

ECHO Summary, 19/September/2025

Session Title: HOB Session: Infection Prevention and Control in the NICU

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Areas Covered

- Implementation and Strict Adherence to Foundational IPC Practices, Primarily Hand Hygiene
- Meticulous Control of Equipment, Procedures, and Medical Waste:
- Establishing a Supporting Organizational Structure and IPC Culture

ECHO Session Panelists:

Experts: Dr. Kiconco Gloria, Atucungwire Judith, Dr. Dedan Okello

Patient Case Presenters: Dr. Abolo Proscovia

Moderator: Dr. Kigozi Yusuf

Infection Prevention and Control in the NICU

Infection Prevention Control (IPC) measures are a collective effort involving doctors, nurses, cleaners, security personnel, and others.

Epidemiology

- Newborn infections are a significant contributor to newborn mortality in Uganda.
- The current newborn mortality rate in Uganda is reported to be **still high at 22** per 1,000 live births. The national goal is to reduce this rate to **less than 12 per 1,000 by 2030**

- Statistics vary by region, but at **Kawempe National Hospital**, approximately **46% of babies** in the newborn care unit are reported to have infections.

Risk Factors

- **Overcrowding** (of babies, mothers, caretakers, healthcare workers, and students) within the unit
- **Non-compliance to IPC practices**, especially hand hygiene
- **Lack of essential facilities**, such as hand washing facilities, soap, or sanitizers
- **Lack of sterile equipment** required for procedures, like inserting a Umbilical Vein Catheter
- **Unit layout** may contribute, for example, if babies suspected of having sepsis are not isolated
- **Long length of stay** in the NICU
- **Frequent procedures** introduce infection
- **Contaminated catheters** or IV lines
- **Reusing single-use equipment**
- **Preterm infants more susceptible**

Key elements of IPC

1. HAND HYGIENE

- ❖ Hands are the main transmission of infection in healthcare settings.
- ❖ Good hand hygiene is the **most effective single measure** for preventing infection transmission.
- ❖ Remember and adhere to the **five moments of hand hygiene** (before and after touching the patient, before and after a procedure, and after touching patient surroundings).
- ❖ Complete hand washing using clean water and including all areas including under the nails
- ❖ Ensure easy and continuous access to soap and water and alcohol based gels in your units.
- ❖ Provide education regularly on hand hygiene for healthcare providers, patients and visitors.
- ❖ Observe hand hygiene culture and give real-time feedback.

2. USE OF PERSONAL PROTECTIVE EQUIPMENT

- ❖ Gloves, masks and protective clothing should be available in your units.
- ❖ These should not be shared between people.

3. RESPIRATORY HYGIENE AND COUGH ETIQUETTE

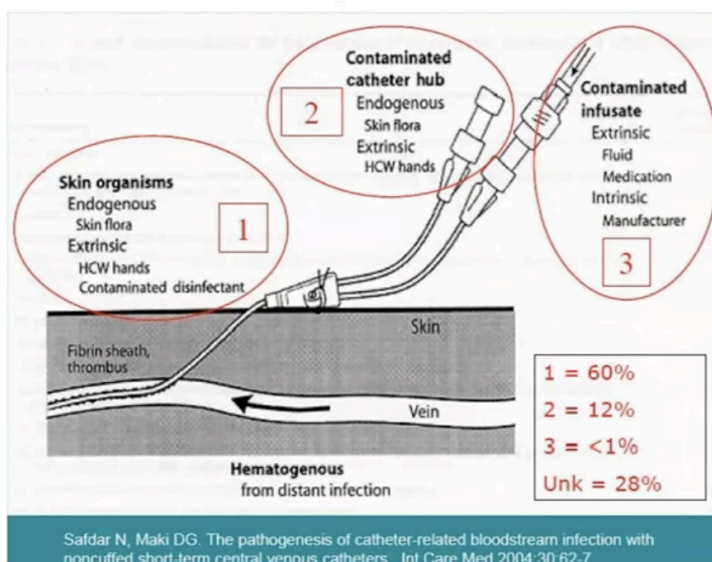
- ❖ Cover mouth/nose when coughing or sneezing
- ❖ Use tissues and dispose immediately
- ❖ Perform hand hygiene immediately after contact with respiratory secretions
- ❖ Staff with a respiratory infection should not be allowed in the unit

4. SHARPS SAFETY

- ❖ Do not recap needles by hand
- ❖ Dispose directly into a sharps container
- ❖ Replace container when 2/3rds full

5. SAFE INJECTION PRACTICES

- ❖ Poor practices with insertion and ongoing care lead to cannula associated bloodstream infections (see illustration below)
- ❖ Do not reuse or share injection supplies.
- ❖ Make sure medications and infusion sets are properly labeled.



6. CLEANING OF EQUIPMENT AND THE ENVIRONMENT

- ❖ Single use equipment should not be reused eg oxygen cannula.
- ❖ **Reuse of oxygen cannula is leading caus of neonatal HAI(hospital-acquired infections) in sub saharan Africa**
- ❖ Those designed for re-use should be disinfected per protocol
- ❖ **Reusable medical equipment processing:**

Step 1 Pre disinfection cleaning in clean water and soapy water

Step 2 Disinfection or sterilization (submerge in a disinfectant) or autoclaving

Step 3 Post disinfection includes rinsing in clean, boiled water. Drying and storage: Air dry or dry with sterile gauze and store in covered containers.

See example below of the 4 bucket system:

The 4 bucket system



The 0.5% chlorine should be prepared every day

- ❖ **Sterilization** is preferred over disinfection as it destroys all microorganisms, including endospores.
 - ❖ Disinfecting solutions
 - 0.5% chlorine solution: Soak for 20 minutes with at least 2.5cm of liquid above the equipment. Use sterilized forceps to handle the equipment.
 - To make 0.5% chlorine
 - Parts of water for each part bleach = $(\% \text{chlorine in liquid bleach} / 0.5) - 1$
 - This solution should be discarded after 24 hours.
 - 2.4% activated glutaraldehyde (Cidex): more toxic so use PPE for eyes, nose.
 - ❖ Clean the incubator and other equipment like thermometer, stethoscope, pulse oximeter, wires. Can use 70% alcohol for this.
 - ❖ Have a cleaning checklist to make sure the environment is cleaned regularly.
7. **WASTE MANAGEMENT**
- ❖ **Includes waste segregation, transport, storage and disposal.**
 - ❖ **Guidelines** currently recommend three bins: **Red** (highly infectious/soiled waste), **Black** (non-infectious waste), and **Brown** (pharmaceuticals).
 - ❖ Bins should have liners and be emptied before they are full.



8. **PROPER UNIT ORGANIZATION:** This can include;
- ❖ Changing street clothes and shoes
 - ❖ Limiting visitors and students to prevent overcrowding
 - ❖ Proper spacing between beds, ensuring a minimum of **1 to 3 meters of space** between beds or incubators.
 - ❖ Infants with known infectious disease should be **isolated**.
 - ❖ Screen visitors for signs of illness.
 - ❖ Handwashing upon entering the unit

Summary

IPC adherence is fundamentally a **discipline** and a culture that must be instilled in every staff member.



Collaborating Partners

1. [Ministry of Health of the Republic of Uganda](#)
2. [Seed Global Health](#)
3. [Techies Without Borders](#)

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