



Infection Control Management Project

Volume 3: Guidelines for Infection Control in the Obs/Gynae and Paediatric Ward

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

January 2011



Infection Control Management Project

Volume 3: Guidelines for Infection Control in the Obs/Gynae and Paediatric Ward

Adapted by AAA team From:

1. 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. WHO Poster, How to Handwash & How to Hand rub, October 2006
4. Safe management of wastes from health-care activities (1999): WHO, 1999.
5. Infection Prevention Guidelines for Healthcare Facilities with Limited Resources. JHPIEGO and USAID. Linda Tietjen, Débora Bossemeyer, Noel McIntosh.
6. Infection Prevention Guidelines for Healthcare Facilities in Ethiopia. Federal Ministry of Health Ethiopia. Disease Prevention and Control Department. Addis Ababa, Ethiopia. July 2004
7. 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.



Infection Control in Obs/Gynae and Pediatric Wards

YOU MUST:

A. Practice Standard and Transmission Based Precautions

1. **Consider every person** as potentially infectious as well as susceptible to infection.
2. **Treat all patients with the same basic level of standard precautions**
3. **Practice Hand Hygiene** between patients and tasks to prevent cross contamination from person to person or contaminated object to person.
4. Have **personal protective equipment** available (aprons, eyewear, gloves, close-toed shoes) and use them as needed.
5. Follow Transmission-based precautions when clinically indicated.

B. Follow Safe Practices

1. **Use strict aseptic techniques** for all clinical procedures.
2. **Strictly observe injection safety guidelines and prevent needle stick and other sharps injuries** by following safe work practices.

- 3. Follow Sharps Injury Protocol** in case of sharps injury.
- 4. Safely dispose off infectious waste** materials to protect those who handle them and prevent injury or spread of infection to the community.
- 5. Be immunized** against Hepatitis B and have adequate anti-HB antibody titers.
- 6. Avoid contact with patients** if you have serious communicable disease.
- 7. Teach patients post delivery and post surgical care,** including care of their newborns.

C. Maintain a Clean and Safe Environment

- 1. Perform environmental cleaning** twice daily and this should include damp dusting. Brooms are not recommended in patient areas and dry mop is preferred, followed by wet cleaning with detergent.
- 2. Handle spills** of infectious material correctly
- 3. Protect mattresses and pillow cases with plastic, waterproof covers** and these should be wiped with neutral detergent between patients.
- 4. Avoid sharing of linen and blankets** between patients.
- 5. Only have single patient use** for nebulizers, oxygen mask.
- 6. Humidifiers, attached to flow meters,** should be disinfected between patients.

- 7. Use new suction catheters and regularly clean suction bottle with hot water and detergent between patients**
- 8. Do not place patient files on the bed. Use a file trolley.**
- 9. Designate rooms for isolation, at least 1 for every 6 non-isolation beds.**
- 10. Isolate patients with specific colonization or infections.**
- 11. Minimize visitors and strictly adhere to Visiting Hours.**

Reference Text

A. Practice Standard and Transmission Based Precautions

A1 & A2. Consider All Patients as Potentially Infectious and Treat All Patients with the Same Basic Level of Standard Precautions

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 providers and visitors.

These include the following:

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

A3. Practice Hand Hygiene

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

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.



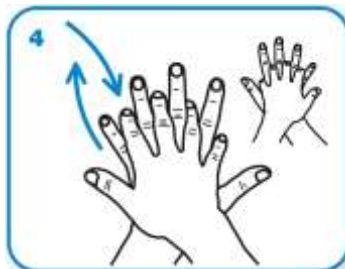
Wet hands with water



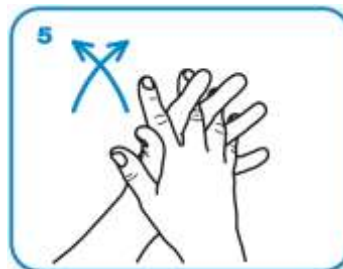
Apply enough soap to cover all hand surfaces



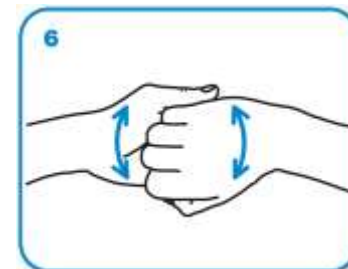
Rub hands palm to palm



Right palm over left dorsum with interlaced fingers and vice versa



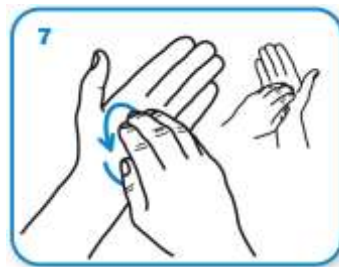
Palm to palm fingers interlaced



Backs of fingers to opposing palms with fingers interlocked



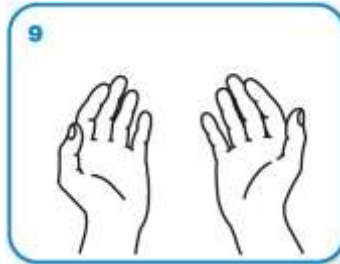
Rotational rubbing of left thumb clasped in right palm and vice versa



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



Rinse hands with water



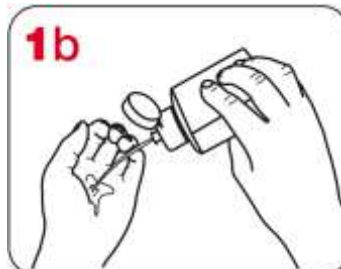
And your hands are safe

Perform Antiseptic Hand Rub between patients. 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. Rub 5 ml for 15 seconds and let it dry in air

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 and continue rubbing the solution over the hands until they are dry (15-30 seconds).

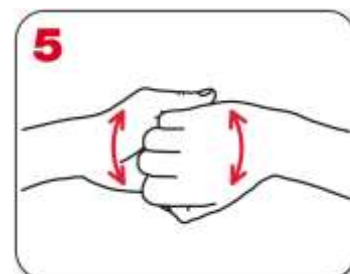
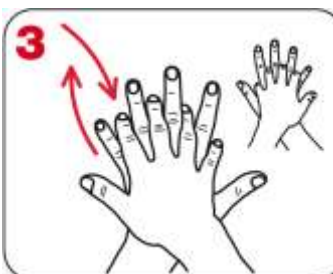
Method of Handrub

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

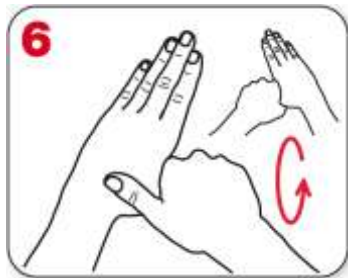
Rub hands palm to palm



Right palm over left dorsum with interlaced fingers and vice versa

Palm to palm fingers interlaced

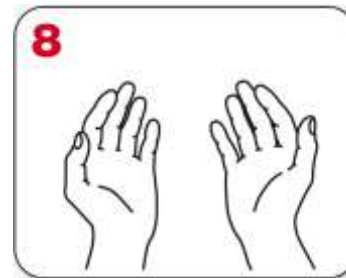
Backs of fingers to opposing palms with fingers interlocked



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

A4. Have Personal Protective Equipment (PPE) available

Protective barriers, commonly referred to as personal protective equipment (PPE), have been used for many years to protect clients from micro-organisms present on staff working in the health care setting. More recently, with the emergence of AIDS and HCV and the resurgence of tuberculosis and strains of influenza in many countries, use of PPE has become important for protecting the health care staff as well.

PPE includes gloves, masks/respirators, eyewear, (face shields, goggles or glasses), caps, gowns, aprons and other items. The ward store should have available and ready to use PPE at ALL times. 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 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.
- 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

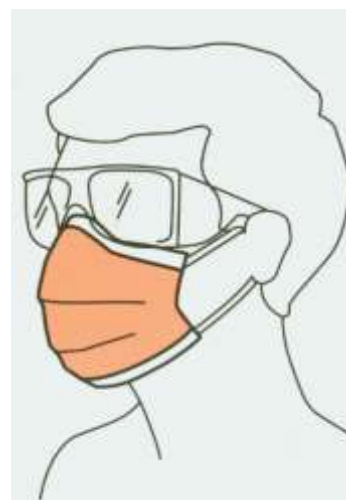
Gloves protect hands of health care providers from infectious materials and protect patients/clients from microorganisms on health care providers' hands.

- 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.
- Remove gloves immediately after use and before attending to another patient.
- Wash hands immediately after removing gloves.
- Use a plain soap, antimicrobial agent or waterless antiseptic agent.
- 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/beard. 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 minor surgical procedure or cleaning instruments). If disposable, discard appropriately. If they are reusable, decontaminate them according to the manufacturers' instructions.

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 clinical procedures. Caps should be large enough to cover all hair. While caps provide protection to the client, their primary purpose is to protect the wearer from blood or body fluid splashes and sprays.

A5. Follow Transmission-based Precautions when Clinically Indicated

Additional (transmission-based) precautions are taken while ensuring Standard Precautions are maintained. Additional precautions include:

1. Airborne precautions
2. Droplet precautions
3. Contact precautions.

Airborne Precautions

Airborne precautions are designed to reduce the transmission of diseases spread by the airborne route. Airborne transmission occurs when droplet nuclei (evaporated droplets) <5 micron in size are disseminated in the air. These droplet nuclei can remain suspended in the air for some time. Droplet nuclei are the residuals of droplets and when suspended in the air, dry and produce particles ranging in size from 1-5 micron. These particles can remain suspended in the air for long periods of time, especially when bound on dust particles. Diseases which spread by this mode include *open/active respiratory tuberculosis (TB)*, *measles*, *chicken pox*, *pulmonary plague* and *hemorrhagic fever with pneumonia*.

The following precautions need to be taken:

- Implement standard precautions.
- Place patient in a single room that has a monitored negative airflow pressure, and is often referred to as a “negative pressure room”. The air should be discharged to the outdoors or specially filtered before it is circulated to other areas of the health care facility.
- Keep doors closed.
- Anyone who enters the room must wear a special, high filtration, particulate respirator (e.g. N 95) mask. Limit the movement and transport of the patient from the room for essential purposes only. If transport is necessary, minimize dispersal of droplet nuclei by masking the patient with a surgical mask.
- It is important to gain the support of engineering services to ensure that the negative airflow pressure is maintained.
- If negative pressure is too costly to install, make sure room is well ventilated and air is exhausted to the outside.

Droplet Precautions

Diseases, which are transmitted by this route, include *pneumonias*, *pertussis*, *diphtheria*, *influenza type B*, *mumps*, and *meningitis*. Droplet transmission occurs when there is adequate contact between the mucous membranes of the nose and mouth or conjunctivae of a susceptible person and large particle droplets (>5 microns). Droplets are usually generated from the infected person during coughing, sneezing, talking or when health care providers undertake procedures such as tracheal suctioning. The following precautions need to be taken:

- Implement standard precautions.



- Place patient in a single room (or in a room with another patient infected by the same pathogen).
- Wear a surgical mask when working within 1-2 meters of the patient.
- ***Place a surgical mask on the patient if transport is necessary.***
- Special air handling and ventilation are not required to prevent droplet transmission of infection.

Contact Precautions

Diseases which are transmitted by this route include *colonization or infection with multiple antibiotic resistant organisms, enteric infections and skin infections.*

The following precautions need to be taken:

- Implement standard precautions.
- Place patient in a single room (or in a room with another patient infected by the same pathogen). Consider the epidemiology of the disease and the patient population when determining patient placement.
- Wear clean, non-sterile gloves when entering the room.
- Wear a clean, non-sterile gown when entering the room if substantial contact with the patient, environmental surfaces or items in the patient's room is anticipated.
- Limit the movement and transport of the patient from the room; patients should be moved for essential purposes only. If transportation is required, use precautions to minimize the risk of transmission.

Patient Placement: Appropriate or selective placement of patients is important in preventing the transmission of infections in the hospital setting. General principles in relation to the placement of patients include the following:

- **Spacing between beds:** In open plan wards there should be adequate spacing between each bed to reduce the risk of cross contamination/infection occurring from direct or indirect contact or droplet transmission. Optimum spacing between beds is 1-2m.
- **Single rooms:** Single rooms reduce the risk of transmission of infection from the source patient to others by reducing direct or indirect contact transmission. Where possible, single rooms should have hand washing and toileting facilities.

Anterooms: Single rooms used for isolation purposes may include an anteroom to support the use of personal protective equipment.

Sharing of rooms (Cohorting): For infection control purposes, if single rooms are not available, or if there is a shortage of single rooms, patients infected or colonized by the same organism can be cohorted (sharing of room/s).

When cohorting is used during outbreaks these room/s should be in a well-defined area (a designated room or designated ward), which can be clearly segregated from other patient care areas in the health care facility used for non-infected/colonized patients.

Transportation of Patients

Limiting the movement and transport of patients from the isolation room/area only for essential purposes only will reduce the opportunities for transmission of micro-organisms in other areas of the hospital. If transportation is required, suitable precautions should be taken to reduce the risk of transmission of micro-organisms to other patients, health care providers or the hospital environment (surfaces or equipment). For example:

When transporting a patient with pulmonary tuberculosis (open/active) placing a surgical mask on the patient while in transit is an appropriate precaution.

B. Follow Safe Practices

B1. Use Strict Aseptic Techniques For All Clinical Procedures

General Principles

- Make sure that you collect all necessary equipment before the start of the procedure. Practice Hand Hygiene.
- Wear sterile gloves and if splashing is anticipated, wear gown, mask and eyewear.
- Prepare the patient site as described for each procedure.
- Safely dispose of any sharps used in the procedure.
- Remove gloves after performing the clinical procedure and practice hand hygiene again.

Procedure for Insertion of Peripheral IV Lines

- Collect all necessary equipment.
- Practice Hand Hygiene.
- Place a clean sheet under the arm.
- Select an appropriate site, avoiding bony prominences or joints.
- Disinfect intravascular insertion skin site with alcohol or povidone-iodine. Allow the antiseptic to dry completely.
- Do not touch the venipuncture site once the skin has been disinfected. Carefully remove the cap of the catheter taking care not to touch the shaft of the catheter with the fingers before and during insertion.
- Select the correct catheter site.
- Insert the catheter as swiftly as possible using a “no touch” technique. Do not attempt repeated insertion with the same catheter. Do not attempt cleaning or disinfecting the catheter with any chemicals, including alcohol, povidone iodine or glutaraldehyde.
- Look out for flashback and then advance the catheter slowly.
- Apply sterile dressing.
- Secure the catheter to avoid movement.
- Label the site with the insertion date and time.
- Connect to the IV administration set.
- Clean around the site with alcohol.

- Inform and educate the patient and attendants about care of the catheter, especially during movement in bed, and for other tasks such as using the toilet and during bathing.
- Safely discard sharps.
- Practice hand hygiene after completion of the procedure.
- Change IV cannula after 72 hours.
- Change drip set after 72 hours.
- Educate patients and attendants on signs of infections caused by IV lines.

Procedure for Urinary Catheterization

- All equipment used must be sterile. Lay out the top of the trolley making sure all items are open and accessible.
- Perform hand hygiene.
- Sterile gloves must be worn and a “no-touch” aseptic technique should be used. A second pair of gloves should be available should contamination occur.
- The peri-urethral area should be thoroughly cleaned. Wiping motions should be carried out from front to back to avoid faecal bacteria being transported to the urinary meatus. In males, clean the glans with a disinfectant/detergent preparation. In females, separate the labia and cleanse the vulva using front to back technique. Use antiseptic solution to clean the urethral meatus prior to the insertion of the catheter.
- Single-use sachets of sterile (water-soluble) lubricant or Ointment Lignocaine should be used on the catheter prior to urethral insertion to reduce friction and trauma to meatus.
- Gently insert the catheter and advance it by holding the inner sterile sleeve, avoiding contact with non-sterile surfaces.
- Inflate the balloon by instilling the recommended amount of sterile water.
- Connect catheter to a sterile, closed urinary drainage system. Do not disconnect catheter unless absolutely necessary.
- Hang drainage bag below the level of the bed to prevent reflux. The bag must be supported in the drainage stand to allow free flow of urine. Do not allow the bag to touch the floor. Keep the bag always below the level of the bladder. Empty bag every 8 hours or earlier as needed. Put date and time on catheter bag every time a new bag is attached.
- Secure the catheter to the patient’s thigh to prevent movement and urethral meatal ulceration.
- Put the date and time of catheter insertion on the catheter tubing with a marker, and on the patient’s chart.
- Practice hand hygiene after completion of the procedure.
- Practice hand hygiene before emptying bag. Use a separate disinfected jug to collect urine from each bag.
- Educate patient and attendants on catheter care and emptying of the bag. Also educate on signs of infection and trauma caused by the catheter. Securing of the bed during movement in and out of bed is also important.

Procedure for Collecting Urine Specimen

- NEVER DISCONNECT CLOSED DRAINAGE SYSTEM TO OBTAIN A SAMPLE OF URINE.
- Never collect a sample for bacteriologic culture from the bag.
- Disinfect outside of catheter proximal to junction with drainage tube by applying alcohol wipe, allow to dry, then aspirate urine with a sterile needle and syringe.
- Transfer into a sterile container.

B2. Strictly Observe Injection Safety and Prevent Needlestick and Other Sharps 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.



B3. Follow Sharps Injuries Protocol in Case of Sharps Injury

Needle stick injuries are the commonest of sharps injuries, although other contaminated sharp instruments may also cause injuries. All health care providers with potential exposure should be vaccinated. For other personnel, the risk of hepatitis B, hepatitis C and HIV infection should be assessed and appropriate immunization or chemoprophylactic steps taken.

First aid

- **Contaminated needlestick, sharps injury, bite or scratch** – allow to bleed, wash with soap and running water. Do not squeeze wound or force bleeding.
- **Blood or body fluid in eyes or mouth** - irrigate with copious quantities of cold water
- **Blood or body fluid on broken skin** - encourage bleeding if possible and wash with soap under running water (but without scrubbing).

Report incident and discuss with consultant immediately

Discuss type of injury, donor HIV status if known, etc. If this urgent preliminary risk assessment considers there is a significant risk of HIV, post-exposure prophylaxis (PEP) for HIV needs to be started as soon as possible - ideally within 1 hour. This reduces risk of transmission by 80%. It may be appropriate to give the first dose of PEP pending a fuller assessment after the HIV status of the 'donor' is known. Where the donor is unknown, epidemiological likelihood of HIV in the source needs to be considered, although in most cases PEP will not be justified.

PEP for HIV currently consists of a 28-day course of treatment with a triple combination of antiretroviral drugs, has significant side-effects and needs careful follow-up.

Hepatitis B immunoglobulin should be given within 72 hours if the source is known to be HBsAg positive or their status is unknown and the exposed person has negative serology. HBV vaccination should be offered to all health workers who have never been immunized or are non-immune.

The exposed person should also be advised to have safe sex for three months, not to donate blood until all necessary screening tests are clear, and to see their GP if they develop a fever.

Investigations

- Take blood for virology, (HIV, hepatitis B, hepatitis C) from the injured worker.
- Start PEP where appropriate and consider the need for antibiotic therapy or hepatitis B immunisation. Recheck HIV status 3 months later and hepatitis serology 3 and 6 months later.

- Liver function tests should be performed and repeated at 3 and 6 months.
- Female workers should have a B-hCG check to exclude pregnancy.

Documentation

Maintain needle stick/sharps injury record, with details of PEP and other follow-up procedures to help in auditing such events, and also to see how to prevent such injuries in the future.

Follow-up

Ensure there is adequate follow-up of both healthcare provider and donor. They may need specific advice about having to take sick leave if medication is required and the possible requirement for psychological support.

B4. Safely dispose off infectious waste materials

Bedside area of every patient should have the following:

- 1 bucket with green liner
- 1 bucket with red liner and lid
- 1 sputum cup if needed
- 1 disinfected urine jug/urinal if needed
- An adequately sized puncture resistant sharp container (yellow if possible) should be available in the ward at the nursing station.

Counseling of patient as to the purpose of these buckets and containers is essential to run the system of segregation effectively. Without patient cooperation, this simple system will fail.

Identification of the type of waste:

- General waste (recyclable and non-recyclable)
- Infectious waste
- Sharps waste

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

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

- Paper and packaging
- Foods, fruits and vegetables
- Juice and Food Boxes
- Injectables
- Glass bottles (but not broken glass)
- Plastic drips

Contents can be recycled or composted.

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 incinerated together with the Sharps Box

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 ward. 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 cleaned regularly

Primary storage area:

- Primary storage area is available in the premises of ward 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 green liner for general and non-recyclable waste
- Bin with white liner for general and recyclable waste

Bins may be any color but color coded bags / liners should be proper color. Bags should be used to maintain the segregation.

The waste of the green bucket should now 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 bin with the green 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.

B5. Be immunized against Hepatitis B

All healthcare providers (HCPs) should be screened and tested for antibodies to HBsAg at the time of employment and all medical students should be screened on their entry into clinical posting.

All those who have not received previous immunization against hepatitis B should be given the 3 dose vaccination. They should be followed up 3 months after the completion of the course to test the antibodies to HBsAG levels. Those who do not respond should be offered a fourth dose or a further 3 doses, depending on the antibody level.

Those who have been immunized earlier but have titers below 10 mIU/ml should be given a booster dose of HBV vaccination. They should also be followed up to test antibodies to HBsAg levels after completion of the vaccination course. Those who do not respond should be offered a fourth dose or a further 3 doses, depending on the antibody level.

Persistent non-responders should be informed about the need for HBIG within 48 hours of parenteral exposure to HBV.

Pregnancy should not be considered a contraindication to HBIG or HBV vaccination.

B6. Avoid contact with patients if you have a serious communicable disease



Suggested work restrictions for HCPs exposed to or infected with a communicable disease are described below and should be part of a good program of Occupational Health and Safety.

Disease	Work Restriction	Duration
Conjunctivitis	Restrict from patient contact.	Until discharge ceases.
Cytomegalovirus	No restriction.	
Diarrhoeal diseases	Restrict from patient contact and food handling.	Until symptoms resolve.
Diphtheria	Exclude from duty.	Until antimicrobial therapy completed and 2 cultures are negative.
Enteroviral Infections	Restrict from care of neonates, infants and the immunocompromised.	Until symptoms resolve.
Hepatitis A	Restrict from patient contact and food handling.	Until 7 days after onset of jaundice.
Hepatitis B	Do not perform exposure prone invasive procedures.	
Hepatitis C	Do not perform exposure prone invasive procedures.	
Herpes Simplex	If herpetic whitlow on hands, restrict from patient contact. If oro-facial, restrict from care of neonates and high risk patients such as the immunocompromised.	Until lesions heal.
HIV	Do not perform exposure prone invasive procedures.	
Measles	Exclude from duty if active disease.	Until 7 days after the rash appears.
Post-exposure (susceptible HCP)	Exclude from duty.	From 5 th day after first exposure through 21 st day.
Mumps	Exclude from duty if active disease.	Until 9 days after onset of parotitis.
Post-exposure (susceptible HCP)	Exclude from duty.	From 12 th day after first exposure through 26 th day after last exposure.
Pediculosis	Restrict from patient contact.	Until treated and free of adult and immature lice.
Pertussis		

Disease	Work Restriction	Duration
Active	Exclude from duty	From beginning of catarrhal stage through 3 rd week after onset of paroxysms or until 5 days after start of antibiotics
Post-exposure (asymptomatic HCP)	No restriction but prophylaxis recommended.	
Post-exposure (symptomatic HCP)		Until 5 days after start of effective antibiotic therapy.
Rubella		
Active	Exclude from duty.	Until 5 days after rash appears.
Post-exposure (susceptible HCP)	Exclude from duty.	From 7 th day after first exposure through 21 st day after last exposure.
Scabies	Restrict from patient contact.	Until cleared by medical evaluation.
<i>Staphylococcus aureus</i> infection		
Active, draining lesions	Restrict from patient contact and food handling.	Until healed and dry.
Carrier state	No restriction, unless HCP is epidemiologically linked to transmission of the organism.	
Streptococcal infection, Group A	Restrict from patient contact and food handling.	Until 24 hrs after antibiotic therapy.
Tuberculosis		
Active	Exclude from duty.	Until proven non-infectious with 3 negative sputum AFB smears.
PPD convertor	No restriction.	
Varicella		
Active	Exclude from all duty.	Until all lesions dry and crusted over.

Disease	Work Restriction	Duration
Post-exposure (susceptible healthcare provider)	Exclude from duty.	From 10 th day after first exposure through 21 st day after last exposure.
Zoster	Cover lesions, restrict from care of high-risk patients.	Until all lesions dry and crusted over.
Post-exposure (susceptible HCP)	Restrict from patient contact.	From 8 th day after first exposure through 21 st day after last exposure.
Viral respiratory infection, acute febrile	Exclude from care of high risk patients during community outbreak of RSV and influenza.	Until acute symptoms resolve.

B7. Teach patients post delivery and post surgical care, including care of their newborns to prevent any potential infections.

Patients and their attendants need to be taught post delivery and post surgical care, which may range from basic personal hygiene to dealing with vaginal discharge, lochia, blood, etc.

Care of the newborn is also an important aspect, since admitted mothers are expected to nurse their babies who might be staying either next to them at the ward, or admitted in the nursery, if available. Post partum breast and perineal care and care of the umbilical cord stump, are other areas to be considered for patient education.

Post delivery instruction for mother should include the following:

- Early ambulation
- Perineal hygiene
- Restrict use of bedpan
- Use of hygienic sanitary towel and discourage use of self made towels

Newborn Instruction should include:

- Cord care with alcohol swab
- Clean dress

C. Maintain a Clean and Safe Environment

C1. Perform environmental cleaning twice daily

Check infrastructure, making sure that there is no crevices and cracks on floors, no seepage on walls, and no leakage from the roofs.

Housekeeping refers to the general cleaning of hospitals and clinics, including the floors, walls, certain types of equipment, tables, and other surfaces. The purpose of general housekeeping is to: reduce the number of microorganisms that may come in contact with patients, visitors, staff and the community; and provide a clean and pleasant atmosphere for patients and staff.

General Principles

- **Scrubbing (frictional cleaning)** is the best way to physically remove dirt, debris and microorganisms.
- **Cleaning** is required prior to any disinfection process because dirt, debris and other materials can decrease the effectiveness of many chemical disinfectants.
- Always progress **from the least soiled areas to the most soiled areas** and from **high to low areas**, so that the dirtiest areas and debris that fall on the floor will be cleaned up last.
- **Dry sweeping**, mopping and dusting should be avoided to prevent dust, debris and microorganisms from getting into the air and landing on clean surfaces.
- **Follow mixing (dilution) instructions** for disinfectants. Too much or too little water may reduce the effectiveness.
- **Written cleaning schedules** should be made.

Cleaning Methods

Make sure that the staff is educated about the frequency of cleaning, with the type of cleaning method used at each site, and for each type of equipment and surface.

Use wet mopping with:

- **Single-bucket (basin) technique:** One bucket of cleaning solution is used. The solution must be changed when dirty. The killing power decreases with the increased load of soil and organic material present.



- **Double-bucket technique:** Two different buckets are used, one containing a cleaning solution and the



other containing rinse water. The mop is always rinsed and wrung out before it is dipped into the cleaning solution. The double-bucket technique extends the life of the cleaning solution (fewer changes required), saving both labor and material costs.

Do Not Use Formaldehyde/Formalin

- Do not use disinfectant fogging (e.g., fumigation with dilute formaldehyde (formalin) solutions to reduce microbial contamination of environmental surfaces such as walls, ceilings and floors.
- It is not effective, is time-consuming (requires 24 hours) and the fumes are toxic (irritating to mucous membranes of the nose and eyes).

Scrubbing with a disinfectant and cleaning is a safer, quicker and more effective way to reduce microbial contamination on these surfaces.

Schedule and Procedures

Write up schedules and follow them closely. Develop schedules according to the needs of each area. Do not clean during visiting hours.

The detailed guideline is below.

Site, Areas, Equipment	Cleaning schedule and procedure
Walls, windows, ceilings and doors, including door handles	<ul style="list-style-type: none"> ▪ Spot clean when visibly dirty with a damp cloth, detergent and water. ▪ Usually, routine damp dusting is adequate; disinfection not required.
Chairs, lamps, tables, tabletops, beds, handrails, grab bars, lights, tops of doors and counters	<ul style="list-style-type: none"> ▪ Wipe daily and whenever visibly soiled with a damp cloth, containing disinfectant cleaning solution. ▪ Immediately disinfect when contaminated.
Noncritical equipment (e.g., stethoscopes and blood pressure cuffs)	<ul style="list-style-type: none"> ▪ Wipe daily and whenever visibly soiled with a damp cloth, detergent and water. ▪ If equipment visibly soiled with blood or other body fluids or the patient is under contact precautions, it should be cleaned AND disinfected before reuse.
Floors	<ul style="list-style-type: none"> ▪ Daily and as needed with a wet mop, detergent and water. ▪ Disinfectant needed, when contaminated. ▪ Mop should be disinfected and kept dry after use
Sinks	<ul style="list-style-type: none"> ▪ Scrub daily or more often as needed. ▪ Use SEPARATE mop, cloth, brush and disinfectant cleaning solution. ▪ Rinse with water.
Toilets and latrines	<ul style="list-style-type: none"> ▪ Scrub daily or more often as needed.

	<ul style="list-style-type: none"> Use SEPARATE mop, cloth, brush and disinfectant cleaning solution.
Patient rooms and wards	<ul style="list-style-type: none"> Clean daily and after patient discharge. Same cleaning process applies to rooms used for isolation. Keep SEPARATE cleaning equipment for isolation rooms, and disinfect and clean on a routine basis, if possible. If same equipment is to be used, clean and disinfect equipment used in isolation rooms, before being used in another room.
Procedure rooms connected to the ward	<ul style="list-style-type: none"> After each procedure and whenever visibly soiled, wipe horizontal surfaces, equipment and furniture with disinfectant cleaning solution. Clean blood or other body fluid spills.
Examination rooms	<ul style="list-style-type: none"> After each procedure and whenever visibly soiled, wipe horizontal surfaces, equipment and furniture with disinfectant cleaning solution. Ideally, linen on the examination table should be changed after each patient. Clean blood or other body fluid spills.
Curtains	<ul style="list-style-type: none"> Change and clean curtains according to the routine schedule and when visibly soiled.
Soiled linen	<ul style="list-style-type: none"> Collect soiled linen daily (or more often as needed) in closed, leakproof containers.
Waste	<ul style="list-style-type: none"> Collect waste from all areas at least daily, or more frequently as needed. Avoid overflowing.
Waste containers	<ul style="list-style-type: none"> Clean contaminated waste containers after emptying each time with proper precautions. Clean non-contaminated waste containers when visibly soiled and at least once a week. Use a disinfectant cleaning solution and scrub to remove soil and organic material.
Clinical Equipment that needs reusing	<ul style="list-style-type: none"> Thermometers should be washed with soap and water between each use. Do not immerse in spirit or dettol solutions. Tongue depressors should be washed with soap and water after each use. Wheelchairs and stretchers should be decontaminated and cleaned if soiled.

C2. Handle spills of infectious material correctly

Ensure that cleaning of spills of blood, body fluids and other potentially infectious fluids is IMMEDIATE, with trained personnel. Any incident involving patients that need or needed potential isolation measures, or suspected outbreak should be efficiently reported.

In the event of a spill, the following spill clean-up procedure should be used:

For small spills

- Wear utility or examination gloves
- Remove visible material using a cloth soaked in a 0.5% chlorine solution
- Wipe clean with a disinfectant cleaning solution.

For large spills

- Cordon off the area so that patients and staff do not accidentally step on the spill.
- Wear utility gloves and protective clothing, including face and eye protection if indicated.
- Contain the spill with cloth or paper towels or any absorbent material. Use an appropriate disinfectant (0.5% Chlorine solution) over the paper towels (absorbent material) and the immediate surrounding area.
- Apply disinfectant concentrically beginning at the outer margin of the spill area, working toward the centre.
- Mop up the solution.
- After the appropriate amount of time (e.g. 30 min), clear away the materials.
- Do not use hands for collection of glass and other materials. If there is broken glass or other sharps involved, use a dustpan or a piece of stiff cardboard to collect the material and deposit it into a puncture-resistant container for disposal.
- Disinfect the area of the spillage.
- Clean as usual with detergent and water.

C3. Protect mattresses and pillows with plastic, waterproof covers.

Clean and disinfect the cover regularly as part of a routine. Rinse thoroughly and dry. If there has been an infected patient, disinfect with a disinfectant solution, allow 2 minutes contact time then rinse and dry. Inspect mattresses routinely for damage.

C4. Avoid sharing of linen and blankets between patients

Linen and blankets should be laundered between patients. Launder in hot water (70 degrees to 80 degrees) OR soak in clean water with bleaching powder 0.5% for 30 minutes. Wash again with detergent and water to remove the bleach.

C5. Only have single patient use for nebulizers, oxygen mask

If masks and nebulization kit/lines have to be reused, then first decontaminate with 0.5% Chlorine solution, followed by washing with detergent, and rinsing with water. Dry with sterile gauze. Re-fill with sterile water only.

C6. Humidifiers, attached to flow meters, should be disinfected between patients

Clean and disinfect sterilize device between patients and fill with distilled water which must be changed every 24 hours or sooner, if necessary.

C7. Use new suction catheters and regularly clean suction bottle with hot water and detergent between patients

Following use, the reservoir should be emptied, washed with hot water and detergent and stored when dry. Wear a plastic apron and non-sterile disposable gloves for this procedure.

C8. Do not place patient files on the bed

The immediate environment of the patient is heavily contaminated with microorganisms. Files must not be placed on the bed of the patient, since they will become contaminated with microorganisms and then spread through the hands of the many healthcare providers. Files should be neatly stacked in a file trolley, which can be easily maneuvered and cleaned. A bottle of alcohol rub, for use between patients, should be attached to the file trolley to facilitate hand hygiene as an additional measure in the prevention of spread of infection.

C9. Designate rooms for isolation, at least 1 for every 6 non-isolation beds

In hospitals, it is essential that adequate numbers of single rooms are available for the isolation of patients with suspected or confirmed infections such as with multidrug resistant organisms, pulmonary tuberculosis or influenza. Each side room should preferably have a hand basin at the port of exit, a patient's washbasin, toilet and shower.

C10. Isolate patients with specific colonization or infection

Isolate patients with specific colonization or infection with MRSA, VRE or other multi drug resistant pathogens, as well as scabies and draining wounds in a single room, or cohort in a larger room for the same organism and follow contact precautions.

Place patients with pulmonary tuberculosis, measles and chicken pox in airborne isolation.

Place patients with meningococcal meningitis, pertussis, influenza, mumps and rubella on droplet precautions. Patients with pulmonary tuberculosis should be transported wearing a surgical mask.

Use PPE for the isolation rooms. Do not wear "overalls" or routine wear inside the rooms.

C11. Minimize visitors and strictly adhere to visiting hours

Controlling the number of visitors is an important step in maintaining a clean and manageable environment and reducing the spread of communicable diseases. No visitor of less than 12 years of age should be allowed inside the ward at any time.

Monitoring Tool for Obs/Gynae and Pediatric Wards

Obs/Gynae Ward:

Date: __/__/__

1	Hand Hygiene	YES	NO	Comments
	Health care provider observed: Designation:			
	Hand hygiene prior to clinical procedure/examination			
	Hand hygiene after clinical procedure/examination			
	Staff nails short and clean			
	Handwashing sink available			
	<ul style="list-style-type: none"> • Running water available 			
	<ul style="list-style-type: none"> • Soap available 			
	<ul style="list-style-type: none"> • Hand Drying Method: towel paper air-dry 			
	Hand rub available			
	<ul style="list-style-type: none"> • Alcohol rub at point of patient care 			
	<ul style="list-style-type: none"> • Ratio of rub to patient :_____ 			
	<ul style="list-style-type: none"> • Alcohol rub dispenser filled 			
	<ul style="list-style-type: none"> • Dispenser in working order 			
2	Personal Protective Equipment	YES	NO	
	PPE readily available			
	Health care provider observed: Designation:			
	Wearing gloves when handling blood and body fluids			
	Gloves removed after task completed			
	Hand hygiene after removal of gloves			
	HCP does not go from one patient to another with same gloves			
	Wearing gowns when splashing/soiling likely to occur			
	Gown removed after task completed			
	HCP does not go from one patient to another with same gown			
	Goggles/Eye wear worn when indicated			

	Caps worn when indicated			
	Wearing N95 mask for TB patients			
3	Prevention of Blood Stream Infections	YES	NO	
	Date and time of insertion of Peripheral Venous catheter (PVC) written on tape			
	PVC inserted for less than 72 hours			
	Signs of phlebitis present			
	Date and time of insertion of Central Venous Catheter (CVC) written on tape			
	Dressing of CVC clean			
4	IV injections and lines	YES	NO	NA
	Needle left inserted into multidose vial or fluid bag			
	New single use needle and syringe to draw up med			
	New single use needle and syringe to inject med			
	Needle/syringe discarded safely			
	Saline from same drip shared between patients			
5	Prevention of Urinary Tract Infection	YES	NO	
	Date and time of insertion of urinary catheter noted			
	Is urinary catheter bag touching floor			
6	Emptying of urinary bag (direct observation)	YES	NO	
	Who performs emptying usually:			
	Hand hygiene before opening tap			
	Jug single patient used			
	Jug disinfected after each use			
	Catheter bag draining in garbage can			
	Where is the urine emptied:			

7	Sampling of urine: (Ask to demonstrate)	YES	NO	
	Urine collected from bag			
	Tubing disconnected to collect urine			
	Urine aspirated with sterile needle/syringe			
8	Implementation of Infection Control Precautions	YES	NO	
	What is ratio of isolation rooms to hospital beds: 1: __			
	Are patients with MDRO on contact precautions			
	Are TB patients on airborne precautions(N95 available)			
	Is TB patient transported wearing surgical mask			
	Does hospital have a Needle Stick Injury Policy			
	Is there a needle stick injury record being kept, with details of PEP and other follow-up procedures?			
9	Cleaning of the Ward and Attached Rooms	YES	NO	
	Written schedule is displayed in local language			
	Schedules are followed by the cleaning staff			
	Spills are appropriately and promptly handled by the staff			
	Formaldehyde is strictly prohibited in patient areas			
	Floor Clean			
	Blood stains not seen			
	Mop disinfected by bleach prior to use			
	Which Cleaning and Disinfectant agent used:			
	Patient furniture clean			
	Damp dusting			
	Linen clean			
10	Waste Collection	YES	NO	
	Waste segregated into infectious and non infectious?			
	Sharp containers available			
	Sharps container appropriate			

	Plastic waste is collected separately			
	Plastic waste is decontaminated at point of use			
	Pathologic waste is collected in the red bin			
	Waste collection is understood as a hazardous exercise and personnel use PPE			
	Hand decontamination and PPE cleaning is observed after collection			
	Red and green bags are tied when 3/4 th full			
	Collection of bags is prompt and on schedule			
	Nurses and paramedical staff observe their duties related to waste collection			
	Containers are decontaminated daily			
	Containers are not left on the floor			
	Incidents related to sharps or any injuries during waste collection are reported			
11	Patients are educated on post partum issues that could potentially cause infections			
12	Other Infection Control Measures	YES	NO	
	Clinical waste containers close to patient area			
	Oxygen masks single patient use			
	Nebulizer single patient use			
	Oxygen humidifier water sterile and changed daily			
	Humidifier containers disinfected between patients			
	Ambu bag disinfected			
	Alcohol swab freshly prepared daily			
	Equipment disinfected between patients			
	Oral thermometer single patient use			