



# Implementation of MIST at CIUSSSE-CHUS

Centre intégré universitaire de santé et de services sociaux de l'Estrie - Centre hospitalier universitaire de Sherbrooke

Poster ID LH 4



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### Aim

Administering surfactant through minimally invasive surfactant therapy (MIST) for newborns with Respiratory Distress Syndrome (RDS) who require surfactant.

### Importance

- At CIUSSSE-CHUS NICU, surfactant is exclusively administered via an endotracheal tube.
- MIST is a safe and accessible method that has been described for several years.
- MIST is an intervention that has demonstrated reduced mortality and BDP in premature infants less than 33 weeks.
- Our BDP rate: 55% (2020), 74% (2021) <29 weeks,</li> surpassing the CNN average.
- Our NICU aims to adapt its practices to maintain a high standard of care quality.

## Driver Diagram/PDSA

#### **Objective:**

Increase from 0 to 40 percent the number of newborn > 29 weekers who needed surfactant therapy by MIST.

MIST Litterature revision

Creation

of tools

Neonatal Staff Discussion: April 2023

Journal club: Nov 2022

Revision of the method of care and Procuring Appropriate Equipment: March 2023

Creation of a pre-printed prescription form: April 2023

Information and training Staff informed by PowerPoint MD, RN, RT (end April 2023)

Practical training sessions on mannequins (April 27-28 2023) Dedicated team: Physicians (MDs)

# Premedication: Atropine 20mcg/kg + Ketamine 0,5 mg/kg or Fentanyl 1mcg/kg Curosurf<sup>MD</sup> Materials: CPAP − CMAC - Surfcath<sup>TM</sup> Data/Results

#### May 1 – Dec 31, 2023 271 admissions 18 (35%) 51 had RDS Did not receive surfactant **INDICATIONS** 33 (65%) >29 weekers received surfactant NIPPV with spontaneous breathing 21 (64%) did not have MIST criteria • FiO, between 30-40% Outborn: 9 12 (36%) Chest X-ray with clinical signs of RDS PNT:2 met MIST criteria Fi02 >40%: 3 < 29 weekers : 7 CONTRAINDICATIONS 7 (58%) 5 (42%) Air leak received MIST Missed opportunities Need for intubation Hypercapnia or respiratory acidosis 5 SUCCESSFUL (71%) 2 UNSUCESSFUL (29%) Congenital anomalies

### Lessons Learned/Next stage/Plan

- The technique is safe and effective for infants ≥ 29 weeks GA.
- Familiarize ourselves with ketamine as an analgesic agent, including its duration of action and optimal dosage (1 or 2 doses).
- Expand our inclusion criteria:

Hemodynamic instability

• 27-28+6 weeks from February to June 2024, then 25-26+6 weeks from July to December 2024

Adverses events (4)

Apnea-PPV(3)/Desat (1)

- Consider MIST during transportation
- Conduct a MIST audit in 6 months.
- Review our BDP rates in 1 year.

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deep desaturation-IET

difficulty visualizing vocals cords