



# GUIDELINES FOR INFECTION PREVENTION AND CONTROL IN THE NEONATAL UNIT



"Together we move South Africa forward"

FIGHTING DISEASE, FIGHTING POVERTY, GIVING HOPE

Document Number	Guideline twenty four
	To provide guidance on appropriate infection
Summary	prevention and control practices within the neonatal
	unit
Application	All healthcare facilities in KwaZulu-Natal
Distribution	Healthcare providers, users and relevant stakeholders
Roview Date	This guideline will be reviewed every
Review Date	three years or as necessary
Author	Dr. N.H. McKerrow, Ms Lesley Liebenberg, Ms Ruth
Aution	Davidge
Date Developed	2012
Effective Date	02/2019
Date of next review	02/2021
Revised By	Ms Ruth Davidge
Guideline development Team	Dr. N.H. McKerrow, Ms Ruth Davidge, Mrs. R. Misra
	and Mrs. K. Ganas
	Guideline for the Management of Infection Prevention
Previous Reference	and Control In KwaZulu-Natal
Approved by	Dr. N. H. McKerrow

Approved

Alexan.

DR. N.H. McKERROW HEAD: PAEDIATRICS AND CHILD HEALTH 12 February 2019 DATE

#### TABLE OF CONTENTS

AC	RONYMS		4
DEI	FINITIONS		4
1.	RATION	ALE	6
2.	AIM		6
3.	GUIDELI	NES/PROCEDURE	6
	8.1 Infr	rastructure:	6
	3.1.1	Physical design of neonatal unit:	6
	3.1.2	Clinical Hand washing basin	6
	3.1.3	Ventilation and Temperature	7
	3.1.4	Staffing norms	7
	3.1.5	Isolation rooms	7
	3.1.6	Modes of Transmission	8
	3.1.7	Lodger/KMC facilities	9
3	3.2 Sta	ndard Infection Prevention and Control Precautions to be observed	9
	3.2.1	Hand hygiene	9
	Five Mo	ments For Hand Hygiene <sup>5</sup>	10
	Figure 1	The Environnent of the Neonatal Intensive Care Unit and Adaptation of Hand Hygie	∩e Moments⁵10
	3.2.2	Personal Protective equipment and attire	11
	3.2.3	Staff attire	11
	3.2.4	Lodger mothers	11
	3.2.5	Babies clothing/blankets	11
	3.2.6	Linen Handling	11
	3.2.7	Environmental hygiene	12
	3.2.8	Waste management	13
	3.2.9	Patient care equipment	13
	3.2.10	Incubators/radiant warmers/bassinets	13
	3.2.11	Respiratory and IV equipment	14
	3.2.12	Resuscitation equipment	14
	3.2.13	Invasive procedures	14

	3.2.14	Patient care	15						
	3.2.15	Bathing:	16						
	3.2.16	Eye care:	16						
	3.2.17	Umbilical cord care:	16						
	3.2.18	Infant feeding	16						
	3.2.20	Visiting	17						
	3.2.21	Health education to mothers	18						
	3.2.22	Outbreak control	18						
	3.2.23	Employee Health	18						
4.	MONITO	RING AND EVALUATION	18						
5.	REFEREN	ICES	18						
6.	ANNEXU	RE: A: Handwash facility specification	23						
Тоо	l 12: Neon	natal IPC Audit	25						
7.	Hand Hy	giene	34						
Neo	onatal Cleaning Checklists								
8.	CONFIRM	AATION OF TRAINING	40						

#### ACRONYMS

CPAP: Continuous positive airway pressure
HAI: Healthcare associated infection
HCRW: Healthcare Risk Waste
HCW: Healthcare Worker
IPC: Infection Prevention and Control
IV: Intravenous
PPE: personal protective equipment
PPM: Parts per million
PRN: Pro re nata. Translated to as needed

#### DEFINITIONS

- Alcohol: intermediate level disinfectant. In the healthcare setting, "alcohol" refers to two watersoluble chemical compounds—ethyl alcohol and isopropyl alcohol. The chemical is rapidly bactericidal and exerts its action by denaturising proteins. <sup>48</sup>
- Antiseptics are chemicals or other technology used to reduce the bioburden on living tissue
- Bioburden. The amount of microbes found on a surface of living or inanimate surfaces
- **Chlorhexidine:** Synthetic compound. Addition of low concentrations (0.5–1%) of chlorhexidine to alcohol-based preparations results in significantly greater residual activity than alcohol alone. <sup>48</sup>
- **Cleaning:** The physical removal of foreign material (eg dust, soil) and organic material (eg blood, secretions, excretions, microorganisms). Cleaning physically removes rather than kills micro-organisms. It is accomplished with water, detergents and mechanical action. Cleaning must be performed before disinfection or sterilization. <sup>49</sup>
- **Cleansing agent/Cleaner**: this is a formulation designed for cleaning purposes. Also referred to as a "detergent". It is used to remove dirt, dust or stains. <sup>48,49</sup>
- **Chlorine Compound:** Disinfectant. Hypochlorite is widely used. Available as liquid (e.g., Sodium hypochlorite), or solid (e.g., calcium hypochlorite). Has broad spectrum antimicrobial activity. <sup>48</sup>
- **Decontamination:** Physical and/or chemical means to render a surface or item safe for handling, use or disposal. In many cases decontamination is at least a two or even three step process, to include cleaning and disinfection and/or sterilisation. This may be via heat or chemical means. <sup>49</sup>
- **Detergent:** this is a formulation designed for cleaning purposes. It is also referred to as a cleansing agent. It is used to remove dirt, dust or stains. Detergents are a sub class of surfactant. Surfactant aids in dissolving material materials such as lipids that do not mix with water. <sup>49</sup>They are composed of a hydrophilic and a lipophilic part and can be divided into four groups: anionic, cationic, amphoteric, and non-ionic. <sup>50</sup>

- Disinfectants are chemicals or other technologies that are used to reduce the bio-burden from inanimate objects. It is an agent that destroys or inhibits replication of some or most microorganisms but not necessarily bacterial spores. This agent is applied only to inanimate objects not to skin <sup>50</sup>
- **Disinfection:** The antimicrobial reduction of the number of variable microorganism on a product or surface to level previously specified as appropriate for its intended handling or use. Different levels of disinfection are traditionally defined, such as high, medium or low, which refers to the spectrum of microbiocidal activity of a given product or process; the exact meaning and usage of these terms may vary from country to country. Other terms, such as pasteurization and antisepsis are forms of disinfection. <sup>48</sup>
- **Hand Hygiene** is the most effective way to reduce infection transmission in healthcare settings. Included in the term hand hygiene is any activity that reduces the level of contamination with micro-organisms, for example alcohol-based handrub and surgical handrub.<sup>49</sup>
- Micro-organism: Small living forms including bacteria, viruses, fungi and yeasts. <sup>48</sup>
- Linen: All reusable textile requiring cleaning/disinfection via the laundry re-processing E.g. sheets, blankets, drapes, pyjamas and towels etc. <sup>50</sup>
- **Pathogen:** Disease causing micro-organism. <sup>48</sup>
- Personal protective equipment Any item designed to:
- Prevent the healthcare worker (HCW) clothing/uniform from becoming soiled, moistened, stained and/or contaminated with pathogenic micro-organisms which may subsequently be transferred to other patients in their care.
- Prevent the direct transfer or dissemination of potentially pathogenic micro-organisms from the HCW to the patient.
- Prevent the HCW from acquiring infection from the patient or contaminated equipment.
- Plain soap. Detergents that contain no added antimicrobial agents, or may contain these solely as preservatives.<sup>49</sup>
- Sodium Hypochlorite chlorine based. This is a chemical compound with the formulae NaClO<sub>2</sub>. Intermediate level disinfectant. Kills vegetative microorganisms and inactivated most viruses (not necessarily bacterial spores). <sup>59</sup>
- **Sterilisation**: A defined and validated process to render an item free from variable microorganisms, including bacterial spores. <sup>51</sup>
- Visibly soiled hands. Hands on which dirt or body fluids are readily visible.<sup>49</sup>

#### INFECTION PREVENTION AND CONTROL (IPC) IN THE NEONATAL UNIT

#### 1. RATIONALE

Newborn babies have a high risk of acquiring healthcare associated infections because of their immature host defense mechanisms. This is especially true of low birth weight infants who are pre-mature. Baby's bacterial flora is usually acquired through contact with the mother during delivery, family members and health care workers during their stay in hospital. Most preterm babies who require invasive procedures are admitted to the neonatal intensive care unit where they are at risk of being colonized by strains of microorganisms present in the environment.

The rationale of Infection Prevention and Control Guidelines in the neonatal nursery is:

- 1. To protect the development of the baby's natural biome
- 2. To prevent the spread of infection in the neonatal nursery
- 3. To contain an outbreak of infection

#### 2. AIM

To maintain infection prevention measures aimed to prevent morbidity and mortality

#### 3. GUIDELINES/PROCEDURE

#### 3.1 Infrastructure:

#### 3.1.1 Physical design of neonatal unit:

- Should be an independent unit with designated patient and non-clinical support areas
- In level 1(District level) institution the support services can be shared with other services
- The neonatal unit should have a single entry point with controlled access and no through traffic
- The neonatal unit should have adequate space:

# For appropriate IPC practices maintain staff and bed norms, bed spacing and avoid overcrowding

#### 3.1.2 Clinical Hand washing basin

General beds	KMC/ Lodger facility
- 1.5m <sup>2</sup> per bassinet	- 7.5m <sup>2</sup> /bed
- 1 m space between bassinets	- 1 bath/shower/7 beds
- 1.5 m aisle width	- 1 toilet/
HC/ICU beds	
- 5m <sup>2</sup> per incubator or ICU crib	
- 1.5 space between incubators and 2m	
between ICU cribs	
- 2 m aisle width	

- There must be an elbow-operated hand-washing basin at the entrance to the patient area of the neonatal unit.(See Annexure A)
- Each room must be provided with at least one clinical elbow operated hand washing basin.
- There must be at least one elbow operated hand washing basin for every 6 "beds" or part thereof.
- Laminated hand washing posters with clear instructions must be provided above all hand washbasins.
- All other posters to be placed on notice boards outside the clinical area
- Hand wash basins must be scoured and cleaned daily and when necessary with a hard surface cleaner.
- Hand wash basins are positioned to prevent splashing on incubators/cots/equipment/staff <sup>9</sup>
- Hand washing basins are logically placed to allow optimal workflow i.e. clean to dirty<sup>9</sup>
- Space is allowed for waste bins <sup>9</sup>

#### 3.1.3 Ventilation and Temperature

- Ideally all neonatal units should be ventilated. Ideally, this ventilation system should be separate from the main hospital ventilation system.
- Filters with an efficiency of at least 90% must be used.<sup>1</sup>
- Minimum of 6 air changes per hour <sup>1,2</sup>
- The nursery should be maintained at a temperature of 24-26° C with a humidity of 30-60 %.<sup>1,2</sup>

#### 3.1.4 Staffing norms

- Provision must be made for a dedicated allocation of non-rotational staff to neonatal care.
- Adequate staff is mandatory to allow for proper patient care practices and hand washing between patients.
- Support staff are required to assist with non-nursing activities ward clerk, cleaner, general orderly etc.
- Staffing norms per shift:<sup>3</sup>
  - Standard/ KMC care: 1 professional/enrolled nurse for every 6 "beds" (1 PN: 3EN)
  - High Care: 1 professional/enrolled nurse for every 3 "beds" (1 PN: 1EN)
  - Intensive care: 2 professional nurses for every 3 "beds"
- Dedicated skilled assistance is needed to mentor, support and educate lodger mothers.

#### 3.1.5 Isolation rooms

Most infections in newborns do not require special isolation precautions. General newborn infection prevention control measures will curb transmission of most infections between newborns.<sup>1</sup>

• No special restrictions should be applied to neonates born outside the hospital or transferred from other hospitals. They should be admitted to the neonatal unit and treated the same as babies born in the hospital. <sup>1</sup>

- Babies who may need special precautions are babies with airborne /droplet transmissible infections. They can be nursed in an isolation room, or a closed incubator with a distance of at least 1.2 meter separating them from other patients in the nursery. A plastic apron and gloves should be used when caring for them. PPE should be available at the bedside and discarded after use. <sup>1</sup>
- Babies who are deemed to have a serious infectious risk, e.g. varicella or measles require isolation outside the neonatal unit.<sup>1</sup>
- Neonates transferred from neonatal units with a known exposure/ cluster/ outbreak should be screened or clinically assessed for infection/ colonization with the outbreak organism as soon as possible. Neonates should be managed using Additional Precautions (isolated) appropriate to the outbreak organism.
- Appropriately designed isolation rooms with negative air pressure should be available in the nursery of every regional or tertiary institution
- Provision must be made for staff to provide 1:1 care.
- Adequate space (6 m<sup>2</sup>) must be provided, excluding the entry work area.<sup>2</sup>
- 1 bed /cubicle.<sup>2</sup>
- An elbow operated hand wash basin must be available on entry to the isolation room.<sup>2</sup>
- Choice and placement of windows must be for visual and auditory access at all times.
- Provision must be made to ensure privacy.

#### 3.1.6 Modes of Transmission

#### Contact Transmission

It involves direct or indirect contact. In direct contact transmission organisms are transferred from person to person via contact between the skin or mucosa of the source and the skin or mucosa of the recipient. E.g. transfer of organisms from a health care worker to a patient by touching the patient with contaminated hands as well as the transmission of organisms

Indirect contact transmission involves the movement of organisms from person to person via inanimate objects. E.g. the transfer of organisms from person to person via stethoscopes, needles, or endoscopes and the transfer of organisms by sequentially touching of a door handle by a source of infection and a susceptible host.

#### **Droplet Transmission**

Droplets are heavy, moist particles with a diameter of more than 5 micrometer ( $\mu$ m). These are produced during coughing, sneezing, or talking. Droplets may also be induced by healthcare-related procedures such as suctioning of the respiratory tract and bronchoscopy. When these droplets contain infectious microbes, they become a vehicle for transmission of infection. The droplets' weight does not allow them to remain suspended in the air or to travel far, and they generally settle within a meter from the source. Transmission via this route therefore requires relatively close proximity of a source of infection to a susceptible host. Many microbes that are spread by droplet transmission can also be spread by direct contact.

#### Airborne Transmission

Transmission via this route is thought to occur when small droplet nuclei of a size smaller than 5µm are aerosolized and float through the air. Droplet nuclei are droplets which lose some of their mass after evaporation of some or all of their water content. To cause infection, the organisms transmitted by this route must be able to survive adverse conditions outside the body. These infectious particles are carried by air currents and may be inhaled by a susceptible host some distance away from the source or reservoir. The details of transmission via this route have not been properly established and the risk is overestimated. In addition to transmission by droplets, *Mycobacterium tuberculosis* is thought to be transmitted in this way.

#### 3.1.7 Lodger/KMC facilities

- 6 mothers /cubicle
- Ablution facilities must be cleaned 2 hourly
- Living areas must be cleaned twice daily
- Clean linen and clothing should be provided daily and or if soiled
- Mothers to bath/shower daily. Soap and clean towels to be provided

#### 3.2 Standard Infection Prevention and Control Precautions to be observed

#### 3.2.1 Hand hygiene

Hand hygiene is the single most important and effective Infection Prevention and Control measure to prevent the spread of healthcare-associated infections. In the neonatal unit, improved adherence to hand

hygiene practice has been shown to reduce infection rates.

- There should be adequate clinical basins with liquid soap, paper towel and water to allow for hand washing.
- Alcohol based hand rubs (ABHR) is the preferred method to routinely disinfect hands in clinical situations when hands are not visibly soiled, <sup>11</sup> not exposed to biological or protein contamination. It provides for a rapid kill of most transient microorganisms, is less time-consuming than washing <sup>12-16</sup>
- To make it possible for health care providers to clean their hands at the right time, ABHR should be easily accessible at every point of care.
- Use liquid soap to thoroughly wash hands under running water on entry and on exiting the nursery and when hands are visibly soiled, <sup>11</sup> exposed to *Clostridium difficile* or *Candida species* in hyper-endemic areas, exposed to biological or protein contamination. This must be at least 40-60 seconds.
- Use single use paper towel from a suitable dispenser to dry hands and dispose of into a plastic lined, functional pedal bin.

- 2. BEFORE performing an aseptic procedure
- 3. AFTER care involving body fluid exposure risk
- 4. AFTER contact with a patient or their environment.

#### Five Moments For Hand Hygiene<sup>5</sup>

Hand Hygiege in the Neongtol Intensive Care Unit (NICU) 1. BEFORE contact with the Immediate Care Environment

For the purposes of hand hygiene, there are three distinctive environments in the NICU (see Figure 2): 2. BEFORE contact with the neonate or the Neonate Environment

- 3.<sup>1.</sup> BEFORE Environment: the environment inside an isolette/ warmer that includes the neonate 2. Immediate Care Environment: the environment immediately outside the isolette/ warmer that includes
- 4. AETERMATEUSEOWINGE CARY of under stors the event of the store of th
- 5.3. A HELE Exircements the remainder of the NEW Manneursing station, hallways, lounges, storage rooms, preparation rooms, utility rooms).

#### Figure 1 The Environnent of the Neonatal Intensive Care Unit and Adaptation of Hand Hygiene Moments<sup>5</sup>



#### NICU Environment Clean hands at initial entry

Immediate Care Environment

Clean hands on each entry into the space and on leaving the space

### Neonate Environment

Clean hands at each entry to the space

16

Long nails are difficult to clean, can pierce gloves and harbour more microorganisms than short Natural nails should be kept clean and short. <sup>14</sup> The nail should not show past the end of nails.

Effect the fingehygiene in the NICU environment necessitates the addition of an extra hand hygiene

momantificiar and traine in anternation of the anternation of the state of the stat result in more tears to gloves. For these reasons, artificial nails and nail enhancements /nail

PIDAC: polish must not be worn by those having direct contact with mothers/ newborns.

- Jewellry is hard to clean and hides bacteria and viruses from the action of the hand hygiene 21-25 agent.
- In the NICU setting, for provision of direct patient care, arms should be bare below the elbows, i.e., no bracelets, rings, wrist adornment, long sleeves, slings or watches <sup>5</sup>

#### 3.2.2 Personal Protective equipment and attire

- Perform hand hygiene before putting on gloves. <sup>5</sup>
- Wear gloves when handling the newborn after delivery prior to bath or adequate removal of the mother's body substances.<sup>5</sup>
- Wear gloves for all nappy changes. <sup>5</sup>
- Wear gloves for contact with an undiagnosed rash, lesion or non-intact skin. <sup>5</sup>
- Do not re-use or wash gloves. <sup>5</sup>
- Perform hand hygiene after gloves are removed. <sup>5</sup>
- Aprons are to be worn as part of contact precautions and not on entry.
- Aprons are strictly one per baby
- Always perform hand hygiene after removal of PPE

#### 3.2.3 Staff attire

- Personnel should wear comfortable short-sleeved (or rolled above the elbow) clean clothes daily, and may choose to wear a uniform scrub dress or suit.<sup>1</sup> Suitable changing facilities should be provided.
- Doctors must remove white coats as they enter, as these may be contaminated from other areas in the hospital<sup>1</sup>
- Hair tied off the collar

#### 3.2.4 Lodger mothers

Skin to skin/kangaroo care (KMC) between a mother and her newborn (baby placed naked with a nappy on the mother's chest) has been proven to reduce infection and improve outcomes in neonates.<sup>29</sup> It should be considered a standard of care and practiced as much as possible either intermittently or continuously.

- Lodger mothers should wash daily and wear clean short-sleeved clothes<sup>1</sup>.
- Mothers are required to shower before each contact with the baby

#### 3.2.5 Babies clothing/blankets

 Clothes eg jackets, caps or baby blankets and KMC wraps must be washed separately from the general laundry at a minimum temperature of 70° C.

#### 3.2.6 Linen Handling

Refer to Linen Management Guidelines

All linen should be handled with minimum agitation to prevent the generation of aerosols. Soiled linen should be handled wearing gloves.<sup>5</sup>

Linen is washed at a high temperature (>71° C) with a hot water detergent for a complete wash cycle (≥ 25 minutes)<sup>5</sup>

- If low temperature (<70° C) water is used for laundry cycles, detergents suitable for low temperature washing at the appropriate concentration are used for a complete wash cycle. <sup>5</sup>
- Damp laundry is dried thoroughly in a commercial dryer and is not left in machines overnight<sup>5</sup>
- Clean linen must be available at all times<sup>1</sup>
- Linen to be transported in covered laundry bags<sup>1</sup>
- New linen to be laundered prior to use<sup>1</sup>

#### Soiled/ Contaminated linen:

- Is held away from the body <sup>5</sup>
- Is bagged or contained at the site of collection in bags that are tied securely and not over-filled <sup>5</sup>
- Is contained in leak-proof yellow bags or containers and removed at least twice per day<sup>1,5</sup>
- Is not double-bagged unless the outside of the bag is visibly soiled or leaking.<sup>1</sup>

#### 3.2.7 Environmental hygiene

Refer to Infection Prevention and Guideline on Environmental hygiene. Environmental cleaning and disinfection should be performed on a routine and consistent basis to provide for a safe and sanitary environment. <sup>5</sup>

- Routine cleaning procedures must be established and strictly adhered to.<sup>31</sup>
- Cleaning services/staff must be adequately trained and supervised and should NOT rotate. <sup>31</sup>
- Cleaning methods that minimise dust dispersal should be used.<sup>1</sup>
- Have a housekeeping schedule<sup>1</sup>
- Clean neonatal unit at least twice per day AND additionally as required. <sup>30</sup> Particular attention should be paid to peak traffic areas and times (around hand basins and after feeding or visiting times) Horizontal surfaces must be dust and soil free.
- Clean from top to the bottom<sup>1</sup>
- Floors cleaned once or twice daily and PRN if soiled (particularly in high traffic areas) with chlorine based disinfectant. Phenolic solutions should not be used as absorption through the skin may cause hyperbilirubinemia. <sup>1,5</sup>
- Immediately clean up spills of blood or body fluid with disinfectant solution (chlorine based disinfectant 5000ppm)<sup>1</sup>
- Dustbins should be washed daily with soap and water, and the bags changed daily or when full. <sup>1</sup>
- Clean and dust windows and blinds weekly<sup>1</sup>
- Walls cleaned monthly
- Pest control inspections should be undertaken monthly.
- There should be no posters on the walls, with the exception of a laminated poster to demonstrate the clinical hand wash. This should be attached to the wall by means of a hook.

#### 3.2.8 Waste management

Refer to Infection Prevention and Control Guideline - Waste management.

- Waste is segregated at the point where it was generated into an appropriately lined waste receptacle with a lid.<sup>5</sup>
- Separate contaminated waste from non-contaminated waste by using appropriately colour coded plastic bags<sup>1</sup>
- Double-bagging of waste should only be necessary if the first bag becomes stretched or damaged, or when waste has spilled on the exterior. <sup>5</sup>
- Waste bags are closed when three-quarters full or at three hourly intervals and tied in a manner that prevents contents from escaping.<sup>5</sup>
- Waste is removed to central holding areas at frequent intervals. <sup>5</sup>Soiled nappies are disposed of immediately into a healthcare risk waste box. <sup>5</sup>
- Medical waste to be collected 3 hourly after every feeding round<sup>1</sup>
- Use a puncture proof container for contaminated sharps, and empty when 2/3 full<sup>1</sup>

#### 3.2.9 Patient care equipment

- Cleaning staff should be trained to clean and reset basic equipment eg incubators, ICU cribs and radiant warmers, syringe and infusion pumps.<sup>31</sup> Respiratory equipment can be cleaned by cleaning staff but reset by appropriately trained nursing staff
- No equipment must be shared and provision must be made for each baby to have his/her own equipment.<sup>1</sup> Glucometers should not be brought into the baby's bed space –only the glucostrip.
- Each baby should have his/her own stethoscope and thermometer and a patient care container containing nappies, swabs, Vaseline, bum cream and aqueous cream, saline and 0.5 %chlorhexidine in 70 % alcohol for cleaning the cord
- Single use items must be used once only then discarded appropriately.
- Equipment not in use must be cleaned and stored in the equipment room.

#### 3.2.10 Incubators/radiant warmers/bassinets

- Clean incubators/radiant warmers every day with a disposable cloth soaked in detergent and water, don't use chemicals or spirits<sup>1,5,32</sup> Mothers can be educated and supported to do this.
- Strip and clean (terminally disinfect) incubators /radiant warmers and clean environment thoroughly with chlorine based disinfectant 5000ppm after use by a patient (discharge) and after 7 days.<sup>1,5,32</sup> Phenolic solutions should not be used as absorption through the skin may cause hyperbilirubinaemia.<sup>32</sup> Allow to dry before using.
- Air filters are changed every three months or as recommended by the manufacturer. (Label to indicate the due date).<sup>5, 33</sup>
- Terminal disinfection of equipment must be done, chlorine based disinfectant 5000ppm may be used in isolation areas or for babies with resistant organisms e.g. *Acinetobacter spp*<sup>32</sup>

- Replace waterproof mattresses when waterproofing is broken<sup>1</sup>
  - use chlorine based disinfectant, 500ppm, if visibly soiled
  - o use chlorine based disinfectant, 250ppm, generally
  - cleaning from the outside in
- Disinfect bassinettes daily using disinfectant solutions<sup>5</sup>
- Terminally clean transport equipment after each newborn transport.<sup>5</sup>
- Porthole cuffs are easily contaminated <sup>5</sup> and must be disinfected and dried well with paper towel and changed between babies. Cuffs should not be used on incubator doors.

#### 3.2.11 Respiratory and IV equipment

- Ventilator and CPAP circuits do not need to be changed routinely only if visibly soiled<sup>34,35</sup>
- Use inline suction device to avoid accessing the ventilator circuit. <sup>36</sup>
- A new sterile circuit must be used for each baby.
- All equipment including syringe and infusion pumps should be changed daily, functional and free of tape and stickers.

#### 3.2.12 Resuscitation equipment

- Sufficient resuscitation equipment must be available to prevent cross infection.
- Resuscitation devices must be clean, functional and free of tape. Masks must be returned to CSSD for gas sterilization.
- Suction and oxygen units must be readily available for use with relevant bottles, tubing, bags and catheters per baby
  - Suction tubing must be changed and discarded every 24 hours, bottles and liners daily.
  - Oxygen humidifying bottles (aquapacks) changed daily if used.

#### 3.2.13 Invasive procedures

Every invasive procedure carries risks to the neonate. Intravascular devices carry particular risk due to the fragility of neonatal blood vessels. Infection Prevention and Control Guidelines must be observed at all times but especially with respect to:

- Care of wounds.
- Prevention and Control of intravenous associated infections
- Total parenteral Nutrition.
- Maintenance and use of respiratory equipment
- Principles of urinary catheterization.

#### Catheter Insertion

• Central lines must be erected by a suitably trained doctor or nurse using full aseptic technique including a full scrub, donning of sterile surgical gown, mask and gloves and use of large sterile fabric drape.<sup>37</sup>

 Disinfect skin with appropriate antiseptic (for example, 0.5 % chlorhexidine in 70 % alcohol) before catheter insertion<sup>37</sup>

#### Catheter maintenance

- Ensure timeous completion of the daily assessment chart.
- Assess the catheter site daily for signs of infection.<sup>37</sup>
- Perform hand hygiene before and after accessing a catheter or changing the dressing<sup>37</sup>
- Clean the umbilical area 3hrly with 0.5 % chlorhexidine in 70% alcohol, if lines are in situ.
- Remove soiled/ loose strapping and restrap immediately.<sup>37</sup>
- Routine resiting of peripheral IV lines is not required.
- When accessing IV lines the access port should be thoroughly cleaned with chlorhexidine tincture before accessing. Preferably IV lines should only be accessed via a needle free access port. <sup>5</sup>
- Intravenous giving sets and bags should be changed every 72 hours.<sup>1,38</sup>
- IV filters able to filter endo toxins may be used.
- TPN fluids are ordered directly from the supplying company and no decanting at the institutional level is allowed. TPN bags and lines should be changed every 24hrs.<sup>39</sup>

#### Catheter removal

Review the need for the catheter daily and remove as soon as possible.<sup>37</sup> Remove umbilical arterial lines after 5-7 days and venous lines after 14 days.<sup>40</sup>

#### 3.2.14 Patient care

Skin care - maintain skin integrity -as a major barrier to infection. 45, 46

- Skin to skin contact between mother and baby should be encouraged at all times. This facilitates colonization by non-pathogenic bacteria.
- Apply hydrocolloid/semi permeable dressing beneath all adhesives 46
- Bath babies with warm water and/or a PH neutral cleanser or aqueous cream.<sup>45</sup>
- Where available/possible, babies <30 weeks should be nursed in a humidified environment to avoid drying and cracking of the skin and mucous membranes and in a clean polyethylene plastic bag.<sup>45</sup>
- The bag must be single use and discarded appropriately after each use.
- Apply barrier cream eg zinc and castor oil at each nappy change.
- Use hydrogel ECG electrodes
- Use non-adhesive saturation wraps
- Use of positioning and pressure relieving aids
- Use of aqueous disinfection agents for skin cleaning products
- Use of warm water to remove adhesive products
- Minimal use of adhesives
- Non use of solvents (eg Convacare wipes)

#### 3.2.15 Bathing:

- Do **not** routinely bath babies on admission.
- Vernix caseosa has anti infective properties and should not be removed

#### 3.2.16 Eye care:

- Eyes should be cleaned with Normal Saline and sterile cotton wool 3hrly if there are any signs of infection-redness, swelling or discharge.<sup>43</sup>
- A single application of antiseptic ointment should be instilled prophylactically for all newborn babies. Single dose containers are advisable.

#### 3.2.17 *Umbilical cord care:*

- Ensure umbilicus is kept clean and dry at all times.
- Clean cord with 0.5% chlorhexidine in 70% alcohol solution immediately after birth and at every nappy change.
- Ensure nappy is folded below the umbilicus to ensure cord remains dry and is not contaminated with urine or faeces.

#### 3.2.18 Infant feeding

Refer to Infection Prevention and Control Guideline on Milk kitchen and the preparation of infant feeds.

- Breast-feeding should be commenced within one hour of birth in order to colonize the infants gut with non-pathogenic bacteria and in order to transfer passive immunity to the baby. If breast-feeding is not possible colostrum should be expressed and given to the baby.
- Formula feeding should be avoided. The use of donor milk should be encouraged if mothers own milk cannot be obtained.
- Breast milk may remain at room temperature for four (4) hours and in the fridge for 48 hrs.<sup>5</sup>
- Sterile commercial formula, prepared ready to feed, should be used within two (2) hours of uncapping and then discarded.<sup>5</sup> It can be stored for 24 hrs in the fridge.<sup>5</sup>
- Hand hygiene must be emphasized and aseptic technique maintained during the preparation and administration of all feeds.
- Sterile cups should be used for collection or storage of breast milk.<sup>5</sup> These should be rinsed, dried and then double bagged and sent for autoclaving. Do not rinse and reuse.
- Where disposable syringes are used for feeding, use once and discard.
- Continuous infusion tube feeding should be set up with the same aseptic precautions used for intravenous fluids. Syringes and tubing should be changed every four (4) hours.<sup>5</sup>
- If a breast pump is used, the pump components should be washed in hot soapy water, rinsed and sterilized between uses.
- Naso gastric tubes (made of PVC) are for short-term use. Gastric juices can further harden the plastic leading to possible perforation. Tubes should therefore be clearly dated and changed at least once per week.<sup>44</sup>

#### 3.2.19 Medications

• Ensure aseptic technique is maintained at all times.

The use of multi-dose vials should be avoided if possible. Where multi-dose vials are used, these should be labelled correctly with the date and time of opening. This may be used for multiple patients within the same medication round, provided the medication round does not exceed 20 minutes. The vial septum must be disinfected with 0.5 % chlorhexidine in 70 % alcohol between each aspiration. The vial septum must be dry before aspiration. The vial must be stored in accordance with the manufacturers' recommendation and discarded appropriately thereafter

- Any glucose containing solution must be used for one patient only
- Careful attention must be paid to reconstitution –fresh solutions should be discarded immediately
  after use. The metal seal must be completely removed not folded back before cleaning and
  accessing the vial.
- The cold chain should be maintained. Medications should be removed from the fridge and used immediately before being returned to the fridge.
- Medications should be prepared and administered by the baby's individual nurse and checked with a second nurse. Prolonged medication rounds should be avoided.
- When accessing IV lines the access port should be thoroughly cleaned with 0.5 %chlorhexidine in 70 %alcohol and allowed to dry before accessing. Preferably IV lines should only be accessed via a needle free access port.

#### 3.2.20 Visiting

Although visitors are less likely than staff to transmit infection to multiple patients in the health care setting, they should receive instruction before they visit a mother and/ or newborn, to ensure compliance with infection prevention and control measures: <sup>41</sup>

- Strict Hand hygiene on entry to the unit and hand spray at the bedside must be emphasized for all visitors. Protective clothing is not routinely required unless the baby is in isolation.
- Family centered care must be supported and encouraged.
- Mothers and fathers should have 24 hour access to their baby.<sup>1,5,42</sup>
- The visiting policy should be carefully explained to the mother.
- Family members and others should not visit if they are unwell with signs and symptoms that are possibly infectious in aetiology, including:<sup>1,5,43</sup>
  - fever
  - cough or influenza-like symptoms
  - runny nose
  - vomiting or diarrhoea rash
  - conjunctivitis.
- Siblings should be allowed to visit for short periods under the direct supervision of the mother.
- Only 2 visitors should be permitted at the bedside at once (parent and 1 other)

#### 3.2.21 Health education to mothers

- Mothers must not touch or make contact with any other baby
- Lodger mothers are from diverse cultures and communities and need to be treated with understanding, respect and patience.
- Mothers should be taught the importance of good personal hygiene and hand washing practices.
- Lodger mothers must be taught the importance of preventing contact with potentially contaminated facecloths, towels, bedclothes, tissues and other fomites.

#### 3.2.22 Outbreak control

Refer to Infection Prevention and Control Guideline for the management of outbreaks.

- An outbreak is defined as the isolation of 2 or more organisms belonging to the same genus and species from different patients that are clinically significant with the same antibiogram and epidemiologically linked.
- There must be continuous, daily surveillance of HAI. It is the responsibility of the operational manager to ensure that the surveillance system is functional. IPC representatives are responsible for daily monitoring. Once a situation that fits into the definition above has been identified, the Hospital Infection Prevention and Control professional must be alerted. He/ she must then forward appropriate reports and the reporting template to the , Management, District office and Provincial IPC team for prompt outbreak response

#### 3.2.23 Employee Health

- Ideally, individuals with respiratory, cutaneous, mucocutaneous and gastrointestinal infection should not have direct contact with the neonate.
- Personnel allocated to work in the nursery should be immune to rubella, measles, polio and chickenpox.
- The immunization status of nursery personnel must be up-to-date.

#### 4. MONITORING AND EVALUATION

It is the responsibility of the Hospital management, Infection Prevention and Control Professional, Unit management and Unit staff to ensure that effective support, implementation, monitoring and evaluation systems are in place. Audits of adherence to Infection Prevention and Control Guidelines need to be undertaken regularly and supported by appropriate in-service education programmes.

#### 5. **REFERENCES**

- 1. Recommended Standards for Essential Newborn Care- South Africa. Published April 2012
- 2. Robert D. White, MD, Chairman -Consensus Committee on Recommended Design Standards for Advanced Neonatal Care. *Recommended Standards for Newborn ICUDesign. Feb 2007.*
- 3. Dr N. McKerrow. KZN Provincial Neonatal Staffing Norms Jan 2015
- 4. Dr N. McKerrow. KZN Provincial Norms for Physical Facilities-Neonatal Units Jan 2010

- 5. Best Practices for Infection Prevention and Control in Perinatology In All Health Care Settings that Provide Obstetrical and Newborn Care. Provincial Infectious Diseases Advisory Committee (PIDAC) Ontario Agency for Health Protection and Promotion Published: April 2012
- 6. Won SP, Chou HC, Hsieh WS, Chen CY, Huang SM, Tsou KI, et al. *Handwashing program for the prevention of nosocomial infections in a neonatal intensive care unit.* Infect Control Hosp Epidemiol. 2004 Sep;25(9):742-6.
- Pessoa-Silva CL, Hugonnet S, Pfister R, Touveneau S, Dharan S, Posfay-Barbe K, et al. Reduction of health care associated infection risk in neonates by successful hand hygiene promotion. Pediatrics. 2007 Aug;120(2):e382-90.
- Sakamoto F, Yamada H, Suzuki C, Sugiura H, Tokuda Y. Increased use of alcohol-based hand sanitizers and successful eradication of methicillin-resistant Staphylococcus aureus from a neonatal intensive care unit: a multivariate time series analysis. Am J Infect Control. Sep;38(7):529-34.
- Capretti MG, Sandri F, Tridapalli E, Galletti S, Petracci E, Faldella G. Impact of a standardized hand hygiene program on the incidence of nosocomial infection in very low birth weight infants. Am J Infect Control. 2008 Aug;36(6):430-5.
- 10. Pittet D. *Improving compliance with hand hygiene in hospitals*. Infect Control Hosp Epidemiol. 2000 Jun;21(6):381-6.
- Provincial Infectious Diseases Advisory Committee (PIDAC). Best Practices for Hand Hygiene in All Health Care Settings. 2010 [cited June 14, 2011]; Available from: http://www.oahpp.ca/resources/pidac- knowledge/best-practice-manuals/hand-hygiene.html.
- 12. Picheansathian W. A systematic review on the effectiveness of alcohol-based solutions for hand hygiene. Int J Nurs Pract. 2004 Feb;10(1):3-9.
- Boyce JM, Pittet D. Guideline for Hand Hygiene in Health-Care Settings. Recommendations of the Healthcare Infection Control Practices Advisory Committee and the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. Infect Control Hosp Epidemiol. 2002 Dec;23(12 Suppl):S3-40.
- 14. Kampf G, Kramer A. Epidemiologic background of hand hygiene and evaluation of the most important agents for scrubs and rubs. Clin Microbiol Rev. 2004 Oct;17(4):863-93.
- Girou E, Loyeau S, Legrand P, Oppein F, Brun-Buisson C. Efficacy of handrubbing with alcohol based solution versus standard handwashing with antiseptic soap: randomised clinical trial. BMJ. 2002 Aug 17;325(7360):362.
- Pittet D, Hugonnet S, Harbarth S, Mourouga P, Sauvan V, Touveneau S, et al. *Effectiveness of a hospital- wide programme to improve compliance with hand hygiene*. Infection Control Programme. Lancet. 2000 Oct 14;356(9238):1307-12.
- 17. Olsen RJ, Lynch P, Coyle MB, Cummings J, Bokete T, Stamm WE. *Examination gloves as barriers to hand contamination in clinical practice*. JAMA. 1993 Jul 21;270(3):350-3.

- 18. Moolenaar RL, Crutcher JM, San Joaquin VH, Sewell LV, Hutwagner LC, Carson LA, et al. A prolonged outbreak of Pseudomonas aeruginosa in a neonatal intensive care unit: did staff fingernails play a role in disease transmission? Infect Control Hosp Epidemiol. 2000 Feb;21(2):80-5.
- 19. Josephson D. Intravenous Infusion Therapy for Nurses: Principles & Practice: Thomson Delmar Learning; 2003.
- Toles A. Artificial nails: are they putting patients at risk? A review of the research. J Pediatr Oncol Nurs. 2002 Sep-Oct;19(5):164-71. Hoffman PN, Cooke EM, McCarville MR, Emmerson AM. Micro-organisms isolated from skin under wedding rings worn by hospital staff. Br Med J (Clin Res Ed). 1985 Jan 19;290(6463):206-7.
- 21. Fagernes M, Lingaas E, Bjark P. *Impact of a single plain finger ring on the bacterial load on the hands of healthcare workers.* Infect Control Hosp Epidemiol. 2007 Oct;28(10):1191-5.
- 22. Wongworawat MD, Jones SG. *Influence of rings on the efficacy of hand sanitization and residual bacterial contamination.* Infect Control Hosp Epidemiol. 2007 Mar;28(3):351-3.
- 23. Salisbury DM, Hutfilz P, Treen LM, Bollin GE, Gautam S. *The effect of rings on microbial load of health care workers' hands.* Am J Infect Control. 1997 Feb;25(1):24-7.
- 24. Yildirim I, Ceyhan M, Cengiz AB, Bagdat A, Barin C, Kutluk T, et al. *A prospective comparative study of the relationship between different types of ring and microbial hand colonization among pediatric intensive care unit nurses.* Int J Nurs Stud. 2008 Nov;45(11):1572-6.
- 25. Alur AA, Rane MJ, Scheetz JP, Lorenz DJ, Gettleman L. *Simulated microbe removal around finger rings using different hand sanitation methods.* Int J Oral Sci. 2009 Sep;1(3):136-42.
- 26. Casanova L. Assessing the Risk of Viral Transmission from Contaminated Personal Protective Equipment to Employees' Skin and Clothing in the Healthcare Setting. 18th SHEA Annual Meeting; Orlando, Florida2008
- 27. Webster J, Pritchard MA. Gowning by attendants and visitors in newborn nurseries for prevention of neonatal morbidity and mortality. Cochrane Database Syst Rev. 2003;(3):CD003670.
- 28. Provincial Infectious Diseases Advisory Committee (PIDAC). Routine Practices and Additional Precautions in All Health Care Settings. 2010 [cited June 14, 2011]; Available from: http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html.
- 29. Conde-Agudelo A, Díaz-Rossello JL. *Kangaroo mother care to reduce morbidity and mortality in low birthweight infants.* Cochrane Database of Systematic Reviews 2014, Issue 4. Art. No.: CD002771. DOI: 10.1002/14651858.CD002771.pub3.uy
- Provincial Infectious Diseases Advisory Committee (PIDAC). Best Practices for Environmental Cleaning for Prevention and Control of Infections in All Health Care Settings. 2009 [cited June 14, 2011]; Available from: http://www.oahpp.ca/resources/pidac-knowledge/best-practicemanuals/environmental- cleaning-for-prevention-and-control-of-infections.html.

- 31. Surface microbes in the neonatal intensive care unit. Changes with routine cleaning and over time. Journal of Clinical Microbiology 2013 Aug:51(8) 2617-2624
- 32. William A. Rutala, Ph.D., M.P.H.1,2, David J. Weber, M.D., M.P.H.1,2, and the Healthcare Infection Control Practices Advisory Committee (HICPAC) *Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008*
- 33. http://www.adhb.govt.nz/newborn/Guidelines/Admission/BabyInIncubator.htm
- 34. AARC Clinical Practice Guideline. Care of the ventilator circuit and its relation to ventilator associated pneumonia. Resp. care 2003; 48(9): 869-879
- 35. Kawanishi F et al .*Risk factors for ventilator associated pneumonia in neonatal intensive care unit patients.* J. Infect.chemotherapy 2014 Oct, 20(10): 627-30
- 36. Taylor JE, Hawley G, Flenady V, Woodgate PG. Tracheal suctioning without disconnection in intubated ventilated neonates. Cochrane Database of Systematic Reviews 2011, Issue 12. Art. No.: CD003065. DOI: 10.1002/14651858.CD003065.pub2.
- 37. Stevens TP et al. Evidence-based approach to preventing central line-associated bloodstream infection in the NICU. Acta Pædiatrica ISSN 0803–5253
- 38. Ullman AJ, Cooke ML, Gillies D, Marsh NM, Daud A, McGrail MR, O'Riordan E, Rickard CM. Optimal timing for intravascular administration set replacement. Cochrane Database of Systematic Reviews 2013, Issue 9. Art. No.: CD003588. DOI: 10.1002/14651858.CD003588.pub3
- *39.* Foster JP, Richards R, Showell MG, Jones LJ. Intravenous in-line filters for preventing morbidity and mortality in neonates. Cochrane Database of Systematic Reviews 2015, Issue 8. Art. No.: CD005248. DOI: 10.1002/14651858.CD005248.pub3.
- 40. College of Respiratory Therapists Ontario. *Central access-Umbilical artery and vein cannulation. Clinical best Practice Guideline*. October 2008
- 41. Imdad A, Bautista RMM, Senen KAA, Uy MEV, Mantaring III JB, Bhutta ZA. Umbilical cord antiseptics for preventing sepsis and death among newborns. Cochrane Database of Systematic Reviews 2013, Issue 5. Art. No.: CD008635. DOI: 10.1002/14651858.CD008635.pub2
- 42. Provincial Infectious Diseases Advisory Committee (PIDAC). *Routine Practices and Additional Precautions in All Health Care Settings.* 2010 [cited June 14, 2011]; Available from: <a href="http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html">http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html</a>.
- 43. Southern Health and social care trust. Children & Young People's Directorate. *Procedure for neonatal eye care.* March 2013.
- 44. Great Ormond Street Hospital for Children. NHS Foundation Trust. *Nasogastric and Orogastric tube management.* May 2014
- 45. Eastern region neonatal benchmarking group. Benchmark-Skin Integrity. Aug. 2008
- 46. The Royal children Hospital Melbourne. *Neonatal and Infant skin care guideline*. Reviewed July 2013.

- 47. Davidson JE, Savidan KA et al. Using Evidence to remove obstacles to family presence. Critical Care Nursing 2014 Oct-Dec, 37(4):407-21
- 48. World Health Organization (WHO). WHO Guidelines on Hand Hygiene in Health Care [Internet]. 2009. Available from: http://www.who.int/infection-prevention/publications/hand-hygiene-2009/en/
- 49. Ryan K, Havers S, Olsen K, Grayson PML. Hand Hygiene Australia [Internet]. 2017 p. 46. Available from: www.hha.org.au
- 50. World Health Organization. Hand Hygiene Technical Reference Manual: To be used by healthcare workers, trainers and observers of hand hygiene practices. WHO Libr Cat Data [Internet]. 2009;1–31. Available from: http://apps.who.int/iris/bitstream/10665/44196/1/9789241598606\_eng.pdf\nhttp://whqlibdoc.who.i nt/publications/2009/9789241598606\_eng.pdf
- 51. Arbee R, Mahes N, Mankahla U, Naroth A, Suleman F, Essack SY. Status of infection control in public hospitals in KwaZulu-Natal : forum [Internet]. Vol. 79. 2012. p. 32–5. Available from: http://reference.sabinet.co.za/webx/access/electronic\_journals/mp\_sapj/mp\_sapj\_v79\_n3\_a10.pd f
- 52. World Health Organization. WHO | Clean Care is Safer Care [Internet]. 2009. p. 6. Available from: http://www.who.int/gpsc/en/\nhttp://whqlibdoc.who.int/publications/2009/9789241597906\_eng.pdf
- 53. Al J de V et. Outbreak of Serratia marcescens colonisation and infection traced to a healthcare worker with long-term carriage in the hand. Infect Control Hosp Epidemiol. 2006;27:1153–8.
- 54. Excellence NI for H and C. Infection : prevention and control of healthcare-associated infections in primary and community care. 2012.
- 55. HSE South(Cork and Kerry). Guidelines on Infection Prevention and Control. 2012 p. 1–7.

Josephson D. No Title. Intraven Infus Ther Nurses Princ Pract Thomson Delmar Learn.

- 56. Newborn R, Prevention I, Guidelines C, To P. Chapter 24 : Infection Prevention and Control (IPC) in the Neonatal Unit.
- 57. Ward DJ. infection controi. 2007;2(Ii):654-7.
- 58. Pittet D, Donaldson L. Clean Care is Safer Care: The first global challenge of the WHO World Alliance for Patient Safety. Am J Infect Control. 2005;33(8):476–9.

#### 6. ANNEXURE: A: Handwash facility specification

Applicable to all areas. Only ablution facilities are exempt.

- 1 Clinical handwash basins to be available in clinical areas but ideally should be located outside the patient areas. Recommended width 590-600 mm
  - Conveniently placed (in the corridor outside the patient area) it should not require a long walk to wash hands
  - Easily accessible at all times and not obstructed by equipment
  - Sink plugs should not be used
  - The area around the basin should be kept clean, dry and uncluttered
  - Only in-use equipment and supplies to be at hand; extra stocks should remain in the stock room
  - Hand wash basin must be adequately supplied with liquid soap and disposable paper towels
  - Hand wash basins should only be used for handwashing purposes
  - The floor surface in the vicinity should also be non-porous and be non-slip as well.
  - Both wall and floor must be kept clean and dry.
  - Stainless steel may be used in the main kitchen, ward kitchen, sluice rooms, waste areas and cleaners' room.
  - No overflow
- 2 Do not use basins that have a built in splash-back
- 3 Basins must be free standing or wall mounted. Do not mount over cupboards, counter tops or with pedestals
- 4 Splash-backs should be done first and basin mounted over. Minimum splash-back after installation, height above basin 45cm, each side of basin 15cm
- 5 No overflow opening in the basin allowed
- 6 Take into account the fixing of paper towel and soap dispensers when determining the area size for the splash back. The dispenser must not obstruct the tap
- 7 Ensure that there is a proper seal between basin and splash-back. Do not use tiling grout, waterproof silicone is preferred
- 8 Basins should be mounted at a height of 900-950 mm from floor to rim of basin
- 9 Elbow operated wall mounted mixer taps must be used. Fix at a suitable height. Consider the single lever wall mounted mixer taps (preferred tap)
- 10 Ensure that the selected tap is compatible with the selected basin. Water must not flow directly into the basin drain. Taps must be fitted accordingly.
- 11 Tap handles (double handle mixer) should be positioned at 45° from the wall in its closed position. Pull to open.
- 12 Tap handles (single handle mixer) should not operate further than 45° from the wall on each side.In effect, tap should be fully closed or opened at 45° from each side of the wall

- 13 Tap handles must have a minimum length of 180 mm. The tap must be matched with the basin
- 14 Taps must be fixed at a height of 1200-1250mm from the floor to the tap handle
- 15 Recommended distance between the tap spout and the drain of the basin is 270-350mm
- 16 Soap dispensers must be stainless steel elbow operated. Fix at a suitable height and position within elbow reach. The dispenser nipple must be visible.
- 17 Pedal-operated bins to be used
  - Label appropriately
  - Line with clear plastic
  - Empty frequently to prevent overflow
- 18 Paper towel dispensers must be non-touch. The folded type is preferred over reflex paper towel dispensers, mainly due to procurement issues. Reflex type is acceptable.
  - Hand drying is an essential step in handwashing and should be done in such a manner that hand recontamination does not occur
  - Wet hands provide better conditions for the transmission of organisms
  - Friction from the paper towel removes another layer of transient micro-organisms from the skin. Bacterial transfer occurs more readily between wet surfaces than dry ones
  - Single-use paper towel must be dispensed from a wall mounted dispenser.
  - Used paper towel is discarded in general waste
- 19 Water must not collect at the bottom of the basin
- 20 Waste drain pipes must be hard plastic or stainless steel or the chrome plated derivative. Do not use rubber pipes
- 21 Do not mount any mirrors above hand wash basins
- 22 Do not mount alcohol hand rub dispensers at hand wash basins. These can be fixed at the entrance of a ward or between ward beds as recommended.
- 23 All piping must be concealed.
- 24 Hot and cold free running water must be supplied, 40-45° C
- 25 Hand wash basins must not be used to tip patient fluids or for discarding medication ; no cleaning or rinsing of patient care articles is permitted



### Tool 12: Neonatal IPC Audit

To be completed Monthly by IPC manager (Or Unit Manager if IPC not available). Assess during the morning when medication rounds and feeds are being performed.														
Year:	each mulcator for each		using tai	5165										
Not a	pplicable (NA):	Does not apply to the unit or individual as	sessment	or not ol	bserved.									
Non-C	Compliant (NC):	<50% compliance												
Partia	Illy Compliant (PC):	50-80% Compliance												
Comp	liant (C):	80-100% Compliance												
NO.		INDICATOR	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar.
Unit F	acilities							•						
1.	Bed spacing- GC-1m, H	C-1.5m, ICU-2m												
2.	Bed numbers maintained-no overcrowding													
Isolat	Isolation Facilities (Regional and tertiary)													
3.	Only x1 bed in each roo	om												
4.	1:1 staffing provided if	room is occupied.												
5. Only babies with droplet/airborne infections nursed in isolation														
Lodger/KMC Facilities														
6.	Maximum of 6 mothers /cubicle-no overcrowding													
7.	Living areas cleaned twice daily and well maintained													
8.	Ablutions (Shower/bat	h) available clean and in good condition												
9.	Mothers issued with cl	ean clothing daily AND if soiled												
10.	Soap and clean towel a	vailable for every mother												
11.	Mothers bath/shower	daily												
12.	Mothers educated not personal hygiene	to touch other babies and importance of												
Staff (	Medical and nursing)													
13.	Minimum staff: patient	t ratios maintained												
	1PN:1.5 ICU; 1:3 HC (1	PN:1EN); 1:6GC/KMC (1PN:3EN)												
14.	Clothing-sleeves abov	e elbows. No jerseys/jackets												
15.	Jewellery-only wedding	g bands and stud earrings-no watches												
16.	16. Nails- short, clean and no polish													
17.	Hair- clean and off sho	ulders												
		A. NA												
		NC												
		PC												
		С												

Patier	nt Care		April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar.
18.	Alcohol based hand ru	b (ABHR) in pump dispenser easily												
	accessible at foot of ea	ich bed												
19.	Staff wear new apron	per patient/per contact in HC and ICU												
20.	Yellow aprons & gloves	s used for babies with resistant infections												
21.	Nasogastric tubes date	ed and changed weekly												
22.	IV lines and bags changed	ged every 72 hrs if no filter												
23.	IV lines and bags chang	ged every 96 hrs if filter present												
24.	TPN and line changed	every 24hrs												
25.	Needle free IV lines in	use												
26.	Urinary catheter -close	ed system used												
27.	Clean patient care con	tainer at each bed (plastic tub with swabs,												
	saline amps, chlorhexid	dine tinct, 50ml Vaseline etc)												
28.	No excess /spare items	s in care containers												
29.	Dressings/strapping cle	ean and secure												
30.	Extra thin hydrocolloid	dressing applied under all adhesives												
31.	Non adhesive saturation	on probe holders in use												
32.	Tape avoided for heel	pricks / phlebotomy												
33.	Use hydrogel electrode	25												
34.	Umbilical venous lines	removed after 14 days												
35.	Umbilical arterial lines	removed after 5-7 days												
36.	All nappies folded belo	w the umbilicus												
37.	Umbilicus cleaned 3hr	y with chlorhexidine/alcohol												
38.	Eyes cleaned 3 hrly if r	ed/swollen or discharging												
39.	Mouth cleaned 3hrly a	nd Vaseline applied												
40.	Barrier cream applied	after every nappy change												
41.	In the 1 <sup>st</sup> week of life f	or babies under radiant warmers a new												
	clean plastic blanket us	sed be used daily												
42.	No breakthrough/leak	age noted on wound dressings												
43.	Gastroschisis/ exomph	alos/ meningo-cele dressed with plastic												
	bag/ opsite/cling wrap	<ul> <li>not saline and gauze</li> </ul>												
Feedi	ng -Milk Room /Fridge													
44.	Milk room clean													
45.	Fridge clean-Not iced u	р												
		B. NA												
		NC												
		PC												
		С												

Feed	ing -Milk Room /Fridge c	ontinued	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar.
46.	Milk fridge temperature	e recorded twice daily- maintained 2-8°C.												
47.	No milk prepared in the	e unit												
48.	No decanting of milk fe	eds												
49.	Only milk feeds kept in	fridge												
50.	Milk feeds refrigerated	immediately not left out												
51.	No formula feeding give	en unless medically indicated												
52.	If formula indicated-cor	mmercial ready to use formula used												
53.	Donor milk accessible													
54.	Commercial formula dis	scarded after 24hrs in fridge												
55.	Breast milk discarded a	Ifter 4hrs (room temp) or 48hrs in fridge												
56.	Continuous feeds-exter	nsion set & syringe discarded every 4hrs												
57.	New syringe used for e	ach feed												
58.	New sterile expressing	(Sinappi) cup used for <b>each</b> expression												
Med	ications (Observe a medi	cation round)												
59.	Central, clean preparati	ion area used for dispensing medications												
60.	Medications dispensed	by each baby's nurse												
61.	Medication "round" las	ts no longer than 20 minutes												
62.	Med. fridge temp. reco	rded twice daily- maintained 2-8°C.												
63.	Medications labelled co	prrectly-date, time, volume, sign												
64.	Ampoules and single us	e vials (eg Pen G) discarded immediately												
65.	Metal seals on vials ren	noved completely before use												
66.	All rubber bungs cleane	d with chlorhexidine in alcohol and												
	allowed to dry before a	ccessing.												
67.	No expired medications	s in stock												
Dres	sing/Stock Room													
68.	Clean and tidy													
69.	Nothing stored on the f	loor												
70.	Stock rotated and not c	overstocked												
71.	Well aerated													
		C. NA												
		NC												
		PC												
		С												1

Linen	Room/Cupboards		April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar.
72.	Clean and tidy													
73.	Not used as storage are	ea for non linen items												
74.	Adequate clean linen a	vailable												
75.	Soiled linen held away	from body AND												
76.	Bagged & tied securely	<ul> <li>¾ full (double bagged if contaminated)</li> </ul>												
Ablut	ions													
77.	Clean-Checked regular	ly using checklist												
78.	Hand washing facilities	available and meet norms												
79.	Toilet paper available													
Sluice	room													
80.	Clean													
81.	Hand washing facilities	available and meet norms												
82.	Daily towels used & dis	scarded immediately for dusting												
83.	Basins clean, dry and ir	nverted												
84.	Sinks clean and dry													
85.	Double bucket and wri	nger system used for cleaning floors												
86.	Wringer located over r	inse bucket												
87.	Mops clean, dry, colou	r coded and stored vertically												
88.	Cleaning material corre	ectly labelled (with name and required												
	dilution) and stored in	a labeled cupboard												
89.	Cleaning equipment cle	ean, dry and correctly stored												
Waste	e Management													-
90.	Sharps discarded imme	ediately into sharps container or receiver												
	if portable sharps contained	ainers not available												
91.	Sharps containers seal	ed, removed when 2/3rds full												
92.	Lids on hazardous was	te boxes												
93.	Hazardous waste boxe	s sealed & removed when 2/3rds full												
94.	Waste segregated and	discarded at source (into plastic bags												
	/pedal bin)													
95.	Waste separated & dis	carded correctly into red/black/clear bags												
96.	Medical waste collecte	d at least 3hrly after feeding round												
97.	Dustbins cleaned daily-	bags not over full.												
		D. NA												
		NC												
		PC												
		С												

Enviro	onmental Hygiene		April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar.
98.	All horizontal surfaces clean-no dust found													
99.	Floors and skirting boards clean with no polish b	uildup												
100.	Ceilings and walls clean and cobweb free													
101.	Windows and blinds clean													
102.	Posters only on pin boards not on walls													
Patier	nt Care Equipment													
103.	Incubators/cots cleaned daily with disp. cloth, de	etergent &water												
	(No stickers/tape)													
104.	Mothers educated and supported to do this													
105.	Bed linen present and clean													
106.	Incubator filters changed 3mthly-Due date displa	ayed												
107.	Only one baby per incubator/cot													
108.	Incubators terminally disinfected (Stripped & cle	aned with												
	chlorine disinfectant)by cleaning staff on disch. 8	& weekly (if												
	spare incub. avail.)													
109.	Equipment clean and functional (No stickers/tap	e) - daily												
	equipment maintenance checklist current													
110.	Bed mattresses intact													
111.	Suction tubing, bottles , liners changed & discard	ded daily if used												
112.	Oxygen humidifier changed daily if used													
113.	Pediatric stethoscope available at each bed													
114.	Thermometer available at each bed													
115.	Glucometers wiped with alcohol in between pati	ients												
116.	Transport incubator clean (Terminally disinfect a	after each use)												
117.	Ventilator and CPAP circuits changed when soile	d												
118.	Sterile circuit used for each patient													
119.	Inline suction device in use for ventilated babies	-changed daily												
		E. NA												
		NC												
		PC												
		С												
		Totals:	%	%	%	%	%	%	%	%	%	%	%	%

Month	Date	Assessed By -Sign	Print	Desig.	Handed over to -Sign	Print	Desig.
April							
May							
June							
July							
August							
September							
October							
November							
December							
January							
February							
March							

Scoring and Feedbac	k-In Discussion with the Un	it:								
April Scoring	NA=	NC=	PC=	C=						
	NAx2=			Cx2=						
	A: PC + (Cx2) =		B: 240 - (NAx2)=							
	A / B = X 100 = %									
Feedback (Include tin	ne frames and responsible p	people for action plan)								
Gaps Identified:										
Action Plan:										

May Scoring	NA=	NC=	PC=	C=						
	NAx2=			Cx2=						
	A: PC + (Cx2) =		B: 240 - (NAx2)=							
	A / B =		X 100 = %							
Feedback (Include tin	Feedback (Include time frames and responsible people for action plan)									
Gaps Identified:										
Action Plan:										

June Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240 - (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				

July Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240 - (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				

August Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240 - (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				

September Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240 - (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				

October Scoring	NA=	NC=	PC=	C=	
	NAx2=			Cx2=	
	A: PC + (Cx2) =		B: 240 - (NAx2)=		
	A / B =		X 100 = %		
Feedback (Include tin	ne frames and responsible p	people for action plan)			
Gaps Identified:					
Action Plan:					

November Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240 - (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				

December Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240 - (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				

January Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240- (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				

February Scoring	NA=	NC=	PC=	C=	
	NAx2=			Cx2=	
	A: PC + (Cx2) =		B: 240 - (NAx2)=		
	A / B =		X 100 = %		
Feedback (Include tin	ne frames and responsible p	people for action plan)			
Gaps Identified:					
Action Plan:					

March Scoring	NA=	NC=	PC=	C=
	NAx2=			Cx2=
	A: PC + (Cx2) =		B: 240- (NAx2)=	
	A / B =		X 100 = %	
Feedback (Include tin	ne frames and responsible p	people for action plan)		
Gaps Identified:				
Action Plan:				



Date:	Unit:										
1. To be assessed month	ly by Operational or IPC Manager			На	nd H	ygier	ne Au	ıdit T	ool		
A. Handwashing Facilities											
1. Mark each item- 🗸 or 🗴 an	d then total										
	Basin No.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Water available											
2. Basin clean											
3. Basin deep enough to preve	ent splashing										
4. Basin only used for handwa	shing & not for disposal of body fluids										
5. Tiled splash back											
6. Elbow operated taps											
7. Taps functional and not lea	king										
8. Mixer tap allows easy rinsin	g to the elbow and does not point										
directly over basin outlet											
9. Elbow operated /non touch	liquid soap										
10. Soap dispenser clean & soa	p available										
11. Paper towels available in di	spenser										
12. Hand wash poster displayed	t										
13. Functional pedal /non touc	h bin available										
14. Bin not overflowing											
	Totals										
	Divided by 14										
	X100 =%										
Total % & divide by no. of	basins Total Handwashing Facilities		%								

7. Hand Hygiene



#### B. Hand Hygiene Practice In Neonates- 7 moments for Hand Hygiene!

1. Observe handwashing practices in the unit for at least 15mins during a busy period eg feeding time

2. Ensure all categories staff/mothers are present in the unit.

3. If possible do not inform staff that you are observing practices.

4. Mark with a  $\checkmark$  when there is an opportunity for each category of person to perform hand hygiene

5. Mark with a  $\checkmark$  if the person performs the appropriate hand hygiene

6. Divide the number performed by the number of opportunities observed for each category

Moment One: Hand hygiene before entering the unit							
Doc	tors	Nu	rses	Mot	thers		her
Opportunity	Performed	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed
Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=
B divided by A=	=	B divided by A=	=	B divided by A= B		vided by A= B divided by A=	
X 100 =	%	X 100 =	%	X 100 =	%	X 100 =	%
			bbA	each percentage	and divide by 4	Moment One:	%

Opportunity         Performed         Opportunity         Performed           Opportunity         Performed         Opportunity         Performed           Image: Ima	Moment Two:	:	Han	d hygiene before	a sterile proced	dure				
Opportunity     Performed     Opportunity     Performed       Image:	Do	ctors	Nu	rses						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Opportunity	Performed	Opportunity	Performed						
Tot. A=       Tot. A=       Tot. A=       Tot. B=         B divided by A=       B divided by A=       Add each percentage and divide by 2. Moment Two:       %         Moment Three:       Spraying/rubbing hands before touching equipment/records       Other         Opportunity       Performed       Status       Moment Three:       %       X 100 = %										
Tot. A=       Tot. A=       Tot. B=       B divided by A=         B divided by A=       B divided by A=       Second										
Tot. A=       Tot. A=       Tot. A=       Tot. B=         B divided by A=       B divided by A=       Add each percentage and divide by 2. Moment Two:       %         Moment Three:       Spraying/rubbing hands before touching equipment/records       Other         Opportunity       Performed       Opportunity       Performed       Opportunity       Performed       Opportunity       Performed       Opportunity       Performed       Interformed       Opportunity       Performed       Opportunity       Performed       Interformed										
Tot. A=       Tot. A=       Tot. B=       B divided by A=         X 100 =       %       X 100 =       %         Moment Three:       Spraying/rubbing hands before touching equipment/records       Other         Opportunity       Performed       Status <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
Tot. A=       Tot. A=       Tot. A=       Tot. A=       Tot. A=       B divided by A=         B divided by A=       S 100 =       %       X 100 =       %         Add each percentage and divide by 2. Moment Two:       %         Mother       Optors         Mothers       Other         Optors       Mothers       Other         Optors       Optorunity       Performed       Opportunity       Performed </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>										
B divided by A=       B divided by A=         X 100 =       %       X 100 =       %         Moment Three:       Spraying/rubbing hands before touching equipment/records       Other         Opportunity       Performed       Opportunity       Pe	Tot A=	Tot B=	Tot A=	Tot B=	-					
Source Synthesis       Source Synthesis       Add each percentage and divide by 2. Moment Two:       %         Moment Three:       Spraying/rubbing hands before touching equipment/records       Other         Opportunity       Performed       Statue duity	B divided by A	=	B divided by A	=	-					
Add each percentage and divide by 2. Moment Two:       %         Moment Three:       Spraying/rubbing hands before touching equipment/records       Other         Opportunity       Performed       Nurses       Moment Three:       %       %         Moment Four:       Spraying/rubbing hands before touching baby       Nurses       Mothers       Other       Moment Four       %         Opportunity       Performed       Opportunity       Performed       Opportunity       Performed       Opportunity       Performed       Opportunity       Performed       Opportunity       Performed </td <td>X 100 =</td> <td>%</td> <td>X 100 =</td> <td>%</td> <td>-</td> <td></td> <td></td> <td></td>	X 100 =	%	X 100 =	%	-					
Moment Three:         Spraying/rubbing hands before touching equipment/records           Doctors         Nurses         Mothers         Other           Opportunity         Performed         Spraying/rubbing hands before touching baby         Noment Three:         %           Moment Four:         Spraying/rubbing hands before touching baby         Opportunity         Performed		,,,	// 100	bbA	each nercentage	and divide by 2	Moment Two:	%		
Instruction         Opportunity         Performed         State         X 100 =         % X 100 =	Moment Thre	٥.	Spra	ving/rubbing ha	ands before tour	hing equipment.	/records	70		
Opportunity         Performed         Opport	Do	ctors	Nu		Mo	thers	0t	her		
Opportunity       Terrorined       Opportunity       Tot. B=       Tot. A=       Tot. A=       Tot. A=       Tot. B=       B divided by A=       B divided by A=       B divided by A=       Moment Three:       %       %         Moment Four:       Spraying/rubbing hands before touching baby       Voter       Moment Three       %       %         Moment Four:       Spraying/rubbing hands before touching baby       Performed       Opportunity       Performed       Opportunity       Performed       Performed       Opportunity       Performed       Opportu	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed		
Image: state in the state	Opportunity	Feriornieu	Opportunity	Ferformed	Opportunity	Ferformed	Opportunity	Feriornieu		
Image: constraint of the sector of the se										
Image: state in the stat										
Tot. A=       Tot. B=       Tot. A=       Tot. B=       Tot. A=       Dot. A=       B divided by A=       B divided by A=       B divided by A=       B divided by A=       Mathematical and the precent set of the										
Tot. A=       B divided by A=       A       Allo =       %       X 100 =       %       Moment Five:       Doctors       Nurses       Mothers       Opportunity       Performed       Opportunity       Nurse       Nurse       Nurse <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>										
Int. A=       Int. B=	Tet A	T-+ D	T-+ 4	T-t D	T-+ A	T-t D	<b>T</b> _+ A	Tet D		
B divided by A=         X 100 =       %       X 100 =       %       X 100 =       %       X 100 =       %         Moment Four:       Spraying/rubbing hands before touching baby       Moment Three:       %       %         Opportunity       Performed       Opportunity       Nurse       Mothers       Outher       Moment Five       %       X 100 =       %       X 100 =       %       X 100 =       % </td <td>TOT. A=</td> <td>TOT. B=</td> <td>TOT. A=</td> <td>10t. B=</td> <td>TOT. A=</td> <td>TOT. B=</td> <td>TOT. A=</td> <td>10t. B=</td>	TOT. A=	TOT. B=	TOT. A=	10t. B=	TOT. A=	TOT. B=	TOT. A=	10t. B=		
X 100 =%X 100 =%X 100 =%X 100 =%%X 100 =%%Add each percentage and divide by 4. Moment Three%Moment Four:Spraying/rubbing hands before touching babyMoment Three%%DoctorsNursesMothersOtherOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportImage: Spraying/rubbing hands before touching babyPerformedOpportunityPerformedOpportOpportPerformedOpportunityPerformedOpportunityPerformedImage: Spraying/rubbing hands before touching babyImage: Spraying/rubbing hands%X 100 =%Image: Spraying/rubbing handsImage: Spraying/rubbing handsImage: Spraying/rubbing handsImage: Spraying/rubbing hands%Image: Spraying/rubbing handsImage: Spraying/rubbing handsImage: Spraying/rubbing hands%X 100 =%Image: Spraying/rubbing handsImage: Spraying/rubbing hands%Image: Spraying/rubbing handsImage: Spraying/ru	B divided by A	=	B divided by A	=	B divided by A	=	B divided by A=	=		
Add each percentage and divide by 4. Moment Three:     %       Moment Four:     Spraying/rubbing hands before touching baby     Moment Three:     %       Opportunity     Performed     Instant     <	X 100 =	%	X 100 =	%	X 100 =	%	X 100 =	%		
Moment Four:       Spraying/rubbing hands before touching baby         Doctors       Nurses       Mothers       Other         Opportunity       Performed       Opportunity       Inclusion       Inclusion </th <th></th> <th></th> <th></th> <th>Add ea</th> <th>ach percentage a</th> <th>and divide by 4.</th> <th>Moment Three:</th> <th>%</th>				Add ea	ach percentage a	and divide by 4.	Moment Three:	%		
DoctorsNursesMothersOtherOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Constraint of the second s	Moment Four	:	Spra	aying/rubbing ha	ands before tou	ching baby				
Opportunity         Performed         Oppor	Do	ctors	Nu	rses	IVIO	tners	Ot	Dorformed		
Image: constraint of the sector of the s	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed		
Image: constraint of the sector of the s										
$ \begin{tabular}{ c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$										
Image: constraint of the sector of the s										
Image: constraint of the sector of the s										
Tot. A=Tot. A=Tot. A=Tot. A=Tot. A=Tot. B=Tot. A=Tot. A=Tot. A=Tot. B=B divided by A=B divided by A=X 100 =%X 100 =%X 100 =%X 100 =%Moment Five:Spraying/rubbing hards after touching babyMoment Four:%DoctorsNurseMotterOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityImage: Construction of the state of the										
B divided by A=         B divided by A=         B divided by A=         B divided by A=           X 100 =         %         X 100 =         %         X 100 =         %           X 100 =         %         X 100 =         %         X 100 =         %           Add each percentage and divide by 4.         Moment Four:         %           Moment Five:         Spraying/rubbing hards after touching baby         Moment Four:         Ø           Opportunity         Performed         Opportunity         Performed         Opportunity         Performed         Opportunity         Performed         Performed           Opportunity         Performed         Opportunity         Performed         Opportunity         Performed         Opportunity         Performed           Image: Sign Sign Sign Sign Sign Sign Sign Sign	Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=		
X 100 =%X 100 =%X 100 =%X 100 =%Moment Five:Spraying/rubbing hards after touching babyDoctorsNursesMothersOtherOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Colspan="4">Add each percentage and divide by 4.Moment Five:OpportunityPerformedOpportunityPerformedOpportunityPerformedPerformedImage: Colspan="4">OpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Colspan="4">OpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Colspan="4">OpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Colspan="4">OpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Colspan="4">OpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Colspan="4">Image: Colspan="4"Image: Colspan="4">Image: Colspan="4">Image: Colsp	B divided by A	=	B divided by A	=	B divided by A	=	B divided by A=	=		
Add each percentage and divide by 4. Moment Four:       %         Moment Five:       SprayIng/rubbing hands after touching baby       bottop         Doctors       Nurses       Mottop       Performed       Opportunity       Importunity       Importunity       Importunity       Importunity       Importunity       Importunity<	X 100 =	%	X 100 =	%	X 100 =	%	X 100 =	%		
Moment Five:Spraying/rubbing hands after touching babyDoctorsNursesMothersOtherOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Spraying/rubbing hands after touching babyImage: Spraying/rubbing handsOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Spraying/rubbing handsImage: Spraying handsI				Add e	each percentage	and divide by 4.	Moment Four:	%		
DoctorsNursesMottersOthersOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Strain Stra	Moment Five:		Spra	ying/rubbing ha	nds after touch	ing baby				
OpportunityPerformedOpportunityPerformedOpportunityPerformedOpportunityPerformedImage: Image:	Do	ctors	Nu	rses	Mo	thers	Ot	her		
Image: second	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed		
Image: constraint of the system of the sy										
Image: constraint of the systemImage: constraint of the systemI										
Image: Non-StateImage: Non-StateImage: Non-StateImage: Non-StateImage: Non-StateTot. A=Tot. B=Tot. A=Tot. B=Tot. A=Tot. B=Tot. A=Tot. A=Tot. A=Tot. B=Tot. A=Tot. B=Tot. A=Tot. B=B divided by A=B divided by A=B divided by A=B divided by A=B divided by A=X 100 =%X 100 =%X 100 =%Add each percentage and divide by 4.Moment Five										
Tot. A=Tot. A=Tot. B=Tot. B=Tot. A=Tot. A=B divided by A=X 100 =%X 100 =%X 100 =%Add each percentage and divide by 4. Moment Five										
Tot. A=Tot. B=Tot. A=Tot. B=Tot. A=Tot. A=Tot. A=B divided by A=X 100 =%X 100 =%X 100 =%Add each percentage and divide by 4. Moment Five										
B divided by A=       B divided by A=       B divided by A=       B divided by A=         X 100 =       %       X 100 =       %       X 100 =       %         Add each percentage and divide by 4.       Moment Five       %	Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=		
X 100 =         %         X 100 =         %         X 100 =         %           Add each percentage and divide by 4.         Moment Five         %	B divided by A	=	B divided by A	=	B divided by A	=	B divided by A=			
Add each percentage and divide by 4. Moment Five %	X 100 =	%	X 100 =	%	X 100 =	%	X 100 = %			
				bbA	each percentag	e and divide by 4	. Moment Five	%		

Moment Six:	Moment Six: Spraying/rubbing hands after touching equipment/records										
Do	ctors	Nu	rses	Mo	thers	Ot	her				
Opportunity	Performed	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed				
Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=				
B divided by A	=	B divided by A	=	B divided by A	=	B divided by A=	-				
X 100 =	%	X 100 =	%	X 100 =	%	X 100 =	%				
			Add each percentage and divide by 4. Moment Six:								
Moment Seve	n:	Wa	ashing hands aft	er exposure to b	ody fluids						
Do	ctors	Nu	rses	Mo	thers	Ot	her				
Opportunity	Performed	Opportunity	Performed	Opportunity	Performed	Opportunity	Performed				
Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=	Tot. A=	Tot. B=				
B divided by A	=	B divided by A	=	B divided by A	=	B divided by A=	=				
X 100 =	%	X 100 =	%	X 100 =	%	X 100 =	%				
Add each percentage and divide by 4. Moment Seven:											
	Add each mo	ment's percenta	age and divide by	7. <b>Tot</b>	al Score Hand Hy	giene Practice:					

С. На	C. Hand Hygiene Procedure											
1. As	ssess at least 6 individual performances of use of Alcohol	based h	and rub	(ABHR) an	d 3 perfor	mances of	a hand wa	sh				
2. As	2. Assess if possible x2 Mothers (M), Nurses (N) and Doctors (D). Preferably the individual should be unaware of being assessed											
3. M	3. Mark each item- $\checkmark$ or $\thickapprox$ and then total											
NO.	INDICATOR		1.	2.	3.	4.	5.	6.				
1. U	SE OF ABHR Category of pers	son:										
120.	Pump not spray bottle available											
121.	Easily accessible at foot of bed											
122.	3-5mls (palm full) of ABHR used											
123.	Cleans finger tips of each hand first and correct steps											
	followed											
124.	All surfaces of hands cleaned											
125.	Hands allowed to dry											
	То	tals:										
	Divide	by 6										
	X 100 % % % % %											
Add	each % and divide by number of people assessed: To	ot. 1		%								

2. H	AND WASH						
	Category of person:						
1.	Hands kept above elbows throughout wash						
2.	Opens taps with elbows						
3.	Wets hands						
4.	Closes taps with elbows						
5.	Applies liquid soap using elbow						
6.	Cleans hands-each step to a count of 5 as below						
7.	Finger tips of right hand in left palm and visa versa						
8.	Right palm over left dorsem fingers interlocked & visa versa						
9.	Palm to palm fingers interlocked						
10.	Back of fingers to opposing palm with fingers gripped						
11.	Right thumb clasped in left palm and visa versa						
12.	Each wrist clasped in opposite hand						
13.	Wash lasts at least 30secs						
14.	Opens taps with elbows						
15.	Rinses hands thoroughly						
16.	Turns off tap with elbow						
17.	Dries well with paper towels						
	Totals:						
	Divide by 16						
	X 100	%	%	%	%	%	%
Add	each % and divide by number of people assessed: Tot. 2		%				
Add 1	Tot. 1 &2 & divide by 2Total Hand Hygiene Procedure						

HANDWASHING COMBINED SCORE										
Handwashing Facilit		%								
Hand Hygiene Practi		%								
Hand Hygiene Proce		%								
Add above scores an	d divide by 3 to get final score for Hand	l Hygien	e compliance	FINAL SCORE:		%				
Assessed By:										
Sign:	1	Print:			Desig:					

mments/Gaps Identified:
tion Plan:



health Department: Health PROVINCE OF KWAZULU-NATAL

## Neonatal Cleaning Checklists

Unit:															Mo	nth a	nd Ye	ar:														
Complete daily. Cleaner	ticks (	each	com	pleted	d task	< &sig	ns on	ce all	com	pletec	l. Sup	erviso	or sigi	ns tha	t all t	asks l	have	been	comp	oleted	satis	facto	rily. C	Displa	iy in p	lastic	sleev	/e in s	luice	room	۱.	
	Day	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.
Daily Cleaning Duties					_	-										-										•						
1. Clean floors Non clin	ical																													ļ <sup> </sup>		
Clean floors-	AM																													<sup> </sup>		
Clinical areas	PM					_																								<sup> </sup>	$\mid$	
2. Damp Dusting- Trol	leys																													<sup> </sup>	$\mid$	
Counter	tops																													<sup> </sup>	$\mid$	
Ch	nairs																													<sup> </sup>	$\mid$	
Door Han	dles																													<sup> </sup>		
Window	sills																													<sup> </sup>		
<ol> <li>Clean all basins, clean &amp; refill</li> </ol>	AM																															
soap dispensers & paper towels	PM																															
	09																															
	12																															
4. Remove clinical	15																															
waste from	18																															
bedsides	21																															
	06																															
Remove and seal <b>clir</b> waste boxes if 2/3rds	n <b>ical</b> s full																															
Remove and seal sha	arps																															
containers when 2/3rds	s full																															
Remove general waste b	bags																														í I	
from all bins & reline	bins																															
Tie general waste bag	gs in area																															
5 Remove soiled																														[]		
linen	PM				+																										┢──┤	
6. Terminal cleaning of				1		1	1				1	1													1		1					
incubators /equip - I	PRN																															
Cleaner sign																																
Supervisor sign																																

Weekly Cleaning				Month and Year:	
	Week 1	Week 2	Week 3	Week 4	Week 5
1. High Dusting- Curtain rails					
Picture /door frames					
Gabler rails					
Open shelves					
Window blinds					
2. Clean general equipment not					
in daily use					
3. Clean & tidy-Equipment, linen					
& general store rooms					
Tea lounge					
Milk room/kitchen					
4. Clean skirting boards					
5. Clean doors					
6. Scrub wringer machine					
7. Clean/scrub waste bins					

Monthly Cleaning	
1. Defrost and clean Refrigerator	
2. Wipe out and tidy all cupboards	

<ol><li>Wipe out and tidy all cupboards</li></ol>		
Quarterly Cleaning	Due Date	Completed
1. Clean windows		
2. Clean- Light fixtures		
Air-conditioning vents		
Ceiling fans		

6 monthly Cleaning	Due Date	Completed
1. Strip and polish floors		
2. Clean walls/vertical surfaces		
3. Clean ceilings		
4. Remove and clean curtains		



#### 8. CONFIRMATION OF TRAINING

Name of institution:\_\_\_\_\_

Ward:\_\_\_\_\_

Trainer:\_\_\_\_\_

Guideline Title: Infection Prevention and Control in the Neonatal Unit

The signature below serves as confirmation that the staff member has been trained and understands the content of this guideline

Date	Name	HPCSA/SANC No.	Signature