protective equipment:

- Personal protective equipment should be chosen according to the risk of exposure.
- Do not share personal protective equipment.
- Change personal protective equipment completely, as needed and thoroughly wash hands each time you leave a patient to attend to another patient.
- Avoid any contact between contaminated (used) personal protective equipment and surfaces, clothing or people outside the patient care area.
- Discard the used personal protective equipment in appropriate disposal bags.

Gloves protect hands of health care workers from infectious materials and protect clients from microorganisms on health care providers' hands.

- Wear gloves (clean, non-sterile) when touching blood, body fluids, secretions, excretions or mucous membranes.
- Change gloves between tasks/ procedures on the same patient to prevent cross-contamination between different body sites. Hand decontamination (washing or alcohol rub) will be required between such tasks.
- Change gloves between contacts with different patients. Remove gloves immediately after use and before attending to another patient.



- Wash hands immediately after removing gloves. Use a plain soap, antimicrobial agent or antiseptic hand rub.
- Elbow length gloves should be used for deliveries and C-Sections
- Disposable gloves should not be reused, but should be disposed.

Masks should be large enough to cover the nose, lower face, jaw, and facial hair. They are worn in an attempt to contain the moisture droplets expelled when health care providers or surgical staff speak, cough, or sneeze, as well as prevent accidental splashes of blood or other

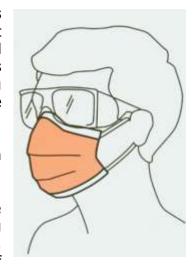






contaminated body fluids from entering the health care provider's nose or mouth. Unless the masks are made of fluid-resistant materials, they are not effective in preventing either. Wear surgical masks rather than cotton material or gauze masks. Surgical masks have been designed to resist fluids to varying degrees depending on the design of the material in the mask. Do not reuse disposable masks.

Eyewear protects health care providers in the event of an accidental splash of blood or other body fluid by covering the eyes. Eyewear includes clear plastic goggles, safety glasses, etc. Prescription glasses or glasses with plain lenses also are acceptable. Masks and eyewear should be worn when performing any task in which an accidental splash into the face is likely (e.g., performing a surgical procedure or cleaning instruments). If



disposable, discard appropriately. If they are reusable, decontaminate them according to the manufacturers' instructions. Use eyewear as a routine even for small surgery.

Gowns (clean, non-sterile) should be worn to protect the skin and prevent soiling of clothing during procedures that are likely to generate splashes of blood, body fluids, secretions or excretions. Impermeable gowns are preferable. A plastic apron may be worn on top of the gown to protect exposure to blood, body fluids, secretions and excretions.

Caps are used to keep the hair and scalp covered so that flakes of skin and hair are not shed into the wound during dressing. Caps should be large enough to cover all hair.

5. Prevent Needle/Sharp Injuries

Sharps are defined as comprising of needles, syringes, scalpels, blades, glass i.e. anything that may cause puncture or cuts. Take care to prevent injuries when using sharps.

- Use needle and syringe only once
- Keep handling to a minimum. DO NOT pass directly from hand to hand.
- **Do not recap or bend needles** prior to disposal.
- Do not disassemble the needle and syringe after use.
- Mutilate prior to disposal to prevent any unauthorized reuse by using needle cutters/destroyers.
- Dispose off the used mutilated disposable syringes and needles, scalpel blades and other sharp items in a puncture-resistant container with a lid that closes.

The puncture proof sharp containers can be made from cardboard box, used tin box, or hard plastic bottles that are closed.

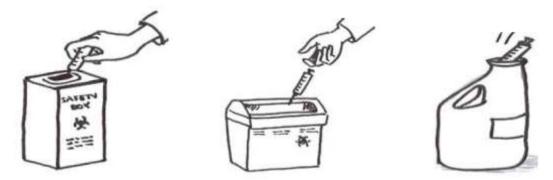
Make only a small opening in the box for disposing off sharps. These sharp containers should be available in dressing/injection rooms, EPI vaccination rooms, examination rooms, i.e. such containers must be located in ALL patient care areas where they are very easily accessible to







personnel working in these locations. They should be closed and immediately replaced when ³/₄ full.



6. Availability and Use of Clean Supplies

Clean supplies should be available at all the necessary sites in ready to use form. These include gauze or cotton wool, instruments, pick-up forceps in separate dry containers without antiseptics.

7. Availability and Use of Antiseptics and Disinfectants

The OPD must have sufficient amount of antiseptics and disinfectants. Antiseptics include alcohol (spirit). 60 - 90 % ethyl or isopropyl alcohol, chloroxylenol (Dettol), or chlorhexidine gluconate 2 - 4 % (Savlon), or iodine preparations Povidon+Iodine (Pyodine). Disinfectants include chlorine solution or powder. Besides these, the OPD must have supplies like detergents that do not include acid, ammonia or ammonium mops buckets and cleaning clothes.

8. Perform Decontamination of Instruments

The decontamination of instruments and other articles must be performed properly at the site of use immediately after it is used and before cleaning. The decontamination should be done with 0.5% chlorine solution. A new chlorine solution should be prepared at the beginning of each day. Plastic containers should be used for decontamination. Instruments and other items should be soaked in the 0.5% chlorine solution for at least 10 minutes before being taken to the washing/preparation room. Items taken to the washing/preparation room are carried in bucket or leak proof container.

Chlorine solution 0.5% is prepared by mixing 1 part of 5% bleach (domestic bleach) with 9 parts of water.

9. Have Separate Area for Instrument Cleaning

In OPD, the area for cleaning of instruments must be separate from procedure areas. Use at least 1 deep sink/basin with running water for washing instruments and a counter/separate space for instrument drying, and a closed shelf for storing clean items. Ensure that contaminated linen and medical waste are not brought into this room/space. Clean items are kept on one side of the room and dirty items on the other in a way that dirty and clean items







do not have any contact or any chance of mixing. Label areas accordingly. Keep area free from spills and water on the floor, and ensure there are no electric items near the water area.

The person cleaning instruments must comply with following recommendations:

- Wear utility gloves, eyewear protection or face shield, plastic aprons and gumboots or enclosed shoes
- Use a soft brush, detergent (without acid or ammonia) and 0.5% chlorine solution in the detergent water
- Scrub instruments and other items under the surface of water completely removing blood and other foreign matter
- Disassemble instruments and other items with multiple parts, and clean in the groves, teeth and joints with a brush
- Rinse the instruments and other items thoroughly with water
- Allow instruments and other items to air dry
- Wash hands with running water and soap for 10-15 seconds and air dry

10. Collect Soiled linen Properly

The following steps should be taken to collect soiled linen:

- The person cleaning the linens must be wearing utility gloves (elbow length), eye protection, impermeable apron and gumboots/closed shoes.
- Take extreme care during sorting as soiled linen from procedure areas frequently contain sharps (scalpels, sharp-tipped scissors, hypodermic and suture needles and sharp-tipped towel clips).
- The linen should be collected in leak proof containers/plastic bags and these should be properly sorted before being washed and dried.
- Cloth bags are adequate for collection and transport for majority of the patient care linen. They require the same processing as their contents.
- Confine the soiled linen to designated areas (interim storage area) until transported to the laundry/area.







- During collection and transporting, handle as little as possible and with minimum contact to avoid accidental injury and spreading of microorganisms.
- DO NOT SHAKE LINEN to limit the spread of microorganisms.

11. Waste Collection

The following protocol applies to various patient care areas (PCAs) of the hospital, while it will need adaptation according to the resources and infrastructure.

For solid wastes, bedside area of each patient should have:

- 1 White Bin (or plain bucket) with White (or Green) liner
- 1 Red Bin (or plain bucket) with Red liner and lid
- An adequately sized puncture resistant sharp container (yellow if possible) should be available in the PCA (at the nursing station).

For liquid wastes, bedside area of each patient should have (as needed):

- 1 disinfected urine jug/urinal
- 1 sputum cup

Counseling of patient as to the purpose of these buckets and containers is essential to run the system of segregation effectively. Without the cooperation of patients and attendant, this simple system will not work.

Each PCA should have

- 1 big BLUE container, (which does not need to be lined with a bag) for collection of recyclable dry waste materials (glass, packaging, card board, paper, etc).
- 1 YELLOW sharps box at the nursing station.
- 1 Needle cutter at the nursing station.

Segregation of Waste into Infectious and Non-Infectious at the Bedside

General waste should be preferably separated into 2 streams, if possible. Or else, it can all be collected as mentioned below in White/Green bags.

a. White/Green Bucket with White/Green Bag for General Waste (Non-Infectious)

Foods, fruits and vegetables Tea bags

Contents can be recycled or composted.

b. Blue Bin for recyclable waste

Paper and packaging
Glass bottles (but not broken glass)
Plastic drips







Injectables
Paper and packaging
Juice and Food Boxes

b. Red Bucket with Lid with Red Bag for Infectious Waste

Human tissues
Blood bags and all blood products
Soiled bandages, gauze
Urinary catheter tubing and bag, IV tubing
Surgical drains and bags, NGT, ET tube
Used IV and arterial catheters
Diapers

Bag should be incinerated as it is.

c. Sharps Waste

- Needles
- Scalpels
- Knives
- Blades
- Broken Glass

Sharps waste should be either packaged in a container with Chlorine solution added that acts as a corrosive and decontaminant, and then buried.

Alternately, the whole sharps box should be incinerated.

General principles

Easy access to supply of color-coded bags and containers

Fill bags to maximum of 3/4 capacity.

Do not put hands inside the bags/containers.

Avoid the pressing of filled bag.

The bags to be tied and handled by neck only while transportation.

Staff must wear protective clothing, gloves, mask, aprons etc while handling infected waste.

Never allow any person to put their hands inside the bags.

If bags tear, they should be replaced/re-bagged in new clean bags

Primary Transportation of Buckets and Containers from the Bedside

Primary transportation starts from patient bedside to primary storage area in the PCA.

However in some hospitals, there is only one general storage area for the entire hospital. Some hospitals do not have any storage area and the waste is directly taken to the disposal point (incinerator or burial site).

Small wheeled trolley should be used for primary transportation.

Trolley should be dedicated only to transportation of waste.

Trolley should be decontaminated and cleaned at the end of the day, and at least once daily.

Primary storage area:







Primary storage area is available in the premises of PCA and can be a small room in a corner with good ventilation, if possible, and a door to the outside.

Primary storage area should contain large bins with color coded liners.

Bin with red liner and lid for infectious waste.

Bin with white/green liner for general and non-recyclable waste.

Blue bin (with liner, if needed) for recyclable waste

Bins may be of any color, but bags/liners should exhibit proper color coding as per policy decided. Bags must be used to maintain the segregation.

The waste of the white/green bin can be sorted into two categories in the primary storage area.

Recyclable waste goes into the bin with the white liner.

Non-recyclable waste goes into the big blue bin (with or without a liner)

The waste of the red buckets or sharps container must NEVER be sorted.

Secondary Storage area:

From the primary storage area, waste should be transported in a dedicated trolley to the main secondary storage area of the facility from where waste is taken for final disposal.





Management of liquid waste

Drain liquid wastes (body fluids, etc) into the toilet. Decontaminate instruments such as bed pans after each use by using 0.5% Chlorine solution for at least 10 minutes.







Monitoring Tools for Hospital OPD

Performance Standard	Verification Criteria	Yes, No	Comments
1. Cleanliness of the OPD	Verify absence of visible dust, cobwebs, blood, trash, used needles and syringes in the following areas		
	Registration/waiting area		
	Examination room		
	Instrument processing areas		
	Lab or pharmacy		
	Toilet areas		
	Around sinks		
2. Adequate supply of safe water for drinking	Observe the provision of water for the OPD		
and other uses	Tap water available		
	Drinking water is kept in covered, clean containers		
	Drinking water is purified		
	Water for healthcare purposes is also purified		
	Last water testing done on		
3. Hand Hygiene is practiced	Verify and observe		
	Soap is available		
	Antiseptic hand rub is available		







	Hand rub/handwash is performed before touching each patient	
	Handwash is done after situations where hands are contaminated	
4. Type and use of Containers for Sharps	Verify whether:	
	The sharps containers are puncture- proof (cardboard box, hard plastic containers or cans that are closed) with only small opening for disposing of syringes with needle	
	Sharp containers are all less than ¾ full	
	Empty and new containers are nearby and ready for use with 0.5% chlorine solution in the following areas	
	o Examination room	
	o Injection/dressing rooms	
	o EPI vaccination room	
5. Availability and usage of Personnel protective equipment	Verify whether the following are available and ready for use:	
	Disposable gloves	
	Masks	
	Gowns	
	Eye wear	
	• Shoes	







	Utility gloves for cleaning instruments	
6. Availability of clean supplies	Verify whether:	
	Gauze and cotton is stored in dry containers without an antiseptic	
	Instruments and other items are stored in dry containers without antiseptics	
	Pick-up forceps are stored in dry containers without antiseptics	
7. Availability of Antiseptics and Disinfectants	Verify whether the following are available in storeroom in sufficient amounts:	
	Antiseptics:	
	Alcohol (spirit), ethyl or isopropyl alcohol	
	Chlorhexidine gluconate (2-4%) (e.g. Salvon) or	
	Pyodine	
	Disinfectant:	
	Chlorine solution 0.5%	
8. Decontamination of Instruments	Verify whether,	
	• Concentration of chlorine solution is 0.5%:	
	Liquid Chlorine:	







	o If using a concentration of 32%, 1 part bleach for 63 parts water If using a concentration of E%
	If using a concentration of 5%,1 part bleach to 9 parts water
	Powder Chlorine
	 If using Calcium hypochloride (35%), 14 g bleach powder for 1 litre water
	 If using calcium hypochloride (70%), 7 g bleach for 1 litre water
	A new chlorine solution is prepared at the beginning of the day
	Plastic containers are used for decontamination
	Instruments and other items are soaked in the 0.5% chlorine solution for at least 10 minutes
	Items are taken to prep room in bucket or leak proof containers
9. Separate Area Allocated for Instrument Cleaning	Verify whether
	Area for cleaning instruments is separated from the procedure areas
	Dirty and clean items do not have contact







	There is at least one deep sink/basin with running water for washing instruments	
	There is a counter/separate space for instruments to dry	
	A closed shelf area exists for storing clean items	
	Contaminated linen or medical waste are not brought into this room	
	No electric items are near the water area	
	No spills or water on the floors	
	Clean items are on one side of the room, dirty items on the other	
10.Cleaning of Instruments and Other Items	Verify whether the person cleaning the instruments complies with the following steps:	
	Wears:	
	Utility gloves	
	Eyewear protection or face shield	
	Plastic apron	
	Gumboots or enclosed shoes	
	Uses:	
	Soft brush	
	Detergent (liquid or powder, without acid or ammonia)	







	0.5% chlorine solution in the detergent water	
	Scrubs instruments and other items under the surface of water, completely removing all blood and other foreign matter	
	Disassembles instruments and other items with multiple parts, and cleans in the grooves, teeth and joints with a brush	
	Rinses the instruments and other items thoroughly with clean water	
	Allows instruments and other items to air-dry	
	Washes ands with running water and soap for 10-15 seconds and dries	
11.Soiled linen is Collected	Verify whether	
	Wears:	
	o Utility gloves	
	o Eye protection	
	o Gumboots or enclosed shoes	
	Collects soiled linen in leak proof containers/plastic bag without being pre-soaked	







	 Brings linen to the laundry in closed containers (buckets, plastic bags or carts) for sorting, washing and drying 	
	 Cleans linen using detergent (without acid, ammonia or ammonium) and mixed with chlorine bleach in the water 	
	Washes hands with soap and water after removing gloves and other personal protective equipment	
12.Waste Collection	Verify whether the person collecting waste complies with the following steps:	
	Wears:	
	o Utility gloves	
	o Eye protection	
	o Gumboots or enclosed shoes	
	Collects waste in leak proof containers	
	Collects waste when the container is 4 full	
	Maintains waste collection area clean and free of spills (walls, tables, floors)	
	Collection person washes hands with soap and water after removing gloves and other personal protective equipment	







13.Waste Disposal	Verify whether:	
	Contaminated liquid waste (blood, urine, faeces and other body fluids) are disposed of in the following manner:	
	 Emptied into a toilet from which water can be drained into a sewer system 	
	Containers with sharps are sent for incineration	
	Solid waste (used dressings and other materials contaminated with blood and organic matter) are sent for incineration/burial in the proper way	
	The person in charge of waste wears eye protection and utility gloves	





