

John Feister, MD<sup>1</sup>

<sup>1</sup>Pediatrics, Northwestern University Feinberg School of Medicine; Lurie Children's Hospital

## BACKGROUND

- Prematurity-related complications are the leading cause of neonatal mortality worldwide
- A major contributor of neonatal mortality due to preterm birth is respiratory distress syndrome (RDS).
- Bugando Medical Center (BMC) is a tertiary referral center for the northwest region of Tanzania.
- BMC has access to a limited number of ventilators, bubble CPAP, and surfactant.

## OBJECTIVE

We sought to create a simulation to teach the identification and initial stabilization of an outborn baby with RDS using the resources available to providers at BMC.

## METHODS

- Informal needs assessment performed in conjunction with BMC staff to determine opportunities for simulation development
- The BMC NICU was observed to understand the available resources and current practices
- The simulation was designed using recommendations from the European Consensus Guidelines for Management of RDS and the WHO Pocket Book of Hospital Care for Children.

## MATERIALS



Figure 1: NeoNatalie mannequin



Figure 2: Pulse oximeter

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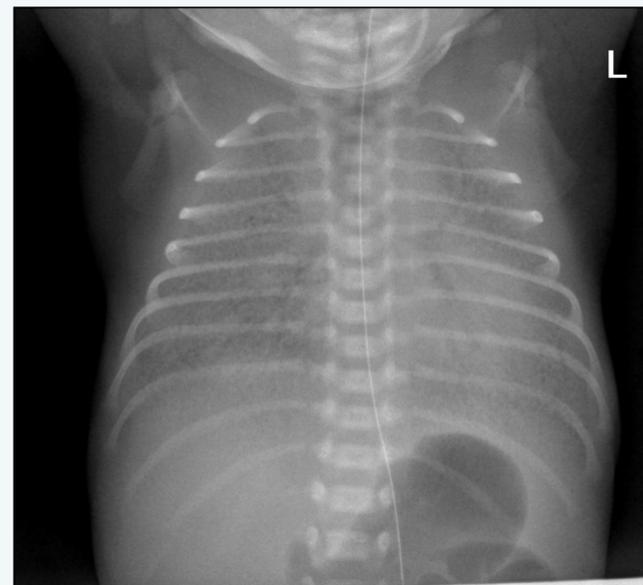


Figure 3: Sample chest x-ray of RDS. Note underinflated lung fields, bilateral granular opacities, & air bronchograms.



Figure 4: Bubble CPAP machine

## KEY LEARNING POINTS

- Recognize infant in respiratory distress and initiate initial evaluation and stabilization (obtain SpO<sub>2</sub>, consider CPAP, start workup – CXR, and CBC)
- Recognize that respiratory distress in an infant may not just be sepsis and start and adjust respiratory support
- Interpret CXR and lab values as RDS
- Recognize that treatment of RDS requires surfactant as well as invasive ventilatory support

## FUTURE DIRECTIONS

- Virtual or in-person implementation of the simulation to elicit feedback with further optimization
- Testing to assess simulation effectiveness
- Pre and post testing to assess knowledge retention
- Monitoring uptake of RDS best practices within BMC after establishment of simulation curriculum