



Infection Control Management Project

Volume 1: Guidelines for

Infection Control in BHU/RHC

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

January 2011



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Infection Control in BHU/RHC

Adapted by AAA Team from:

1. 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
2. Practical Guidelines for Infection Control In Health Care Facilities, WHO, 2004
3. Safe Management of Bio-medical Sharps Waste in India, WHO, 2005
4. Safe Management of Wastes From Health-Care Activities (1999): WHO, 1999.
5. The National Infection Control Guidelines, 2006. The National AIDS Control Program, Ministry of Health, Pakistan
6. WHO Poster, How to Handwash & How to Hand rub, October 2006



Infection Prevention in a BHU/RHC

All staff of BHU/RHC MUST:

1. Make certain that the **facility 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 **personal protective equipment** available (masks, aprons, eyewear, gloves, close-toed shoes) and use them.
5. **Prevent Needle/Sharp injuries** and use containers for sharps disposal and dispose these safely
6. Ensure that **clean supplies** are available at the appropriate sites (gauze, cotton wool, instruments, plastic containers etc)
7. Ensure that **antiseptics, disinfectants** are available
8. Perform **decontamination of instruments** and other articles at the site of use
9. Have **separate area** for instrument cleaning where **cleaning of instruments** and other items is performed properly
10. Make sure that there is a proper area for **instruments processing** where sterilization/HLD processes are performed properly
11. Develop a **shelf-life system** to store sterile/HLD items
12. Ensure that **soiled linen** is collected and cleaned properly
13. Follow that **waste** is collected and disposed off 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 antiseptics (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 Facility

All areas of the BHU/RHC which includes registration area, examination rooms, labor or birth room, post partum area, ward, instrument processing area, laboratory, pharmacy area, 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 and furniture.

Routine cleaning is important to ensure a clean and dust-free BHU/RHC 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 any commonly used neutral detergent solution improves the quality of cleaning.

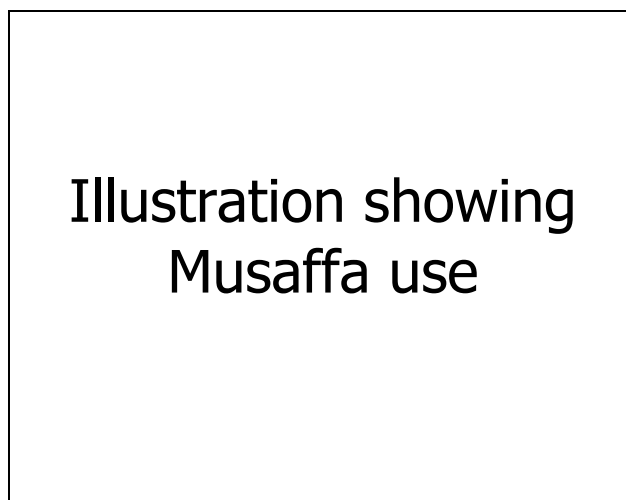
Any areas visibly contaminated with blood or body fluids should be cleaned immediately with detergent and water. All horizontal surfaces and all toilet areas should be cleaned daily.



2. Have Adequate Supply of Water for Drinking and Healthcare

The BHU/RHC should have provision for regular supply of adequate water for use.

For drinking, store water in clean containers and do not allow hands to enter the storage. The water should be purified through products like Musaffa, PUR, Aquatab, etc.



If the facility has water storage tank, they should be cleaned six monthly.

For Scrubbing before surgery in RHC, use purified water.

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. Cover cuts and abrasions with waterproof dressings. 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 should be done before:

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

Handwashing 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.
- Removing gloves

Method of Handwashing

Wash hands only when visibly soiled! Otherwise, use handrub!

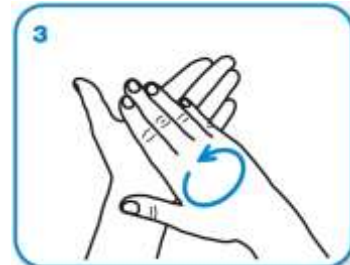
Duration of procedure: 40-60 sec.



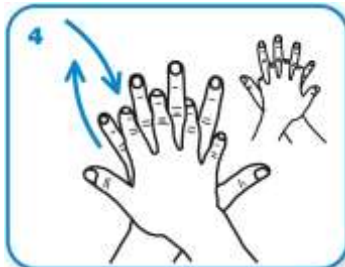
Wet hands with water



Apply enough soap to cover all hand surfaces



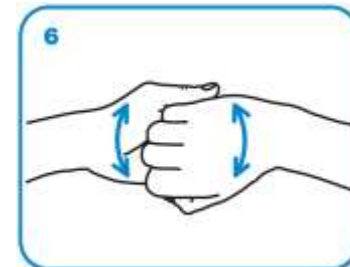
Rub hands palm to palm



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



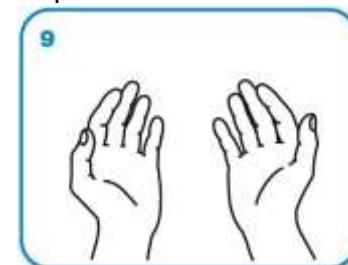
Rotational rubbing of left thumb clasped in right palm and vice versa



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

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.

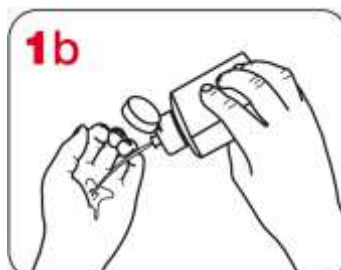
Method of Handrub

Wash hands only when visibly soiled! Otherwise, use handrub!

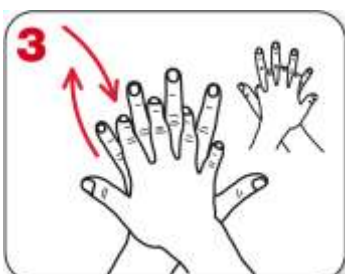
Duration of procedure: 30 sec.



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



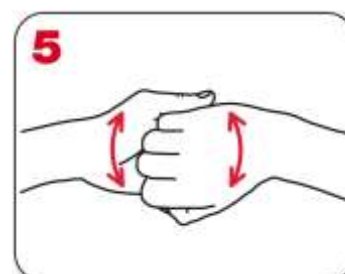
Rub hands palm to palm



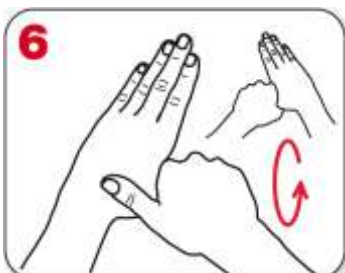
Right palm over left dorsum with interlaced fingers and vice versa



Palm to palm fingers interlaced



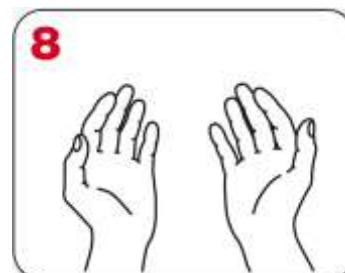
Backs of fingers to opposing palms with fingers interlocked



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

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.

Dry hands in air. Do not use towels (unless single use disposable towels are available).

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 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.

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 healthcare setting.

The BHU/RHC store should have available and ready to use PPE at ALL times that includes, but is not limited to gloves, masks/respirators, 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:

- 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 or another duty.
- Personal protective equipment should be chosen according to the risk of exposure.
- Discard the used personal protective equipment in appropriate disposal bags

Gloves protect hands of health care provider 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.

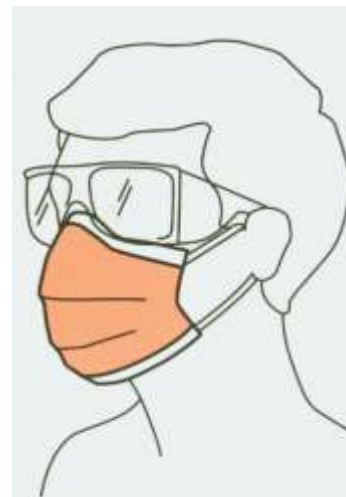
- Change gloves between contacts with different patients.
- Change gloves between tasks/procedures on the same patient to prevent cross-contamination between different body sites. Hand decontamination (washing or alcohol rub) will be required between such tasks.
- Remove gloves immediately after use 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). 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 such as incision and drainage of abscess. 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.

Surgical gowns made of fluid-resistant materials are important in keeping blood and other fluids, such as amniotic fluid, away from health care providers, particularly in delivery and operating theatres. Lightweight cotton gowns, which are commonly available, offer little protection. Under these circumstances, if large spills occur, the best things to do is shower or

bathe as soon as possible after completing the operation or procedure. Use in routine, if significant fluid is expected, for example during deliveries and cesarian sections.

Caps are used to keep the hair and scalp covered so that flakes of skin and hair are not shed into the wound during surgical procedures. Caps should be large enough to cover all hair. The other purpose is also to protect the wearer from blood or body fluid splashes and sprays.



Footwear is worn to protect feet from injury by sharps or fluids on the operating theatre floor (such as in OT in RHC). Theatre shoes/slippers must be kept clean and free of contamination from blood or other body fluid spills. All of the theatre shoes/ slippers must be washed and decontaminated with 0.5% Chlorine solution. These must not be worn outside the theatre. Any shoe taken outside the operating theatre must not be taken to the theatre again unless it is thoroughly cleaned, decontaminated and dried.

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, labor and birth rooms, wards and laboratories, i.e. such containers must be located in ALL patient care and laboratory areas where they are very easily accessible to personnel working in these locations. They should be closed and immediately replaced when $\frac{3}{4}$ 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 storeroom 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 BHU/RHC store must have supplies like commonly used 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 preparation room are carried in bucket or leak proof container.

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

9. Have Separate Area for Instrument Cleaning

In BHU/RHC, 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 grooves, 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 dry

10. Conduct Instrument Processing

The instrument processing area should be well illuminated and have at least one autoclave/boiler in working order. The processing area should have a place (such as closed cabinets) to store a sterile and/or HLD supplies and equipments. Access to this area should be limited.

In BHU/RHC, follow either the HLD or sterilization process. Boiling is a good HLD process and should be done as follows:

- Immerse all clean and disassembled instruments totally in water
- Close the lid of the container
- Boil the instruments for 20 minutes starting from the time a rolling boiling begins
- After 20 minutes, remove the instruments with HLD or sterile forceps and store them in HLD containers

- Do not leave boiled instruments in the water that has stopped boiling

Sterilization should be done using an autoclave or an autoclave pressure cooker in working order with working thermometer and working pressure gauge. Ensure:

- Instruments are properly prepared and placed in the sterilizer
 - Laid out in a metal box with holes or wrapped in two double layers of muslin or cotton cloth or two layers of Kraft paper
 - Sufficient space between packets/boxes exists to allow steam to circulate
 - All jointed instruments are in an unlocked position and instruments composed of sliding parts are disassembled
 - A 7 to 8 cm space exists between the packets and the upper portion (in case of a vertical autoclave) or the front portion (in case of a horizontal autoclave)
- The material is exposed to temperature of 121°C (250°F) and a pressure of 1.5atm (106 kPa or 15 lbs/in²) for a period of 30 minutes in the autoclave
- The material is exposed to a pressure of 70 – 90 lbs for a period of 35 minutes (in the autoclave pressure cooker)
- The material is dry when removed following within 2 weeks
- Unwrapped items are used immediately

11. Develop Shelf-life System

A shelf-life system to store sterile or HLD items should be in place. Which means that sterile packs and/or containers have expiration dates on them. The sterile packs should be free of tears, dampness, excessive dust and gross oil.

12. Collect and Clean Soiled linen Properly

The following steps should be taken to collect soiled linen:

- The person collecting the linens must be wearing utility gloves (elbow length), eye protection, impermeable apron and gumboots/shoes.
- Take extreme care during sorting as soiled linen (large drapes and towel drapes) from the operating room or other 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 without being pre-soaked and



the bags should be properly sorted before being washed and dried.

- Confine the soiled linen to designated areas (interim storage area) until transported to the laundry/area.
- Consider all cloth items (e.g., surgical drapes, gowns, wrappers) used during a procedure as infectious. Even if there is no visible contamination, the item must be laundered.
- Carefully sort all linen in the laundry area before washing. Do not presort or wash linen at the point of use, e.g. in patient care areas.
- Washing should be done with commonly used detergent mixed with chlorine bleach. The detergent used for washing should not contain acid, ammonia or ammonium.
- The person must wash hands with soap and water after removing gloves and other personal protective equipment.
- DO NOT SHAKE LINEN to limit the spread of microorganisms.

13. Waste Collection and Disposal

The first priority for all BHUs and RHC is to reduce the amount of waste and avoid mixing of general waste (paper, empty juice box, toffee wrappers, packaging) with infectious waste (e.g. dressings). The grounds outside the facility should be kept clean to avoid littering. Dustbins should be placed in sufficient number and at all appropriate places for general waste.

- The person collecting waste must wear utility gloves, eye protection and gumboots or enclosed shoes.
- Waste is to be collected in leak proof containers which should be emptied or transported for disposal when $\frac{3}{4}$ full.
- Human waste, such as placentas, must be placed in double bags in the leak proof containers.
- Remove gloves promptly after disposing off waste and wash hands with soap and water.
- The waste collection area must be kept clean and free of spills.

The waste should be disposed of in the following manner:

General Waste	Discard in community dustbin
Contaminated Liquid waste (blood, urine, faeces and other body fluids)	Emptied in a toilet or sink from which they could be drained into a sewer system. The toilet/sink should be rinsed with water after the waste has been emptied.
Sharps containers	Incinerated or buried

Solid waste (used dressings and other materials contaminated with blood and organic matter)	Incinerated or buried
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The following steps should be followed for **incinerating waste**:

- The waste should be burned in a small designated area
- The waste should be transported to the area just before burning
- The waste should be burned such that flames are visible till ashes are seen
- Ash from the incinerated material should be disposed off by burying
- There should be no waste lying around in the grounds

The following considerations should be made for a burial site for **burying waste**:

- The site for burying should not be accessible to other staff, community and domestic animals
- The site should be lined with a material of low permeability (for example clay)
- The burial site should be at least 50 meters away from any water source and should be located in an area free from floods
- The pit should be 1 meter square and 2 meters deep.
- The disposed waste should be covered with 10 – 15 cm of dirt each day
- The final layer of dirt should be 50 – 60 cm
- The burial pit should last for 30 – 60 days at most
- Also, there should be no waste lying around the grounds

Disposal of Sharp Containers by burial

(a) Sharps pit:

Blades and needles waste can be disposed in a circular or rectangular pit, after disinfection. Such a rectangular or circular pit can be dug and lined with brick, masonry or concrete rings. The pit should be covered with a heavy concrete slab which is penetrated by a galvanized steel pipe projecting about 1.5 m above the slab, with an internal diameter of up to 20 mm. When the pit is full it can be sealed completely, after another has been prepared.

(b) Encapsulation:

As per WHO (1999), encapsulation is recommended as the easiest method for the safe disposal of sharps. Sharps are collected in puncture-proof and leakproof containers. When a container is three-quarter full, a material such as cement or clay is poured in until the container is completely filled. After the medium has dried, the containers are sealed and disposed of in landfill sites.

Monitoring Tools for BHU/RHC

Performance Standard	Verification Criteria	Yes, No	Comments
1. Cleanliness of the Facility	Verify absence of visible dust, cobwebs, blood, trash, used needles and syringes in the following areas		
	• Admission/registration		
	• Examination room		
	• Labour or birth room		
	• Postpartum area		
	• Instrument processing areas		
	• Lab or pharmacy		
	• Toilet areas		
	• Around sinks		
	• Waiting area		
	• No BHU/RHC waste in the surrounding area of the facility		
2. Adequate supply of safe water for drinking and other uses	Observe the provision of water for the BHU/RHC		
	• Tap water available		
	• Overhead and underground water tanks are clean		
	• Water is brought and kept in containers		
	• Water containers are clean		

	<ul style="list-style-type: none"> • Drinking water is purified and kept properly 		
	<ul style="list-style-type: none"> • Last water testing done on 		
3. Hand Hygiene is practiced	Verify and observe		
	<ul style="list-style-type: none"> • Soap is available 		
	<ul style="list-style-type: none"> • Antiseptic hand rub is available 		
	<ul style="list-style-type: none"> • Hand rub/handwash is performed before touching each patient 		
	<ul style="list-style-type: none"> • Handwash is done after situations where hands are contaminated 		
4. Type and use of Containers for Sharps	Verify whether:		
	<ul style="list-style-type: none"> • 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 		
	<ul style="list-style-type: none"> • Sharp containers are all less than $\frac{3}{4}$ full 		
	<ul style="list-style-type: none"> • Empty and new containers are nearby and ready for use with 0.5% chlorine solution in the following areas <ul style="list-style-type: none"> ○ Examination room ○ Labour and birth room ○ Wards ○ EPI vaccination room ○ Pharmacy or lab area 		
5. Availability and usage of	Verify whether the following are available and ready		

Personal protective equipment	for use:		
	• Disposable gloves		
	• Gowns for labour and delivery/surgery		
	• Eye wear		
	• Close-toed shoes		
	• Heavy 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		
	• Iodine preparations (1-3%) (e.g. Lugol's) or		
	• Pyodine		
	Disinfectant:		
	• Chlorine solution		

8. Decontamination of Instruments	Verify whether,		
	<ul style="list-style-type: none"> Concentration of chlorine solution is 0.5%: 		
	Liquid Chlorine:		
	<ul style="list-style-type: none"> If using a concentration of 32%, 1 part bleach for 63 parts water or 		
	<ul style="list-style-type: none"> If using a concentration of 5%, 1 part bleach to 9 parts water 		
	Powder Chlorine		
	<ul style="list-style-type: none"> If using Calcium hypochloride (35%), 14 g bleach powder for 1 litre water 		
	<ul style="list-style-type: none"> If using calcium hypochloride (70%), 7 g bleach for 1 litre water 		
	<ul style="list-style-type: none"> A new chlorine solution is prepared at the beginning of the day 		
	<ul style="list-style-type: none"> Plastic containers are used for decontamination 		
<ul style="list-style-type: none"> Instruments and other items are soaked in the 0.5% chlorine solution for at least 10 minutes 			
<ul style="list-style-type: none"> Items are taken to prep room in bucket or leak proof containers 			
9. Separate Area Allocated for Instrument Cleaning	Verify whether		
	<ul style="list-style-type: none"> Area for cleaning instruments is separated from the procedure areas 		
	<ul style="list-style-type: none"> Dirty and clean items do not have contact 		
	<ul style="list-style-type: none"> There is at least one deep sink/basin with running water for washing instruments 		

	<ul style="list-style-type: none"> • There is a counter/separate space for instruments to dry 		
	<ul style="list-style-type: none"> • A closed shelf area exists for storing clean items 		
	<ul style="list-style-type: none"> • Contaminated linen or medical waste are not brought into this room 		
	<ul style="list-style-type: none"> • No electric items are near the water area 		
	<ul style="list-style-type: none"> • No spills or water on the floors 		
	<ul style="list-style-type: none"> • 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:		
	<ul style="list-style-type: none"> • Utility gloves 		
	<ul style="list-style-type: none"> • Eyewear protection or face shield 		
	<ul style="list-style-type: none"> • Plastic apron 		
	<ul style="list-style-type: none"> • Gumboots or enclosed shoes 		
	Uses:		
	<ul style="list-style-type: none"> • Soft brush 		
	<ul style="list-style-type: none"> • Detergent (liquid or powder, without acid or ammonia) 		
	<ul style="list-style-type: none"> • 0.5% chlorine solution in the detergent water 		
<ul style="list-style-type: none"> • Scrubs instruments and other items under the surface of water, completely removing all blood and other foreign matter 			
<ul style="list-style-type: none"> • Disassembles instruments and other items 			

	with multiple parts, and cleans in the grooves, teeth and joints with a brush		
	<ul style="list-style-type: none"> Rinses the instruments and other items thoroughly with clean water 		
	<ul style="list-style-type: none"> Allows instruments and other items to air-dry, or dries with a clean towel (if autoclaving) 		
	<ul style="list-style-type: none"> Washes hands with running water and soap for 10-15 seconds and dries 		
11. Instrument Processing	Verify whether instrument processing area:		
	<ul style="list-style-type: none"> Is well illuminated 		
	<ul style="list-style-type: none"> Has at least one autoclave/boiler in working order 		
	<ul style="list-style-type: none"> Has an area to store sterile and/or HLD supplies, instruments and equipment with limited access to the storage area or closed cabinets 		
12. Sterilization/HLD Process is performed Properly	Verify whether the HLD cycles listed below are followed:		
	Boiling		
	<ul style="list-style-type: none"> All cleaned, disassembled instruments are totally immersed in water before lid is closed 		
	<ul style="list-style-type: none"> The lid is closed 		
	<ul style="list-style-type: none"> Do not add anything to the pot after timing starts 		
	<ul style="list-style-type: none"> Instruments are boiled for 20 minutes <u>starting from the time a rolling boil begins</u> 		
	<ul style="list-style-type: none"> After 20 minutes, instruments are removed with HLD or sterile forceps and stored in HLD 		

	containers		
	<ul style="list-style-type: none"> Boiled instruments are not left in water that has stopped boiling 		
	OR		
	Sterilization		
	<ul style="list-style-type: none"> The autoclave or an autoclave pressure cooker is available and in working order with: <ul style="list-style-type: none"> Working thermometer Working pressure gauge (autoclave pressure cooker) 		
	<ul style="list-style-type: none"> Instruments are properly prepared and placed in the sterilizer <ul style="list-style-type: none"> Laid out in a metal box with holes or wrapped in two double layers of muslin or cotton cloth or two layers of Kraft paper Sufficient space between packets/boxes exists to allow steam to circulate All jointed instruments are in an unlocked position and instruments composed of sliding parts are disassembled A 7 to 8 cm space exists between the packets and the upper portion (in the case of a vertical autoclave) or the front portion (in case of a horizontal autoclave) 		
	<ul style="list-style-type: none"> The material is exposed to temperature of 121°C (250°F) and a pressure of 1.5 atm (106 kPa or 15 lbs/in²), for a period of 30 minutes (in the autoclave pressure cooker) 		

	<ul style="list-style-type: none"> The material is exposed to a pressure of 17-19 lbs for a period of 35 minutes (in the autoclave pressure cooker) 		
	<ul style="list-style-type: none"> The material is dry when removed following sterilization 		
	<ul style="list-style-type: none"> Wrapped sterile instruments are used within 2 weeks 		
	<ul style="list-style-type: none"> Unwrapped items are used immediately 		
13.Shelf-life System is adopted	Verify whether		
	<ul style="list-style-type: none"> Sterile packs and/or containers have expiration dates on them 		
	<ul style="list-style-type: none"> The sterile packs are free of teams. Dampness, excessive dust and gross oil 		
14.Soiled linen is Collected and Cleaned Properly	Verify whether		
	<ul style="list-style-type: none"> Wears: <ul style="list-style-type: none"> Utility gloves Eye protection Gumboots or enclosed shoes 		
	<ul style="list-style-type: none"> Collects soiled linen in leak proof containers/plastic bad without being pre-soaked 		
	<ul style="list-style-type: none"> Brings linen to the laundry in closed containers (buckets, plastic bags or carts) for sorting, washing and drying 		
	<ul style="list-style-type: none"> Cleans linen using detergent without acid, ammonia or ammonium and mixed with chlorine bleach in the water 		

	<ul style="list-style-type: none"> Washes hands with soap and water after removing gloves and other personal protective equipment 			
	<ul style="list-style-type: none"> Maintains laundry area clean and free of spills (walls, tables, floors) 			
15. Waste Collection and Disposal	Verify whether the person collecting waste complies with the following steps:			
	<ul style="list-style-type: none"> Wears: <ul style="list-style-type: none"> Utility gloves Eye protection Gumboots or enclosed shoes 			
	<ul style="list-style-type: none"> Collects waste in leak proof containers 			
	<ul style="list-style-type: none"> Collects waste the container is $\frac{3}{4}$ full 			
	<ul style="list-style-type: none"> Assures all tissue samples or placentas are double bagged in leak-proof containers 			
	<ul style="list-style-type: none"> Sufficient dustbins outside the facility (in the grounds) exist for general waste to avoid littering 			
	<ul style="list-style-type: none"> The grounds (outside of the facility) are free of hospital waste 			
	<ul style="list-style-type: none"> Maintains waste collection area clean and free of spills (walls, tables, floors) 			
	<ul style="list-style-type: none"> Collection person washes hands with soap and water after removing gloves and other personal protective equipment 			
	16. Waste Disposing	Verify whether:		
		<ul style="list-style-type: none"> Contaminated liquid waste (blood, urine, 		

	faeces and other body fluids) are disposed of in the following manner:		
	<ul style="list-style-type: none"> ○ Emptied into a toilet or sink from which water can be drained into a sewer system 		
	<ul style="list-style-type: none"> ○ The sink is rinsed with water after the waste has been emptied 		
	<ul style="list-style-type: none"> ● Containers with sharps are incinerated 		
	<ul style="list-style-type: none"> ● Solid waste (used dressings and other materials contaminated with blood and organic matter) are incinerated/buried 		
	<ul style="list-style-type: none"> ● The person in charge of waster wears eye protection and utility gloves 		
	If the waste is incinerated, verify whether:		
	<ul style="list-style-type: none"> ● The waste is burned in a small designated area 		
	<ul style="list-style-type: none"> ● The waste is transported to the area just before burning 		
	<ul style="list-style-type: none"> ● During incineration, visible flames occur and last until ashes are seen 		
	<ul style="list-style-type: none"> ● Ash from incinerated material is disposed off by burying 		
	<ul style="list-style-type: none"> ● That no waste is lying around the grounds 		
	OR		
	If the waste is buried in a pit, verify whether		
	<ul style="list-style-type: none"> ● The area is not accessible to other staff, the 		

	community and domestic animals		
	<ul style="list-style-type: none"> The burial site is lined with a material of low permeability (e.g. clay) 		
	<ul style="list-style-type: none"> The burial site is at least 50 meters away from any water source and it is located in an area free of floods 		
	<ul style="list-style-type: none"> The pit is about 1 meter square and 2 meters deep 		
	<ul style="list-style-type: none"> The disposed waste is covered with 10-15 cm of dirt each day 		
	<ul style="list-style-type: none"> The final layer of dirt is 50-60 cm 		
	<ul style="list-style-type: none"> The burial pit lasts for 30-60 days maximum 		
	<ul style="list-style-type: none"> There is no waste lying around the grounds 		
	OR		
	If the waste is encapsulated, verify whether		
	<ul style="list-style-type: none"> The sharps are collected in puncture resistant and leak proof container 		
	<ul style="list-style-type: none"> When the box is $\frac{3}{4}$ full, pour a material such as cement or clay until completely filled 		
	<ul style="list-style-type: none"> The material has hardened 		
	<ul style="list-style-type: none"> The container is land filled or buried 		