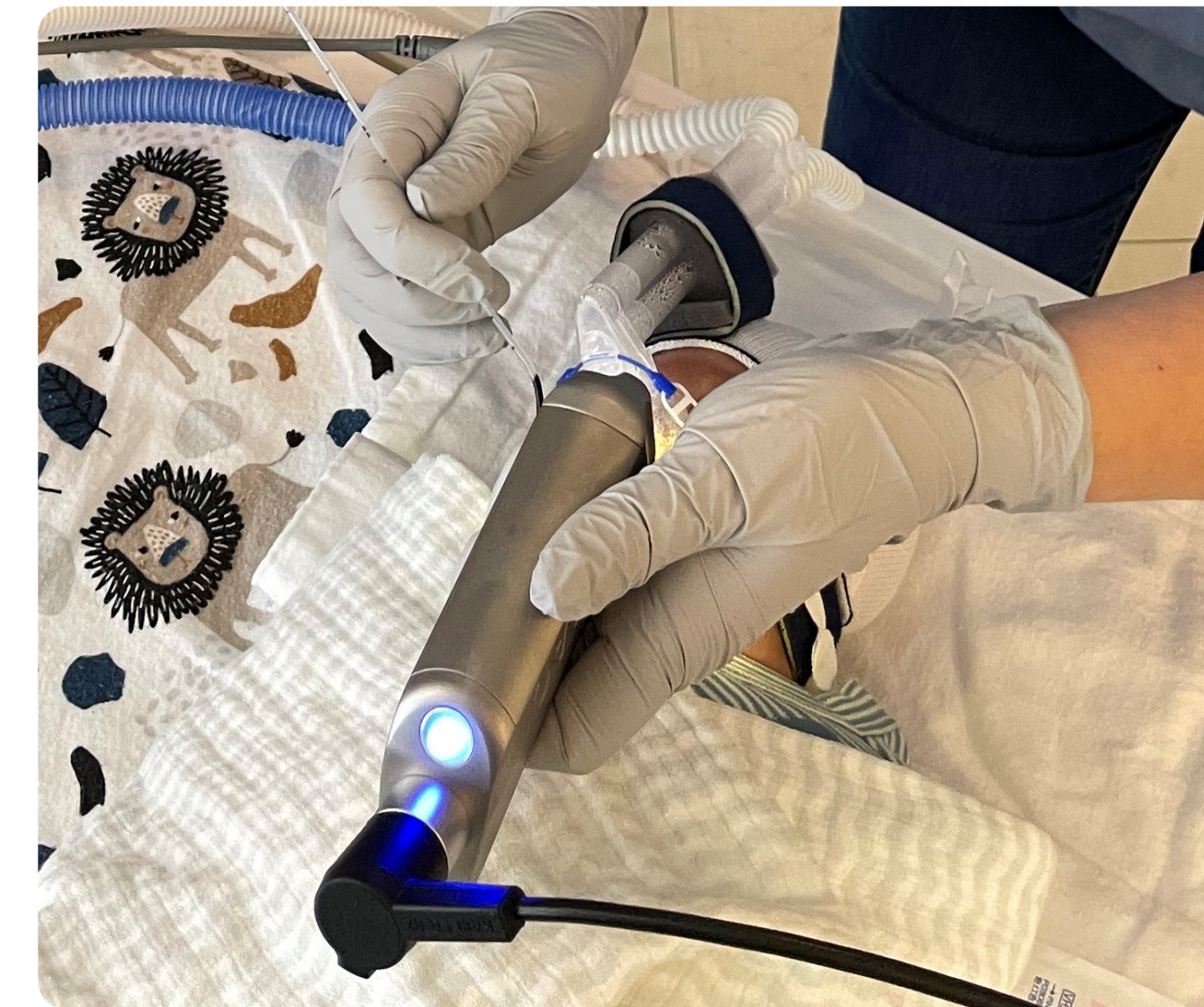


Implementation of MIST at CIUSSE-CHUS

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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 CIUSSE-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, 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 Literature revision

Journal club : Nov 2022

Neonatal Staff Discussion: April 2023

Creation of tools

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^{MD}

Materials:

- CPAP – CMAC - SurfcatchTM

Data/Results

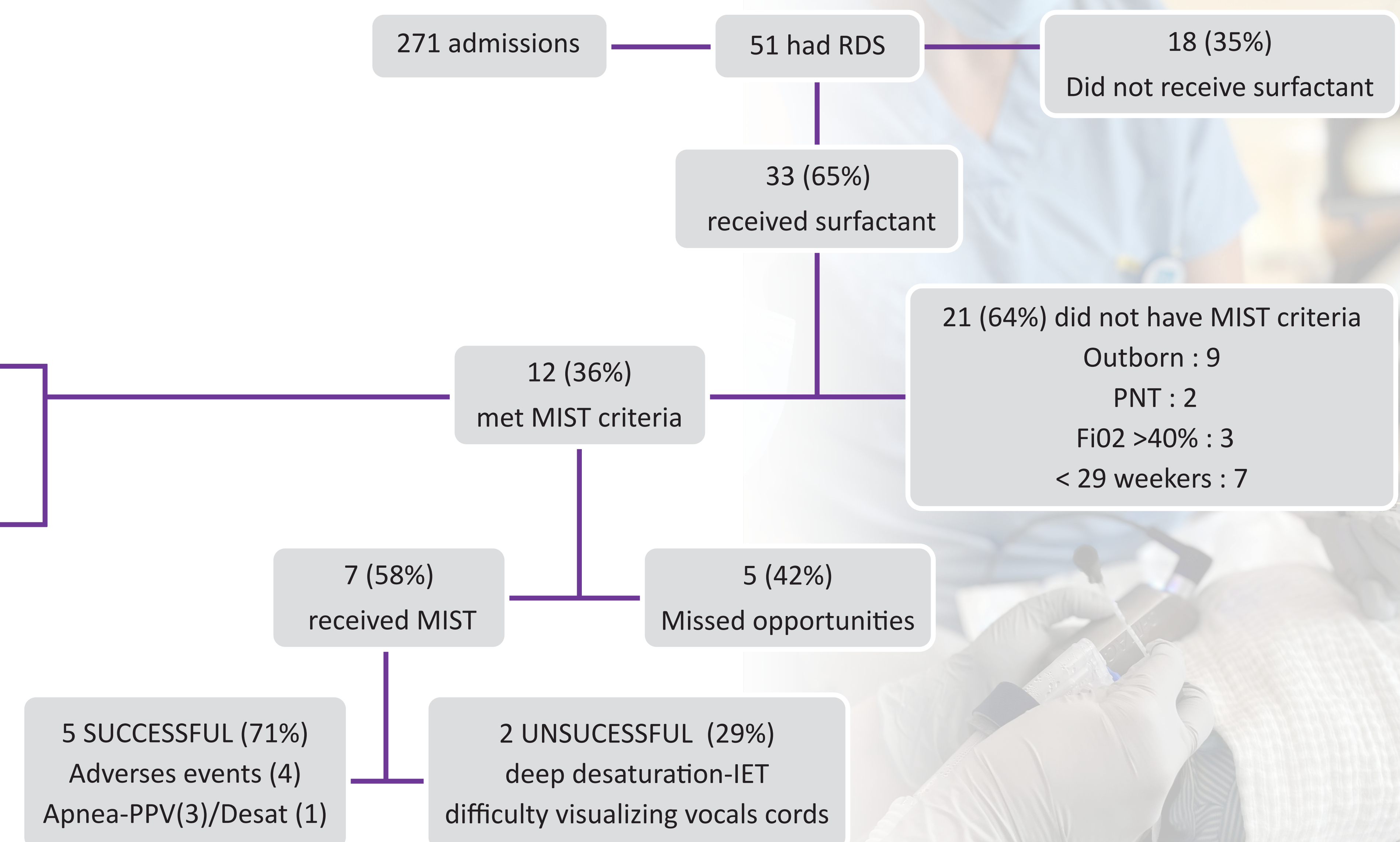
May 1 – Dec 31, 2023

INDICATIONS

- >29 weekers
- NIPPV with spontaneous breathing
- FiO₂ between 30-40%
- Chest X-ray with clinical signs of RDS

CONTRAINDICATIONS

- Air leak
- Need for intubation
- Hypercapnia or respiratory acidosis
- Congenital anomalies
- Hemodynamic instability



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:
 - 27-28+6 weeks from February to June 2024, then 25-26+6 weeks from July to December 2024
 - Consider MIST during transportation
- Conduct a MIST audit in 6 months.
- Review our BDP rates in 1 year.