

# ECHO Summary, 19/September/2025

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

**Summary Author:** Faith Ibu, MD

Edited by: Amy Bridges, MD

### **Disclaimer:**

*The information presented in this summary is based on the presentation given by the panelists and is intended for general informational purposes only. The authors and collaborating partners do not accept responsibility for any outcomes resulting from the implementation of treatments outlined in this document. It is strongly recommended that individuals verify the information against their national guidelines and seek professional advice before making any decisions related to the content presented herein.*

### **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

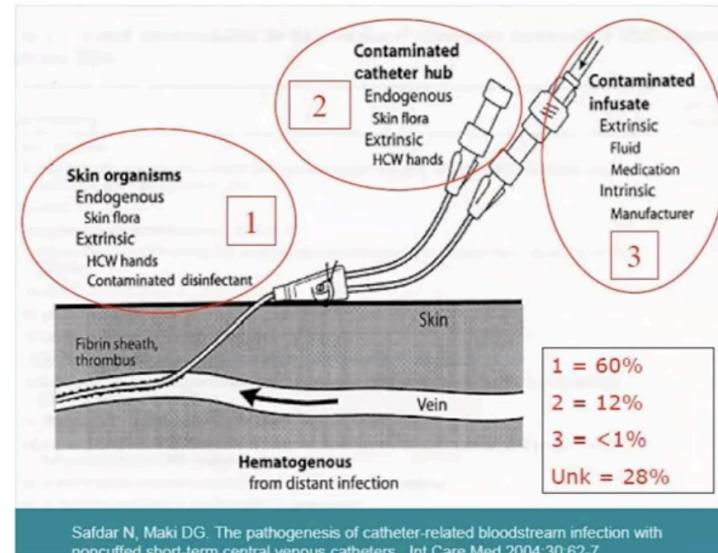
- ❖ Cover mouth/nose when coughing or sneezing
- ❖ Use tissues and dispose immediately
- ❖ Perform hand hygiene immediately after contact with respiratory secretions
- ❖ Staff with a respiratory infection should not be allowed in the unit

#### 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 = (%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.

## Clarity on New Waste Management Guidelines

To ensure proper segregation and compliance with the updated waste management standards, please take note of the following waste bin color codes and their designated uses:



### RED BIN

#### Infectious and Highly Infectious Waste

- Soiled gauze and cotton
- Used gloves
- Giving sets
- Body parts or anatomical waste
- Any material contaminated with blood or other body fluids



### BLACK BIN

#### Non-Infectious Waste

- Food leftovers
- Paper waste
- Packaging materials
- Cardboard boxes



### BROWN BIN

#### Pharmaceutical and Chemical Waste

- Vials
- Laboratory reagents
- Radiology chemicals

### 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](#)
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*Please email Dr. Amy Bridges with comments or questions at [bridgesa@umsystem.edu](mailto:bridgesa@umsystem.edu), or message via WhatsApp at +1 234 380 3635.*