



# Safe surgery – ICU, NICU IPC standards

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Preventing and controlling transmission of COVID 19 infection

# Outline

- IPC Considerations in the NICU
- Care of a neonate born to Covid 19 positive mother
- PPE consideration for HCWs in the NNU

# Introduction

- Neonates in healthcare institutions are at risk of infection, especially the neonates in the NICU
- Colonized neonates are the **major source of infection**
- Microorganisms are transmitted between neonates on **hands, equipment or patient care supplies**
- Result: further colonization, infection, outbreaks; increase in morbidity and mortality



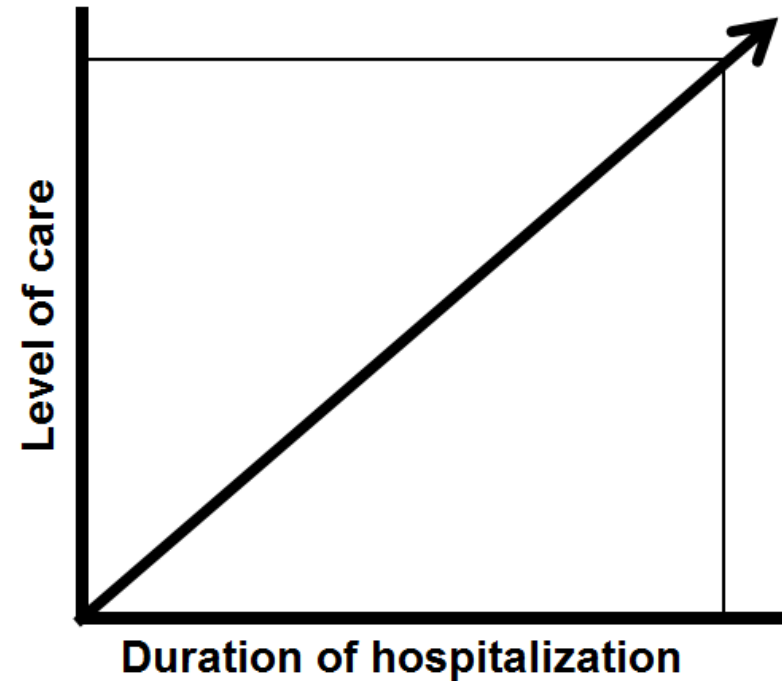
# What IPC factors must be considered?

- NNU are busy places
- Prems may remain hospitalised for long periods
- Staff have to access healthcare areas and work safely
- Equipment and supplies must move in and out safely
- Medical devices and instruments have to be processed
- The environment must remain clean
- Dirty or used items removed
- Clean and sterile items brought in to the unit



# Neonates are particularly vulnerable to infection

- Premature / low birth weight
- Underlying medical conditions
- Invasive procedures
- Invasive and indwelling devices
- Immature immune system
- Fragile and permeable skin
- Long hospital stay
- Endemic pathogens in the neonatal units
- Exposure to broad spectrum antibiotics
- Sometimes poor infection control practices



# Breastfeeding and Covid 19

- Active COVID-19 (virus that can cause infection) has not, to date, been detected in the breastmilk of any mother with confirmed/suspected COVID-19. It appears unlikely, therefore, that COVID-19 would be transmitted through breastfeeding or by giving breastmilk that has been expressed by a mother who is confirmed/suspected to have COVID-19. Researchers continue to test breastmilk from mothers with confirmed/suspected COVID-19

# IPC Best Practices in the Neonatal Unit

- For each patient contact: **Hand hygiene**, gloves, apron (contact precautions)
- Clean equipment – 12-hourly decontamination while in use and also between neonates
- Clean environment (no clutter)
- Prevent contamination of clean and sterile supplies before use
- Correct clean and aseptic procedures
- Isolate neonates colonized or infected with significant pathogens
- Limit the transfer of neonates between different wards and rooms in order to limit their exposure to pathogens

All of these actions must occur in an **ENVIRONMENT** and with the necessary **ENGINEERING SUPPORT** that helps the healthcare worker to be compliant with the expected standards of care



# Provision for hand hygiene

Alcohol hand rub at the point of care



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# Functional spaces: Patient rooms



- Space between beds:
  - 3m in NICU
  - 2.4m in special care
- Oxygen points, medical air, suction, electrical points, UPS



courtesy Marina Aucamp

# Functional spaces: Equipment cleaning room

- To clean clinical and patient care equipment (incubators, bassinets, IVACs, CPAP machines)
- Requirements: deep sink, work surface



courtesy Marina Aucamp

# Functional spaces: Ward milk kitchen

- Sink to clean milk containers
- Refrigerators for expressed breast milk and formula milk
- Work surface to pasteurise milk



courtesy Marina Aucamp



# Functional spaces: Accommodate Kangaroo Care moms

- Storage for personal belongings outside patient room
- Bathroom and toilet facilities
- Place to eat – ward kitchen
- Place to express breast milk/do breastfeeding



# Functional spaces: Environmental cleaning room



- Sink to clean cleaning equipment
- Slop hopper
- Work surface
- Storage space for cleaning trolleys
- Hand washbasin
- Space to hang mops, floor sweeps, cleaning cloths

# Requirements for an NICU Isolation Facility (1)

Requirement	Details	Importance
<b>Bed number</b>	2, for cohorting if necessary	Preferred
<b>Space</b>	Minimum 2.5 meters between beds	Essential
<b>Isolation room door</b>	Clear glass door, button activated or sliding	Preferred
<b>Ventilation</b>	Neutral pressure	Essential
<b>Water supply</b>	Water-free zone/no sinks	Preferred
<b>Alcohol hand rub</b>	Wall mounted outside sliding door Wall-mounted/ free-standing in room	Essential
<b>Cleaning equipment</b>	1 x dedicated cleaning cart	Essential
<b>Work surface</b>	X 2, inside room	Preferred
<b>Bedside cabinets</b>	X 2 cabinets with drawers, kept outside room for PPE, patient notes/files	Essential

# Requirements for an NICU Isolation Facility (2)

Requirement	Details	Importance
<b>Storage/Resus trolleys</b>	X 2, kept outside room	Essential
<b>Equipment</b>	Sufficient equipment so that there is no sharing of items	Essential
<b>Terminal cleaning</b>	Hydrogen peroxide vapour machine OR UV light disinfecting machine	Preferred



# Covid-19 and the Neonate

- For the neonates who are admitted to a NICU soon after birth, these neonates are not exposed to any symptomatic visitors/healthcare providers.
- With universal masking of visitor and healthcare providers as well as hand hygiene, a baby hopefully would not acquire COVID-19 at the hospital.
- On the other hand a baby might have been exposed to SARS-CoV-2 virus during delivery thus these neonates need to be put on contact and droplet precautions in the NICU as they might be in the incubation period for the infection.



# Neonate born to Mother with Confirmed or Suspected COVID-19

IPC Considerations:

## **CONTACT & DROPLET PRECAUTIONS**

- if no resuscitation/AGMP is required (procedure mask with visor or procedure mask with faceshield/goggles, gown and gloves)
- **use N95 mask** if resuscitation/**AGMP\*** required. (Resuscitation team to wear N95mask, face shield/goggles, gown and gloves)
- Contact site IPC about delivery

# IPC Care of the Suspected or Covid-19 +ve mother

- Delay skin-to-skin contact for neonate until mother is able to do hand hygiene, don mask
- Always have mother perform hand hygiene and wear a procedure mask before holding baby until mother is known to be negative for COVID-19 and other infectious causes for her symptoms

# If covid 19 +ve mother is still in hospital

- Maintain contact & Droplet Precautions
- Do not discharge baby prior to 24 hours of age
- Consider virtual/phone pediatric consult
- Mother/Family positive for COVID-19 or have acute infectious symptoms cannot visit NICU.
- Consult with local IPC when there is a COVID-19 exposure, as defined by the [Essential Visitor Screening Questionnaire](#) prior to entering NICU.
- All maternal patients should be screened for new/changed symptoms using the [COVID-19 Symptom Identification and Monitoring tool](#), once every 12 hours. Tool N/A for neonates.
- Arrange for public health and clinician follow-up post-discharge – require close community follow-up

# Feeding neonates born to Mother with Confirmed or Suspected COVID-19 Infection

- Breast milk is the healthiest source of nutrition for most neonates. COVID-19 virus has not, to date) been detected in the breastmilk of any mother with confirmed/suspected COVID-19(WHO, April 28, 2020 FAQ). However, there are many unknowns about COVID-19 and each family has its own context to consider.
- Families should participate in the decision to use breastmilk for infant feeding with the support of the healthcare providers.
- During *temporary separation*, mothers who intend to breastfeed should be encouraged to express their breast milk to establish and maintain milk supply.

# References

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