Infection Control Management Project
Volume 6: Infection Control in Nursery/NICU

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

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Adapted by AAA team from:

9. Saint Elizabeth Regional Medical Centre 555 South 70th Street, Lincoln, NE 68510. Infection Control in the NICU –Recommended Standards adapted from “Guidelines for Perinatal Care, 4th Edition by the American Academy of Paediatrics and the American College of Obstetricians and Gynaecologists”
11. WHO Poster, How to Handwash & How to Hand rub, October 2006
Infection Control in NICU

YOU MUST:

A. Practice Standard and Transmission Based Precautions

1. Understand and follow Priorities for Infection Control and Care at the NICU.
2. Follow Daily Routines appropriately, including surgery required at the NICU, and Disease Surveillance.
3. Consider All Patients as Potentially Infectious.
4. Treat All Patients with the Same Basic Level of Standard Precautions.
5. Practice Hand Hygiene between patients and tasks to prevent cross contamination from person to person or contaminated object to person.
6. Have personal protective equipment available (aprons, caps, eyewear, gloves, close-toed shoes) and use it as needed.
7. Observe proper Dress Requirements, including scrubs and gowning.
8. Follow Transmission-based precautions when clinically indicated.
9. Observe Special Paediatric Considerations for Additional Transmission-Based Precautions.
10. Strictly follow feeding guidelines for breast and formula milk.
B. Follow Safe Practices

1. Observe Peri-natal Precautions.

2. Use strict aseptic techniques for all clinical procedures.

3. Strictly observe injection safety guidelines and prevent needle stick and other sharps injuries by following safe work practices.


5. Safely dispose off infectious waste materials to protect those who handle them and prevent injury or spread of infection to the community.

6. Be immunized against Hepatitis B and have adequate anti-HBV antibody titres.

7. Healthcare workers should not be part of the Intensive Care team as they may have a communicable disease or are maybe not immunized against HBV, rubella, measles and chicken pox.

8. Teach patients post delivery and post surgical care of their newborns to prevent any potential infections.
C. Maintain a Clean and Safe Environment

1. **Strictly** implement traffic control/visitation policy.

2. Ensure **infrastructure requirements** for the NICU.

3. Perform **environmental cleaning** twice daily, including damp dusting.

4. Ensure **appropriate use of chemicals** including antiseptics and disinfectants

5. Ensure **proper cleaning and disinfection** of patient care equipment.

6. Properly maintain clean and soiled neonatal **linen**.

7. Correctly Handle spills of infectious material.

8. Protect mattresses and pillow cases with plastic, waterproof covers and these should be wiped with neutral detergent between neonates.

9. Avoid sharing of linen and blankets between neonates.

10. Have separate nebulizers, oxygen mask for each neonate.

11. Disinfect humidifiers, attached to flow meters, **before** use.

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

13. Do not place patient files on the bed.
A. Practice Standard and Transmission Based Precautions

A1. Understand and follow priorities for infection control and care at the NICU

Many NICU patients are at high risk for infection because of their illnesses, immature immune systems, and exposure to invasive procedures and devices.

Recent studies show that more than 50% blood stream infections can be controlled, if the following aspects are given serious consideration:

- Staff education
- Surgical scrubbing/hand washing
- Attire of the NICU staff
- Visitor control
- Catheter handling
- Environmental cleaning
- Clinical waste management
- Disinfection practices
- Infection surveillance

Counselling and education of parents is a must in care and feeding, as well as obtaining parental consent for management. Due to an immature immune system, neonates and especially preterm newborns are highly susceptible to infections.

A2. Follow Daily Routines Appropriately, including surgical procedures required at the NICU, and Disease Surveillance

- Personnel must ensure scrubbing and gowning as appropriate.
- Nursery or other staff who have worked part of a shift in another area of the hospital are not to enter the patient care area, unless they change into a clean uniform or wear a clean cover gown and perform a three-minute scrub.
- Cord care must be done with sterile water.
- A bath is given every third day using a mild soap. The face, bottom, and hair are washed daily.
• **Strict asepsis** must be maintained during all invasive procedures.

**Surgical procedures within the NICU**

Surgical procedures are not the norm in NICU, but may be needed. Further procedures such as Central Venous Cannulation/Line requires full preparation as for a surgical procedure. Maintenance of Central Lines is also done as for an open wound, with other special considerations as well.

The following are general parameters for such procedures in the NICU.

• Wear OT clothing and PPE.
• Scrub and prepare as for a surgical procedure.
• Allow only concerned NICU personnel.
• Do not allow any Visitors in the NICU, from the time of set up until completion of wound dressing.
• Minimize traffic of the concerned personnel. E.g. all supplies needed should be collected and brought once in a trolley.
• Personnel should not go in and out of the NICU once inside.
• Take informed consent notifying the increased risk of infection in these circumstances, and the need for such an emergency procedure.

**Disease precautions: antibiotic policy, surveillance and screening**

• Institute an **Antibiotic Use Policy** for rotation and rationalizing use of antibiotics.
• Monitor the use of antibiotics as part of the policy and surveillance strategy.
• Surveillance cultures are performed by the hospital microbiologist in assistance with the head of NICU department to control nosocomial infections, deciding rotations for antibiotics and control of resistant strains of microorganisms. One culture is taken from the nares or groin, and original site of infection, if still available.
• Perform screening culture of MRSA and/or VRE.
• Isolate MRSA and VRE patients.
• Screening may also include **health care providers** for various nosocomial infections.
• **Careers** are also to be identified, isolated and managed.
• Investigate outbreaks especially MRSA, VRE as a regular feature.
A3 and A4. 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:

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

A5. Practice Hand Hygiene between handling neonates and different tasks

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.

- **Wash hands** with soap and water when visibly soiled, otherwise use **hand rub**.
- Hand hygiene is required for all persons entering the department, who will have contact with infants, or equipment.
- The initial handwash for caregivers should be done with an antimicrobial soap for 3 minutes.
- Between each infant, perform a 60 second handwash with soap and water, or an alcohol handrub.
- Infants should never come into contact with any unwashed portion of the health care worker’s skin.
- Before initial contact with the baby in the NICU, family members should perform a thorough handwash.
- Alcohol-based hand rubs should be available in each room.
Perform hand hygiene 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 of any kind with a client.
- Removing gloves
Method of Handwashing

Wash hands when visibly soiled! Otherwise, use hand rub! If hand rub is not available, then do wash hands, as mentioned before.

Duration of procedure: Allow at least 60 seconds every time you wash hands

1. Wet hands with water
2. Illustration for bar soap to be added here
3. Rub hands palm to palm
4. Right palm over left dorsum (back of hand) using fingers of the other hand and repeating on the other side
5. Palm to palm using both hands’ fingers between each other
6. Hook/hold backs of fingers with opposing palms and rub against each other
7. Rub left thumb on right palm in a circular manner, and repeat on the other side
8. Rub in a circular manner, backwards and forwards with fingers tightly held together of right hand on the left palm and repeat on the other side
9. Rinse hands properly with water; and air dry them
Perform Antiseptic Hand Rub before touching each patient. Using an antiseptic hand rub is more effective in killing microorganisms present on the skin from before, or that have been acquired from other patients or the environment than handwashing with antimicrobial agents or plain soap. Further, 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: allow at least 60 seconds.

Apply a handful (2-3 ml) of alcohol hand rub in a cupped hand and cover all surfaces
Rub hands palm to palm
Right palm over left dorsum (back of hand) using fingers of the other hand and repeating on the other side
Palm to palm using both hands’ fingers between each other
Hook/hold backs of fingers with opposing palms and rub against each other,
Rub left thumb on right palm in a circular manner, and repeat on the other side
Rub in a circular manner, backwards and forwards with fingers tightly held together of right hand on the left palm and repeat on the other side
Allow your hands to air dry if needed,
Your hands are now 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. Allow at least 15-30 seconds.

- **DO NOT USE HAND RUB** in case where hands are visibly soiled, or grossly contaminated with dirt or organic material. They must be washed with soap and water.

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

**Protecting hands from drying effects of handrub**

A hand cream or any vegetable oil can be applied to protect skin from the drying effects of using handrub. Rarely, handrubs can cause allergies or irritation, in which case, try a different product, or use plain soaps.
A6. Have Personal Protective Equipment (PPE) available and use it as needed

Personal Protective Equipment means all protective barriers that are essential for protecting patients/clients from micro-organisms, and all health care staff.

- PPE should be available for use at ALL times by ALL NICU Staff. This includes, but is not limited to gloves, masks, eyewear (face shields, goggles and glasses), caps, gowns, aprons and other items.
- PPE is must for use by ALL staff (doctors, paramedics and other staff) for any situation where they may have contact with the neonate. The staff must be properly trained in appropriate use of PPE.

Principles for the use of PPE

The following principles guide the use of personal protective equipment:

- Do NOT share personal protective equipment.
- Chose PPE according to the risk of exposure.
- Change PPE completely, as needed and thoroughly wash hands each time you leave a patient to attend to another patient or another duty. Discard used PPE in appropriate disposal bags.

Gloves

Gloves protect hands of health care workers from infectious materials. They also protect patients from microorganisms on health care workers' hands.

- Wear clean non-sterile gloves when touching blood, body fluids, secretions, excretions or mucous membranes.
- Change gloves between tasks/procedures on the same patient to prevent cross-contamination between different body sites. Hand hygiene is essential between such tasks.
- Remove gloves immediately after use, and use new gloves before attending to another patient.
- Perform hand hygiene immediately after removing gloves. Use plain soap, antimicrobial agent, or antiseptic hand rub.
- Elbow length gloves should be used wherever more quantity of body fluid is expected, e.g. during deliveries and C-Sections.
- Disposable gloves should not be reused, but should be immediately disposed.

Use of gloves is an extremely important practice for health worker safety, and preventing cross infection amongst patients. Use new gloves for each patient.
**Masks**

Masks are worn to contain moisture droplets expelled when health care workers and surgical staff speak, cough, or sneeze. They also prevent accidental splashes of blood or other contaminated body fluids from entering the health care worker's nose or mouth.

- Use masks that are large enough to cover the nose, lower face, jaw, and facial hair.
- Use masks that are made of fluid-resistant materials, or they would not be effective in serving both purposes.
- Wear surgical masks rather than cotton material or gauze masks.
- Do not reuse disposable masks.
- Ensure use of masks during “suction” procedures.

**Eyewear**

Eyewear is extremely important as it protects health care workers from accidental splashes of blood or other body fluids by covering the eyes. Many infections including Hepatitis B virus can be acquired through this route. Eyewear includes clear face visors, plastic goggles, safety glasses, etc. Prescription glasses or glasses with plain lenses also are acceptable, if they are large enough to offer proper coverage.

- Put on eyewear during any task in which an splashes into the face can occur, or is likely (e.g., surgical procedures and during cleaning of instruments).
- Routinely decontaminate eyewear. Different eyewear may require different cleaning methods. For special eyewear such as face visors and goggles, follow the instructions from the company, since use of chemicals may damage it permanently.
- Put on eyewear in routine for all minor and major surgical procedures.

**Gowns and aprons**

Clean, non-sterile gowns should be worn in routine in the NIC. Surgical gowns made of fluid-resistant materials are important in keeping blood and other body fluid, away from health care workers, particularly surgical procedures. Lightweight cotton gowns offer little protection.

- Use gowns made of impermeable material such as plastic or rexin.
- If using a cotton gown, wear a plastic apron on top of the gown to protect exposure to blood, body fluids, secretions and excretions.
- If a large spill occurs, the best thing to do is to take a bath by showering immediately, or as soon as possible, after completing the procedure.
Caps
Caps cover the hair and scalp so that hair and skin flakes are not shed, and to protect the worker from body fluid splashes and sprays.

- Use caps that are large enough to cover all hair.

Footwear
Footwear is worn to protect feet from injury by sharps or fluids.

- Keep NICU shoes/slippers entirely separate for use by concerned staff and visitors only.
- Clean NICU shoes/slippers, and keep them free of contamination from blood or other body fluids.
- Wash and decontaminate ALL NICU shoes/slippers with 0.5% Chlorine solution in routine, at least once daily, or as needed.
- Do NOT wear NICU shoes/slippers outside the theatre.
- Clean, decontaminate and thoroughly dry any shoe/slipper taken out of the NICU. Do NOT allow the shoes/slippers inside the NICU again, unless it is thoroughly cleaned, decontaminated and dried.

Staff and Visitors
- All visitors must wear caps, NICU shoes, gowns and gloves before being allowed to enter the NICU.
• It is absolutely imperative for those with patient contact to wear proper gowns.

**A7. Observe proper Dress Requirements, including scrubs and gowning.**

**General Dress Code and other essentials:**

- Do not wear ANY JEWELLERY (especially hand and wrist). It is not allowed to be worn by the entire NICU team as a matter of principle.
- Staff assigned to the care of babies must wear a clean scrub suit provided by the NICU for the shift.
- Tie back longer hair (shoulder length or more).
- Cover beard appropriately with appropriate mask. Special beard masks have been developed for the purpose in Pakistan.
- Use long-sleeved cover gowns if working with babies with drainage or infectious disease process, or whenever soiling may be likely.
- Gowns are to be worn ONCE, and then sent for disinfection, cleaning and washing.
- Dress codes should be established for regular and part-time personnel who enter the neonatal unit.
- All personnel who have direct contact with the sterile field during surgical and invasive procedures in the neonatal unit, must wear sterile long-sleeved gowns.
- Gloves are to be worn when handling the neonate until blood and amniotic fluid have been removed from the skin.
- When a neonate is held outside the bassinet by nursing or other NICU personnel, a gown should be worn over the clothing and either discarded after use or maintained for use exclusively in the care of that neonate.
- If one gown is used for each neonate, the gowns should be changed regularly.
- Caps, masks and sterile gloves must be used during surgical and invasive procedures. Refer to section on surgical procedures in the NICU.

**Surgical Scrub**

The surgical scrub is an everyday practice, and is an essential element of aseptic technique. Whilst it is not possible to sterilize your hands, the surgical scrub serves to minimize the number of pathogens, thus reducing the potential for cross infection in the event of a glove puncture.

- **All jewellery must be removed.**
- All staff should be in suitable surgical attire, with sleeves above the elbow (rolled if necessary).
- Cover hair appropriately.
• Keep fingernails short, and free from nail polish, or artificial nails.
• Nails must be cleaned if needed, by using a disposable pick under running water.
• Wash hands and arms with anti-microbial solution under running water immediately before beginning the surgical scrub.
• Wet hands and arms before applying scrub solution.
• The first wash should target the hands and arms to the elbows, utilising a systematic method to cover all areas.

• Follow steps for handwashing, as described above.
• Do not use scrubbing brush as it can lead to skin damage, and an increase in skin shedding.
• Subsequent washes should focus on two-thirds of the forearms to avoid compromising the cleanliness of the hands.
• Rinse hands thoroughly from fingertip to elbow, allowing excess water to drain from the elbows into the sink.
• Avoid splashing surgical clothing – if this becomes excessively wet it can compromise the protection afforded by the gown.
Drying

- Hands must be dried thoroughly, as wet surfaces transfer microorganisms more effectively than dry.
- The skin should be blotted dry with towels, as rubbing the skin dry will disturb skin cells.
- Adhere to the principle of working from the fingertips to the elbows and using one towel per hand.
- Dry hands, first by placing the opposite hand behind the towel and blotting the skin, then by using a corkscrew movement to dry from hand to elbow. The towel must not be returned to the hand once the arm has been dried but must be discarded immediately.
- Repeat the process for the other hand.
Gowning

- Grasp the gown firmly and bring it away from the table. It has been folded so that the outside faces away.
- Holding the gown at the shoulders, allow it to unfold gently.
- Place hands inside the armholes and guide each arm through the sleeves by rising and spreading the arms. Do not allow hands to slide outside cuff of gown.
- The staff assists by pulling the gown over the shoulders and tying it.

Gloving (Closed Technique)

- Left hand (within the gown) lifts the right glove by its cuff.
- The fingers of the glove face towards you.
• Working through the gown sleeve, gasp the cuff of the glove and bring it over the open cuff of the sleeve.

• Unroll the glove cuff so that it covers the sleeve cuff.

• Proceed with the opposite hand, using the same technique.
• When both gloves are on, pull glove cuffs over gown sleeves and adjust gloves for comfort.

• Hold both hands higher than elbows and away from surgical attire prior to gowning.
A8. Follow Transmission-based Precautions

Transmission-based precautions are designed for patients documented or suspected to be infected or colonized with pathogens that require additional precautions, (beyond the standard precautions) necessary to interrupt transmission.

- The precautions may be combined for diseases that have multiple routes of transmission. Whether singly or in combination, they are **always to be used in addition to standard precautions**.
- These precautions apply to:
  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. Once patients with these diseases are diagnosed, quickly move them in single rooms designated for such patients.

**Droplet Precautions**

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. Diseases, which are transmitted by this route, include pneumonias, pertussis, diphtheria, influenza type B, mumps, and meningitis. Once patients with these diseases are diagnosed, quickly move them in single rooms designated for such patients.

**Contact Precautions**

Diseases which are transmitted by this route include colonization or infection with multiple antibiotic resistant organisms, enteric infections and skin infections. Once patients with these diseases are diagnosed, quickly move them in single rooms designated for such patients.
A9. Observe Special Paediatric Considerations for Additional Transmission-Based Precautions

Paediatric care necessitates modification of these guidelines, particularly concerning:
- Use of gloves for routine diaper changing
- Private rooms and cohorting
- Common-use areas such as playrooms and schoolrooms.

Gloving for Diaper Changing
- Routine use of gloves for diaper changing in hospitalized children could minimize
  the potential transmission of colonizing microbes (e.g., cytomegalovirus,
  Clostridium difficile, and Citrobacter freundii) to another patient who might
  become infected.
- Gloves must be discarded before handling another baby.
- **There are no exceptions to this rule for gloving at the NICU.**

Isolation Rooms
- Isolation rooms adequately designed to care for airborne infection should ideally
  be available in any hospital with an NICU. In most cases, this is situated within
  the NICU; but, in some circumstances, utilization of an isolation room elsewhere
  in the hospital would be suitable.
- An area for handwashing, gowning, and storage of clean and soiled materials
  should be provided near the entrance to the room.
- Isolation rooms should have a minimum of 13.94 square meters (150 square
  feet) of clear space, excluding the entry work area. Single and multi-bedded
  configurations are appropriate based on use.
- Ventilation systems for isolation room(s) should be engineered to have negative
  air pressure with air 100% exhausted to the outside. Air exhaust to outside the
  building do not need to be filtered but the exhaust vent needs to be away from
  air-intake vents, persons or animals.
- A hands-free two-way emergency communication system is required within the
  isolation room to connect to the outside.
- Remote physiologic monitoring of an isolated infant should be considered.
- Isolation rooms should have observation windows with blinds for privacy. Choice
  and placement of blinds, windows, and other structural items should allow for
  ease of operation and cleaning.

Common Use Areas (Hospital Schoolrooms, Playrooms, Etc)
- Any child being treated with isolation precautions should be excluded from these
  general use areas.
Transmission-Based Precautions for specific conditions

Airborne Precautions for known or suspected cases of:
- Measles
- Varicella (including disseminated zoster)
- Tuberculosis

Droplet Precautions for known or suspected cases of:
- Invasive *Haemophilus influenzae* type b disease, including meningitis, pneumonia, epiglottitis, and sepsis
- Invasive *Neisseria meningitidis* disease, including meningitis, pneumonia, and sepsis
- Other serious bacterial respiratory infections spread by droplet transmission, including:
  - Diphtheria (pharyngeal)
  - Mycoplasma pneumonia
  - Pertussis
  - Pneumonic plague
  - Streptococcal pharyngitis, pneumonia, or scarlet fever in infants and young children
- Serious viral infections spread by droplet transmission, including those caused by:
  - Adenovirus
  - Influenza
  - Mumps
  - Parvovirus B19
  - Rubella

Contact Precautions for known or suspected cases of:
- Serious illnesses easily transmitted by direct patient contact or by contact with items in the patient’s environment.
  
Include:
- Gastrointestinal, respiratory, skin, or wound infections or colonization with multidrug-resistant bacteria. These are to be judged by the infection control program, based on current state, regional, or national recommendations, to be of special clinical and epidemiologic significance.
• Enteric infections with a low infectious dose or prolonged environmental survival, including those caused by:
  o Clostridium difficile
  o For diapered or incontinent patients: enterohemorrhagic Escherichia coli 0157:H7, Shigella, hepatitis A, or rotavirus
• Respiratory syncytial virus, parainfluenza virus, or enteroviral infections in infants and young children
• Skin infections that are highly contagious or that may occur on dry skin, including:
  o Diphtheria (cutaneous)
  o Herpes simplex virus (neonatal or mucocutaneous)
  o Impetigo
  o Major (noncontained) abscesses, cellulitis, or decubiti
  o Pediculosis
  o Scabies
  o Staphylococcal furunculosis in infants and young children
  o Zoster (disseminated or in the immunocompromised host)
• Viral/hemorrhagic conjunctivitis
• Viral hemorrhagic infections (Ebola, Lassa, or Marburg)
## Clinical Syndromes or Conditions Warranting Additional Empiric Precautions to Prevent Transmission of Epidemiologically Important Pathogens Pending Confirmation of Diagnosis

<table>
<thead>
<tr>
<th>Clinical Syndrome or Condition</th>
<th>Potential Pathogens</th>
<th>Empiric Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute diarrhoea with a likely infectious cause in an incontinent or diapered patient</td>
<td>Enteric pathogens</td>
<td>Contact</td>
</tr>
<tr>
<td>Diarrhoea in an adult with a history of recent antibiotic use</td>
<td><em>Clostridium difficile</em></td>
<td>Contact</td>
</tr>
<tr>
<td>Meningitis</td>
<td><em>Neisseria meningitides</em></td>
<td>Droplet</td>
</tr>
<tr>
<td>Rash or exanthema, generalized, aetiology unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petechial/ecchymotic with fever</td>
<td><em>Neisseria meningitides</em></td>
<td>Droplet</td>
</tr>
<tr>
<td>Petechial/ecchymotic with fever</td>
<td><em>Neisseria meningitides</em></td>
<td>Droplet</td>
</tr>
<tr>
<td>Vesicular</td>
<td>Varicella</td>
<td>Airborne and contact</td>
</tr>
<tr>
<td>Maculopapular with coryza and fever</td>
<td>Rubeola (measles)</td>
<td>Airborne</td>
</tr>
<tr>
<td>Respiratory infections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cough/fever/upper lobe pulmonary infiltrate in an HIV-negative patient or a patient at low risk for HIV infection</td>
<td><em>Mycobacterium tuberculosis</em></td>
<td>Airborne</td>
</tr>
<tr>
<td>Cough/fever/pulmonary infiltrate in any lung location in an HIV-infected patient or a patient at high risk for HIV infection</td>
<td><em>Mycobacterium tuberculosis</em></td>
<td>Airborne</td>
</tr>
<tr>
<td>Paroxysmal or severe persistent cough during periods of pertussis activity</td>
<td><em>Bordetella pertussis</em></td>
<td>Droplet</td>
</tr>
<tr>
<td>Respiratory infections, particularly bronchiolitis and croup, in infants and young children</td>
<td>Respiratory syncytial or parainfluenza virus</td>
<td>Contact</td>
</tr>
<tr>
<td>Risk of multidrug-resistant microorganisms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of infection or colonization with multidrug-resistant organisms</td>
<td>Resistant bacteria</td>
<td>Contact</td>
</tr>
<tr>
<td>Skin, wound, or urinary tract infection in a patient with a recent hospital or nursing home stay in a facility where multidrug-resistant organisms are prevalent</td>
<td>Resistant bacteria</td>
<td>Contact</td>
</tr>
<tr>
<td>Skin or wound infection</td>
<td><em>Staphylococcus aureus</em>, group A streptococcus</td>
<td>Contact</td>
</tr>
</tbody>
</table>

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1. Infection control professionals are encouraged to modify or adapt this table according to local conditions. To ensure that appropriate empiric precautions are implemented always, hospitals must have systems in place to evaluate patients routinely according to these criteria as part of their preadmission and admission care.
2. Patients with the syndromes or conditions listed herein may present with atypical signs or symptoms (e.g., neonates and adults with pertussis may not have paroxysmal or severe cough). The clinician’s index of suspicion should be guided by the prevalence of specific conditions in the community, as well as clinical judgment.
3. The organisms listed are not intended to represent the complete, or even most likely, diagnoses, but rather possible etiologic agents that require additional precautions beyond standard precautions until they can be ruled out.
4. These pathogens include enterohemorrhagic *Escherichia coli* 0157:H7, *Shigella*, hepatitis A, and rotavirus.
5. Resistant bacteria judged by the infection control program, based on current state, regional, or national recommendations, to be of special clinical or epidemiological significance.
## Recommendations for Transmission-Based Precautions for Hospitalized Patients

<table>
<thead>
<tr>
<th>Category of Precautions</th>
<th>Hand Washing for Patient Contact</th>
<th>Single Room</th>
<th>Masks</th>
<th>Gowns</th>
<th>Gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Airborne</strong></td>
<td>Yes</td>
<td>Yes, with negative-pressure ventilation</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Droplet</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, for those close to patient</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Contact</strong></td>
<td>Yes</td>
<td>Yes*</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Preferred but not required for crib-confined patients. Cohorting of children infected with the same pathogen is acceptable.
A10. Strictly follow feeding guidelines for breast and formula milk

Breast feeding

- Breast feeding is to be actively encouraged, and ways and means have to be worked out for providing breast milk to the neonate.
- Mothers have to be educated on breast and nipple care, as well as hand hygiene.

Formula Milk

- Mothers will be instructed to cleanse hands before receiving baby for formula feeding.
- Formula products should be selected based on nutritional needs; alternatives to powdered forms should be chosen when possible.
- Sterile water is used for reconstituting powdered forms.
- Trained personnel prepare powdered formula under aseptic technique in the designated Nutrition Room.
- Manufacturer’s instructions are followed; product should be refrigerated immediately (35-50° F) and discarded if not used within 24 hours after preparation.
- The administration or "hang time" for continuous enteral feeding should not exceed 4 hours.
B. Follow Safe Practices

B1. Observe Peri-natal Precautions

During birth, observe the following precautions:

- **Receive the baby onto a warm, clean and dry towel/cloth and place on mother’s chest:** The baby should be delivered onto a warm and CLEAN towel/cloth and kept on mother’s chest. If this is not possible, the baby should be kept in a clean, warm, safe place close to the mother.

- **Clamp and cut the umbilical cord with sterile instruments,** thoroughly decontaminated by sterilization (sterile scissor or blade). This is of utmost importance for the prevention of infections. Clean the cord stump and keep it dry. Topical application of antiseptics is usually not necessary unless the baby is likely to live in a highly contaminated area.

- **Immediately dry the baby:** Immediately after delivery, the baby should be dried with CLEAN warm towels or cloths, while being placed on the mother’s abdomen or in her arms. Blood or meconium on baby’s skin should be wiped away; however, the white greasy substance covering the baby’s body (vernix) should not be wiped off. This vernix helps to protect against infection.

- **Ensure that the airway is clear:** removing mucus and other material from the mouth, nose and throat with a sterile suction pump.

- **Encourage mother to initiate exclusive breastfeeding:** The immune system of the newborn is limited at birth. Mother’s milk has large amounts of secretory IgA antibodies, which protects neonate efficiently against several infections, including neonatal septicaemia. Therefore, breastfeeding should be initiated within half an hour of birth in all babies. Babies can be breast-fed as soon as the airway is cleared and they are breathing normally.

- **Wipe both the eyes with sterile gauze.** Clean the eyes using sterile gauze/cotton. Use separate gauze for each eye. Wipe from the medial side (inner canthus) to the lateral site (outer canthus).

- **Use a clean cloth as a diaper.**

**Educate mother on signs of infection**

This will help in early detection and treatment, which are:

- Poor feeding
- Breathing difficulty
- Listlessness
- Decreased or elevated temperature
- Unusual skin rash or change in skin colour
- Persistent crying
• Unusual irritability

**B2. 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, 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.

**Preventing Catheter-related sepsis**

• Give meticulous attention to aseptic insertion and maintenance of the cannula and to aseptic techniques of fluid administration.

• Mix all parenteral nutrition fluids in the pharmacy, under a laminar flow hood.

• If bottles of lipid emulsions are kept in the neonatal unit refrigerator, care should be taken to prevent contamination, as they are susceptible to contamination with a wide variety of bacteria and fungi that can proliferate to high concentrations within hours. Open bottles must be discarded no later than 24 hours after the seal has been broken.

• Change intravenous tubing, stopcocks, flush syringes on a regular basis and no less frequently than every 72 hours.

• Replace tubing used to administer blood, blood products, or lipid emulsions within 24 hours of initiating the infusion.

**Procedure for Insertion Peripheral IV Lines**

• Collect all necessary equipment.

• Practice Hand Hygiene.

• Place a clean sheet under the arm.

• Select an appropriate site.

• Disinfect intravascular insertion skin site with alcohol or povidon-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, povidon-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.

• Safely discard sharps.

• Practice hand hygiene after completion of the procedure.

• Change IV cannula after 72 hours.

• Change drip set after 72 hours.

**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.
• Secure the catheter for movement in and out of bed is also important.
• Educate staff on catheter care and bag emptying. Also educate on signs of infection and trauma caused by the catheter.

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 to a sterile container.
B3. Strictly Observe Injection Safety and Prevent Needlestick and Other Sharps Injuries

Any item that may cause puncture or cuts is defined as a “sharp.” These comprise of needles, syringes, scalpels, blades, glass. Be especially careful to prevent injuries when using sharps.

**Important Guidelines**

- Use needle and syringe ONLY ONCE.
- Minimize handling.
- 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.
- **Carefully destroy needles and syringes**, prior to disposal to prevent by using needle cutters/destroyers. This is important for preventing reuse and repackaging of used syringes.
- Dispose used and mutilated disposable syringes and needles, scalpel blades and other sharp items in a **puncture-resistant container with a closed lid**.

**Making and using puncture-resistant sharps containers**

Puncture-resistant sharp containers can be made from a cardboard box, used tin box, or hard plastic bottles that can be properly closed.

- Make only a small opening in the box for disposing sharps.
- Containers should be closed and immediately replaced when three-quarters (¾) full.
- Place sharp containers in ALL patient care and laboratory areas where they are easily accessible to health workers, e.g. in dressing/injection rooms, vaccination rooms, examination rooms, labour rooms, wards and laboratories.
B4. 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 HBeAg 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 β-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.

B5. Safely dispose of 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
- An adequately sized puncture resistant sharp container (yellow if possible) should be available at the nursing station, or as appropriate between the NICU beds.
Counselling of staff and parents as to the purpose of these buckets and containers is essential to run the system of segregation effectively. Without their cooperation, this simple system will not succeed.

**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 colour-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 emergency room 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 colour 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 colour but colour coded bags / liners should be of proper colour. 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.
B6. Be immunized against Hepatitis B Infection

Testing personnel on entry and immunization

- All healthcare providers (HCPs) should be screened and tested for antibodies to HBsAg at the time of employment.
- All medical students should be screened on their entry into clinical posting.
- Immunize personnel without previous immunization against hepatitis B with the 3 dose vaccination. Follow up 3 months after the completion of the course to test antibody level.
- Those who do not respond should be offered a fourth dose or a further 3 doses, depending on the antibody level.

Previously immunized personnel

- Personnel with titres below 10 mIU/ml should be given a booster dose of HBV vaccination.
- Follow-up by testing antibody 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.

B7. Healthcare workers should not be part of the Intensive Care team they have a communicable disease or not immunized against HBV, rubella, measles and chicken pox.

- Health care workers in NICU should be immune to rubella, measles and chicken pox in addition to hepatitis B immunization.
- Health care worker should not enter the NICU if suffering from symptoms of diarrhoea, upper respiratory infection, cold sores, fever blisters, any lesion on the genitals, irritating vaginal discharge, skin infection or pustular acne.
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.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Work Restriction</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjunctivitis</td>
<td>Restrict from patient contact.</td>
<td>Until discharge ceases.</td>
</tr>
<tr>
<td>Cytomegalovirus</td>
<td>No restriction.</td>
<td></td>
</tr>
<tr>
<td>Diarrhoeal diseases</td>
<td>Restrict from patient contact and food handling.</td>
<td>Until symptoms resolve.</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>Exclude from duty.</td>
<td>Until antimicrobial therapy completed and 2 cultures are negative.</td>
</tr>
<tr>
<td>Enteroviral Infections</td>
<td>Restrict from care of neonates, infants and the immunocompromised.</td>
<td>Until symptoms resolve.</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>Restrict from patient contact and food handling.</td>
<td>Until 7 days after onset of jaundice.</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>Do not perform exposure prone invasive procedures.</td>
<td></td>
</tr>
<tr>
<td>Hepatitis C</td>
<td>Do not perform exposure prone invasive procedures.</td>
<td></td>
</tr>
<tr>
<td>Herpes Simplex</td>
<td>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.</td>
<td>Until lesions heal.</td>
</tr>
<tr>
<td>HIV</td>
<td>Do not perform exposure prone invasive procedures.</td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td>Exclude from duty if active disease.</td>
<td>Until 7 days after the rash appears.</td>
</tr>
<tr>
<td>Post-exposure (susceptible HCP)</td>
<td>Exclude from duty.</td>
<td>From 5th day after first exposure through 21st day.</td>
</tr>
<tr>
<td>Mumps</td>
<td>Exclude from duty if active disease.</td>
<td>Until 9 days after onset of parotitis.</td>
</tr>
<tr>
<td>Post-exposure (susceptible HCP)</td>
<td>Exclude from duty.</td>
<td>From 12th day after first exposure through 26th day after last exposure.</td>
</tr>
<tr>
<td>Pediculosis</td>
<td>Restrict from patient contact.</td>
<td>Until treated and free of adult and immature lice.</td>
</tr>
<tr>
<td>Pertussis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease</td>
<td>Work Restriction</td>
<td>Duration</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Active</td>
<td>Exclude from duty</td>
<td>From beginning of catarrhal stage through 3(^{rd}) week after onset of paroxysms or until 5 days after start of antibiotics</td>
</tr>
<tr>
<td>Post-exposure (asymptomatic HCP)</td>
<td>No restriction but prophylaxis recommended.</td>
<td>Until 5 days after start of effective antibiotic therapy.</td>
</tr>
<tr>
<td>Post-exposure (symptomatic HCP)</td>
<td>Exclude from duty.</td>
<td>From 7(^{th}) day after first exposure through 21(^{st}) day after last exposure.</td>
</tr>
<tr>
<td>Rubella</td>
<td>Exclude from duty.</td>
<td>Until 5 days after rash appears.</td>
</tr>
<tr>
<td>Active</td>
<td>Exclude from duty.</td>
<td>From 7(^{th}) day after first exposure through 21(^{st}) day after last exposure.</td>
</tr>
<tr>
<td>Scabies</td>
<td>Restrict from patient contact.</td>
<td>Until cleared by medical evaluation.</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em> infection</td>
<td>Restrict from patient contact and food handling.</td>
<td>Until healed and dry.</td>
</tr>
<tr>
<td>Active, draining lesions</td>
<td>Restrict from patient contact and food handling.</td>
<td>Until 24 hrs after antibiotic therapy.</td>
</tr>
<tr>
<td>Carrier state</td>
<td>No restriction, unless HCP is epidemiologically linked to transmission of the organism.</td>
<td>Until proven non-infectious with 3 negative sputum AFB smears.</td>
</tr>
<tr>
<td>Active</td>
<td>Exclude from duty.</td>
<td>Until all lesions dry and crusted over.</td>
</tr>
<tr>
<td>PPD convertor</td>
<td>No restriction.</td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td>Exclude from all duty.</td>
<td></td>
</tr>
</tbody>
</table>
### Disease Work Restriction Duration

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

### B8. 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 instructions for mother
- Early ambulation
- Perineal hygiene
- Restrict use of bedpan
- Use of hygienic sanitary towel and discourage use of self made towels

#### Newborn Instruction
- Cord care with alcohol swab
- Clean dress
C. Maintain a Clean and Safe Environment

C1. Strictly implement Traffic Control/visitation policy

Guidelines for visits should be established to maximize opportunities for visiting and to minimize the risks of nosocomial spread of pathogens brought into the unit by these young visitors.

- Educate parents about visitation policies prior to the birth of the infant.
- Allow parents, grandparents, or a designated support person following NICU visiting protocols.

Sibling Visits

- No child with fever or symptoms of an acute illness, including an upper respiratory tract infection, gastroenteritis, or dermatitis, should be allowed to visit.
  - Siblings who recently have been exposed to a known communicable disease and are susceptible should not be allowed to visit. These interviews should be documented in the patient’s record, and approval for each sibling visit should be noted.
  - Children should carefully wash their hands before patient contact.

- Visitors with active infections should be excluded from the area with the following exceptions:
  - Fathers with respiratory symptoms may wear a mask at the delivery but may not visit the baby in NICU. Other visitors with respiratory symptoms are excluded from visiting under any circumstances.
  - Parents and siblings may visit in the NICU with a mask IF the infant is in critical condition.
  - A mother (not father or sibling) with active (non-dried) herpes simplex 1 infection may have contact with the infant. She is to wear a mask and be educated on the importance of hand hygiene before contact with the infant. No facial contact should occur.

C2. Ensure infrastructure requirements for the NICU

Space

- Each infant care space in the Neonatal Intensive Care Unit should ideally contain a minimum of 11.2 square meters (120 square feet), excluding sinks and aisles.
- There shall be an aisle adjacent to each infant care space with a minimum width of 0.9 meters (3 feet).
- Traffic to other services shall not pass through the unit.
Ventilation

- Install HEPA filters as a routine. Mobile HEPA filters cost much less than other NICU equipment, and can be very helpful in maintaining air quality.
- A minimum of 6 air changes per hour is required for the NICU, with a minimum of 2 changes being outside air.
- The ventilation pattern shall inhibit particulate matter from moving freely in the space and intake and exhaust vents shall be situated as to minimize drafts on or near the infant beds.
- Ventilation air delivered to the NICU shall be filtered with at least 90% efficiency.
- Fresh air intake shall be located at least 7.6 meters (25 feet) from exhaust outlets of ventilating systems, combustion equipment stacks, medical/surgical vacuum systems, plumbing vents, or areas that may collect vehicular exhausts or other noxious fumes.

Scrub Areas

- In the NICU, there should be at least 1 hands-free handwashing sink for 4 beds.
- In single bedroom, a hands-free handwashing sink shall be provided within each infant care room.
- Handwashing facilities that can be used by children and people in wheelchairs shall be available in the NICU.
- Sinks for handwashing should not be built into counters used for other purposes.
- Sink location, construction material and related hardware (paper towel, covered trash receptacle, and soap dispensers) should be chosen with durability, ease of operation and noise control in mind.
- Minimum dimensions for a handwashing sink are 61 cm wide X 41 cm front to back X 25 cm deep (24 in. X 16 in. X 10 in.) from the bottom of the sink to the top of its rim; so as to minimize splashing.
- Pictorial handwashing instructions should be provided above all sinks.
- Sinks should be designed so as to control splashing and avoid standing or retained water.
- Sinks should be scrubbed clean daily with a detergent.

Isolation Room(s)

- Isolation rooms adequately designed to care for airborne infection should be available in any hospital with an NICU. In most cases, this is ideally situated within the NICU; but, in some circumstances, utilization of an isolation room elsewhere in the hospital would be suitable.
• An area for handwashing, gowning, and storage of clean and soiled materials shall be provided near the entrance to the room.
• Isolation rooms should have a minimum of 13.94 sq metres (150 square feet) of clear space, excluding the entry work area. Single and multibedded configurations are appropriate based on use.
• Ventilation systems for isolation room(s) shall be engineered to have negative air pressure with air 100% exhausted to the outside. Air exhaust to outside the building do not need to be filtered but the exhaust vent needs to be away from air-intake vents, persons or animals.
• A hands-free two-way emergency communication system is required within the isolation room to connect to the outside.
• Remote physiologic monitoring of an isolated infant should be considered.
• Isolation rooms should have observation windows with blinds for privacy. Choice and placement of blinds, windows, and other structural items should allow for ease of operation and cleaning.

C3. Perform environmental cleaning twice daily, including damp dusting

• Perform environmental cleaning twice daily and this should include damp dusting.
• Dry dusting and cleaning with Brooms is not allowed.
• Only use wet mop with decontaminant detergent solution

Follow Cleaning procedures for the environment and equipment properly

• Floors and routine housekeeping should be done when babies are out to mothers.
• Formalin and Phenolics are NOT to be used to clean any surface which will have direct contact with infants.
• Long-term care infants should be re-placed in clean incubators every 7 days.
• Diaper collection cans are lined with a plastic bag, emptied and cleaned on a regular basis.
• Appropriate Cleaning solutions should be selected:
  o Quaternary cleaner - for floors, walls, countertops, diaper cans, cribs, incubators, scales, and other infant contact equipment.
  o Appropriate cleaners - for plexiglass, stethoscopes, ophthalmoscopes

• The refrigerator should be defrosted weekly and spot checked daily.
Disposables

- Items marked disposable will not be reprocessed for another patient.
- If available use disposable single patient use of nebulizers, oxygen mask, suction catheters.

Refrigerator

- The refrigerators are used only for medication, expressed breast milk, and opened formula.
- The freezer is used for expressed milk. Staff food is not mixed with patient food.

Laryngoscope Blades

The blades should be disinfected using HLD.

Feeding Supplies

Utensils and supplies used for milk are washed by parents with detergent after every use.

General Housekeeping

- Cleaning should be performed in the following order – patient areas, accessory areas and then adjacent halls.
- In the cleaning procedure, dust should not be dispersed into the air.
- Standard types of portable vacuum cleaners should not be used in the NICU because particulate matter and microbial contamination in the room may be disturbed and distributed by the exhaust jet. Vacuum cleaners that discharge outside the patient care area (i.e., central vacuum cleaning systems or portable vacuums) should be used so that only the cleaning wand, floor tool, and high-efficiency, particulate air filtered vacuum hose are brought into the patient care area.
- Once dust has been removed, scrubbing with a mop and a disinfectant/detergent solution should be performed. Mop heads should be machine laundered and thoroughly dried daily.
- Cabinet counters, work surfaces, and similar horizontal areas should be cleaned once a day and between patient use with a disinfectant/detergent and clean cloths; as they may be subject to heavy contamination during routine use.
- Friction cleaning is important to ensure physical removal of dirt and contaminating microorganisms.
- Surfaces that are contaminated by patient specimens or accidental spills should be carefully cleaned and disinfected.
• Walls, windows, storage shelves and similar non-critical surfaces should be scrubbed periodically with a disinfectant/detergent solution as part of the general housekeeping program.

• Sinks should be scrubbed clean at least daily with a detergent.

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

General Principles

• Scrubbing (frictional cleaning) is the best way to physically remove dirt, debris and microorganisms. Be careful in scrubbing, as it may damage surfaces by making it rougher. Do not use hard scrubbing agents and chemicals.

• Cleaning is required prior to any disinfection process because dirt, debris and other materials can decrease the effectiveness of 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.

• Avoid dry sweeping, mopping and dusting 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.

• Check for shelf life of chemicals. Chemicals such as liquid chlorine stored have limited life, and is not effective. Powdered chlorine is better for storage.

• Make and follow written cleaning schedules.

• Perform total cleaning of NICU (all surfaces, walls, ceilings washed) at least once a week.

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.

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.

Wet mopping for floors
AVOID: Dry mopping or sweeping.

Start cleaning with the least soiled area, moving to the most soiled area and from high to low surfaces.

**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 labour and material costs.

*The simple single bucket technique requires changing of solution when dirty. The double bucket technique increases the life of the solution, as the mop is rinsed in water before being dipped in cleaning solution.*
Cleaning 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.

<table>
<thead>
<tr>
<th>Site, Areas, Equipment</th>
<th>Cleaning schedule and procedure</th>
</tr>
</thead>
</table>
| Walls, windows, ceilings and doors, including door handles | • 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 | • 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) | • 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 | • 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 | • Scrub daily or more often as needed.  
• Use SEPARATE mop, cloth, brush and disinfectant cleaning solution.  
• Rinse with water. |
| Toilets and latrines | • Scrub daily or more often as needed.  
• Use SEPARATE mop, cloth, brush and disinfectant cleaning solution. |
| Patient rooms and wards | • 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 |
<table>
<thead>
<tr>
<th><strong>Procedure rooms connected to the emergency room</strong></th>
<th><strong>Examination rooms</strong></th>
</tr>
</thead>
</table>
| • After each procedure and whenever visibly soiled, wipe horizontal surfaces, equipment and furniture with disinfectant cleaning solution.  
• Clean blood or other body fluid spills. | • 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** | **Soiled linen** |
| • Change and clean curtains according to the routine schedule and when visibly soiled. | • Collect soiled linen daily (or more often as needed) in closed, leakproof containers. |
| **Waste** | **Waste containers** |
| • Collect waste from all areas at least daily, or more frequently as needed.  
• Avoid overflowing. | • 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** |  |
| • 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. |
C4. Ensure appropriate use of chemicals including antiseptics and disinfectants

USE CHEMICALS, INCLUDING ANTISEPTICS AND DISINFECTANTS APPROPRIATELY.

- **Antiseptics** are used on skin and mucous membranes (living surfaces).
- **Water based antiseptics** are used on mucosal membranes, while **alcohol based** are for skin.
- **Disinfectants** are meant to be used on instruments and surfaces (inanimate objects).
- **Antiseptics should not be used as disinfectants, and vice versa.**
- Disinfectants should never be used on skin, or on mucous membranes.
- There is a difference between disinfectants and High Level Disinfectants. Use both appropriately.

These products are NOT Disinfectants, and are only antiseptics. Do NOT use for disinfection:

- Acridine derivatives
- Cetrimide (Cetavlon®)
- Chlorhexidine gluconate and cetrimide in various concentration (Savlon®),
- Chlorinated Lime and boric acid (Eusol)
- Chloroxylenol in alcohol (Dettol®)
- Mercury compounds are not in common use now, and should be actively discouraged.

Alcohols and iodophors are disinfectants and NOT high-level disinfectants and should not be used for HLD purposes.

Glutaraldehyde and Formalin/Formaldehyde are extremely dangerous chemicals which are not to be used, and should be replaced with alternates. Also while their use it being phased out, proper usage is also necessary.

Remember:

- **Glutaraldehyde** (common trade name: Cidex) is carcinogenic, causes respiratory and skin irritation, and so it should not be used. Alternates are available, which should be explored for use for specific needs. Glutaraldehyde works best at room temperature, and will NOT WORK IN COLD ENVIRONMENTS (temperatures less than 20C/68F), even with prolonged soaking.
• FORMALDEHYDE IS NOT TO BE USED BECAUSE OF ITS DANGERS. IT SHOULD ALSO NEVER BE MIXED WITH CHLORINE OR CHLORINATED WATER because a dangerous gas (bis-chloromethyle-ether) is produced.

• Decontaminate, clean and dry all instruments and other items to be sterilized.

• Completely submerge items in a clean container filled with the chemical solution and place the lid on the container.

• Remove objects from the solution with sterile forceps; rinse all surfaces three times in sterile water and air dry. Ideally, three separate (sequential) rinse containers should be used.

C5. Ensure proper cleaning & disinfection of patient care equipment

Incubators, Open Care Units & Bassinets

• Remove all detachable parts of the incubators, open care units or bassinets.

• Clean and disinfect all parts meticulously.

• Clean and disinfect incubator fan, following the manufacturer’s instructions to avoid equipment damage.

• Maintain air filter as recommended.

• Replace mattresses when the surface covering is broken. Such a break prevents from effective disinfection or sterilization.

• Portholes and porthole cuffs and sleeves are easily contaminated, often heavily. Replace cuffs on a regular schedule. Clean and disinfect frequently with freshly prepared mild soap or disinfectant solutions.

• Incubators not in use should be thoroughly dried by running the incubator hot without water in the reservoir for 24 hours after disinfection.

• Infants who remain in the nursery for an extended period should be transferred periodically to a different, disinfected unit so that the original unit can be cleaned.

Cleaning Respiratory Equipment

Cleaning is the act of removing visible organic residue (e.g., respiratory secretions) and inorganic salts from patient-care equipment. Proper cleaning is critical in that a hard, nonporous surface cannot be disinfected if it is not properly cleaned first. This includes getting into all small surfaces and lumens of respiratory equipment.

• Circuits of ventilators should be changed every 7 days by the respiratory therapist.
• Water for humidification is supplied by non-refillable containers which are replaced as needed.
• Decontamination should be as per the manufacturer’s guidelines.

Sterile Supplies
• Wrap supplies and trays in plastic protective covers, and store in cabinets or on carts.
• Check supplies for outdates and damaged covers.

Medications
• Multiple-use vials must be discarded after 72 hours, or earlier according to expiration date set by the Pharmacy.

Clean Linen
• Store linen in a closed cabinet or on a covered cart.
• Supply all infants with linen through the hospital laundry.

Trash and Soiled Linen
• Diapers and other heavily soiled disposable items are disposed of in impervious plastic bags.
• Soiled linen is transported to the Soiled Hold and Laundry in an impervious plastic bag.

C6. Properly maintain clean and soiled neonatal linen

Clean Linen
• Procedures for laundering, making up packs and delivering linen to the nursery should be established by the medical, nursing, laundry and administrative staffs of the hospital.
• Each delivery of clean linen should contain sufficient linen for at least one 8-hour shift.
• Linen should be cleaned and transported in covered carts or laundry bags to the nursery areas.
• No new garments or linen should be used for neonates without prior laundering.

Soiled Linen
• An established procedure for the disposal of soiled linen should be strictly followed.
Chutes for the transfer of soiled linen from patient care areas to the laundry are not acceptable unless they are under negative air pressure.

Soiled linen should be discarded into bags that prevent leakage.

Sealed bags of reusable, soiled nursery linens should be taken to the laundry at least twice each day.

Impervious bags of soiled diapers (reusable or disposable) and other linen should be sealed and removed from the nursery at least every 8 hours.

All personnel should be aware that handling dirty diapers with bare hands can result in heavy contamination and transient colonization of the hands with microorganisms that cannot be easily eliminated with hand-washing and can be readily transmitted to the next neonate for whom they provide care.

Precautions in using Washing Agents for Linen

- The chemicals trichlorocarbanilide or sodium salt of pentachlorophenol should not be used in hospital laundering because they may be harmful.

- To avoid the hazards associated with the use of such chemicals or enzymes in the hospital laundry, the physician in charge should be aware of all agents in use and should be informed before any changes are made in laundry chemicals or procedures.

- Caution should be exercised when new laundry or cleaning agents are introduced into the nursery or when procedures are changed.

C7. 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.

C8. 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.

C9. Avoid sharing of linen and blankets between neonates

• 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.

C10. Have separate nebulizers, oxygen mask for each neonate

• If masks and nebulisation 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.
C11. Disinfect humidifiers, attached to flow meters, before use

Clean and disinfect device with 0.5% bleach between patients and fill with distilled water, which must be changed every 24 hours or sooner, if necessary.

C12. 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.

C13. Do not place patient files on the bed

The immediate environment of the patient is heavily contaminated with microorganisms.

- Do NOT place files on the bed of the patient, since they will become contaminated with microorganisms and then spread through the hands of the many healthcare providers.

- Stack files neatly in a file trolley, which can be easily manoeuvred and cleaned, or on a holder behind the patient bed.
# Monitoring Tool for Nursery/NICU

**Date:** __/__/__

<table>
<thead>
<tr>
<th></th>
<th><strong>Hand Hygiene</strong></th>
<th>YES</th>
<th>NO</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Health care provider observed: Designation:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Hand hygiene prior to clinical procedure/examination</td>
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<td></td>
<td>Hand hygiene after clinical procedure/examination</td>
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<tr>
<td></td>
<td>Staff nails short and clean</td>
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<tr>
<td></td>
<td>Handwashing sink available</td>
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<td></td>
<td>• Running water available</td>
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<td></td>
<td>• Soap available</td>
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<tr>
<td></td>
<td>• Hand Drying Method: towel paper air-dry</td>
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<tr>
<td></td>
<td>Hand rub available</td>
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<tr>
<td></td>
<td>• Alcohol rub at point of patient care</td>
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<tr>
<td></td>
<td>• Ratio of rub to patient <strong><strong>:</strong></strong></td>
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<tr>
<td></td>
<td>• Alcohol rub dispenser filled</td>
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<tr>
<td></td>
<td>• Dispenser in working order</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Personal Protective Equipment</strong></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>PPE readily available</td>
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<tr>
<td></td>
<td>Health care provider observed: Designation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wearing gloves when handling blood and body fluids</td>
<td></td>
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<tr>
<td></td>
<td>Gloves removed after task completed</td>
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<tr>
<td></td>
<td>Hand hygiene after removal of gloves</td>
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<tr>
<td></td>
<td>HCP does not go from one patient to another with same gloves</td>
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<tr>
<td></td>
<td>Wearing gowns when splashing/soiling likely to occur</td>
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<td></td>
<td>Gown removed after task completed</td>
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<tr>
<td></td>
<td>HCP does not go from one patient to another with same gown</td>
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<tr>
<td></td>
<td>Goggles/Eye wear worn when indicated</td>
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<tr>
<td><strong>Caps worn when indicated</strong></td>
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<tr>
<td><strong>Wearing N95 mask for TB patients</strong></td>
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<tr>
<td><strong>Paediatric Considerations being Observed</strong></td>
<td></td>
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<tr>
<td>Gloving for diaper change</td>
<td></td>
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<td></td>
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<tr>
<td>Gloves changed for each patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children with infectious disease in private rooms</td>
<td></td>
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</tr>
<tr>
<td>Children with isolation prevention precautions are not allowed in common use areas</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Transmission based Precautions being adhered to for different categories of patients</td>
<td></td>
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<td></td>
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<tr>
<td>Feeding guidelines for breast milk being followed</td>
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<tr>
<td>Feeding guidelines for formula being followed</td>
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<tr>
<td><strong>Perinatal Precautions</strong></td>
<td></td>
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<tr>
<td>Baby received onto a warm, clean and dry towel/cloth and place on mother's chest</td>
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<tr>
<td>Umbilical cord cut and Clamped with sterile instruments</td>
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<tr>
<td>Baby immediately dried</td>
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<tr>
<td>Ensure that the airway is clear</td>
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<tr>
<td>Mother initiates exclusive breastfeeding</td>
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<tr>
<td>Both the eyes with sterile gauze</td>
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<tr>
<td>Clean cloth used as a diaper</td>
<td></td>
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<tr>
<td>Mother educated on signs of infection</td>
<td></td>
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</tr>
</tbody>
</table>

**3 Prevention of Blood Stream Infections**

| Date and time of insertion of Peripheral Venous catheter (PVC) written on tape | YES | NO |
| 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** |  |

| **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** |  |

| **Prevention of Urinary Tract Infection** | YES | NO |
| **Date and time of insertion of urinary catheter noted** |  |
| **Is urinary catheter bag touching floor** |  |

| **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:** |  |

| **Sampling of urine: (Ask to demonstrate)** | YES | NO |
| **Urine collected from bag** |  |
| **Tubing disconnected to collect urine** |  |
| **Urine aspirated with sterile needle/syringe** |  |

<p>| <strong>Implementation of Infection Control Precautions</strong> | YES | NO |
| <strong>What is ratio of isolation rooms to hospital beds:</strong> | 1:__ |</p>
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are patients with MDRO on contact precautions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are TB patients on airborne precautions (N95 available)</td>
<td></td>
<td></td>
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<tr>
<td>Is TB patient transported wearing surgical mask</td>
<td></td>
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<tr>
<td>Does hospital have a Needle Stick Injury Policy</td>
<td></td>
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<tr>
<td>Is there a needle stick injury record being kept, with details of PEP and other follow-up procedures?</td>
<td></td>
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</tr>
<tr>
<td><strong>9  Cleaning of the Ward and Attached Rooms</strong></td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Written schedule is displayed in local language</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedules are followed by the cleaning staff</td>
<td></td>
<td></td>
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<tr>
<td>Spills are appropriately and promptly handled by the staff</td>
<td></td>
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<tr>
<td>Formaldehyde is strictly prohibited in patient areas</td>
<td></td>
<td></td>
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<tr>
<td>Floor Clean</td>
<td></td>
<td></td>
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<tr>
<td>Blood stains not seen</td>
<td></td>
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<tr>
<td>Mop disinfected by bleach prior to use</td>
<td></td>
<td></td>
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<tr>
<td>Which Cleaning and Disinfectant agent used:</td>
<td></td>
<td></td>
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<tr>
<td>Patient furniture clean</td>
<td></td>
<td></td>
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<tr>
<td>Damp dusting</td>
<td></td>
<td></td>
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<tr>
<td>Linen clean</td>
<td></td>
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<tr>
<td><strong>10 Waste Collection</strong></td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Waste segregated into infectious and non infectious?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharp containers available</td>
<td></td>
<td></td>
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<tr>
<td>Sharps container appropriate</td>
<td></td>
<td></td>
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<tr>
<td>Plastic waste is collected separately</td>
<td></td>
<td></td>
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<tr>
<td>Plastic waste is decontaminated at point of use</td>
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<tr>
<td>Pathologic waste is collected in the red bin</td>
<td></td>
<td></td>
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<tr>
<td>Waste collection is understood as a hazardous exercise and personnel use PPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand decontamination and PPE cleaning is observed after collection</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Red and green bags are tied when 3/4th full</strong></td>
<td></td>
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</tr>
<tr>
<td>Collection of bags is prompt and on schedule</td>
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<tr>
<td>Nurses and paramedical staff observe their duties related to waste collection</td>
<td></td>
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<tr>
<td>Containers are decontaminated daily</td>
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<tr>
<td>Containers are not left on the floor</td>
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<tr>
<td>Incidents related to sharps or any injuries during waste collection are reported</td>
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</tr>
</tbody>
</table>

11. Patients are educated on post partum issues that could potentially cause infections

12. **Other Infection Control Measures**

<table>
<thead>
<tr>
<th>Measures</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical waste containers close to patient area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen masks single patient use</td>
<td></td>
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<tr>
<td>Nebulizer single patient use</td>
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<td></td>
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<tr>
<td>Oxygen humidifier water sterile and changed daily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidifier containers disinfected between patients</td>
<td></td>
<td></td>
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<tr>
<td>Ambu bag disinfected</td>
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<tr>
<td>Alcohol swab freshly prepared daily</td>
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<tr>
<td>Equipment disinfected between patients</td>
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<td></td>
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<tr>
<td>Oral thermometer single patient use</td>
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<tr>
<td>Healthcare workers checked for communicable disease and immunization against HBV, rubella, measles and chicken pox.</td>
<td></td>
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<tr>
<td>Traffic control policy implemented</td>
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</tbody>
</table>

**Infrastructure requirements**

<table>
<thead>
<tr>
<th>Requirements</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Spacing of neonates adequate</td>
<td></td>
<td></td>
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<tr>
<td>Ventilation: HEPA installed</td>
<td></td>
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<tr>
<td>HEPA maintenance as per schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrub areas have 1 handwashing sink for every 4 beds</td>
<td></td>
<td></td>
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<tr>
<td>Handwashing sink in each single room</td>
<td></td>
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<tr>
<td><strong>Faucets elbow or foot operated</strong></td>
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<td>-----------------------------------</td>
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<tr>
<td><strong>Pictorials displayed for staff and patients</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Supplies for hand washing available</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sinks not being used for any other purpose such as washing of clothes, diapers, etc</strong></td>
<td></td>
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<tr>
<td><strong>Appropriate Chemical Use</strong></td>
<td></td>
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<tr>
<td>Glutaraldehyde not being used</td>
<td></td>
<td></td>
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<tr>
<td>Formalin not in use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate use of disinfectants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate use of antiseptics</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maintaining Linen</strong></td>
<td></td>
<td></td>
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<tr>
<td>Linen sufficient for 8 hour shift</td>
<td></td>
<td></td>
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<tr>
<td>Linen available for emergency events</td>
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<td></td>
</tr>
<tr>
<td>Soiled linen procedure written and displayed in NICU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soiled linen collection procedure taught and practiced by relevant staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soiled linen not being sorted inside NICU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soiled linen collected and transported in sealed bag/s or containers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separate trolley for soiled and clean linen</td>
<td></td>
<td></td>
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<tr>
<td>Trolleys being used appropriately, not to mix both linen</td>
<td></td>
<td></td>
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<tr>
<td>Appropriate Washing agents selected for linen washing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linen and blankets not shared between patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linen and blankets washed between patients</td>
<td></td>
<td></td>
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</tbody>
</table>