

Reducing Cold Stress in the NICU: A Quality Improvement Project

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AIM

Objective: To maintain normal body temperature, 36.5°C – 37.5 °C in 90% of inborn infants (GA ≤ 32 weeks gestation and/or birth weight ≤ 1500g) during the first 12 hours of life.

Timeframe: October 2023 - November 2024.

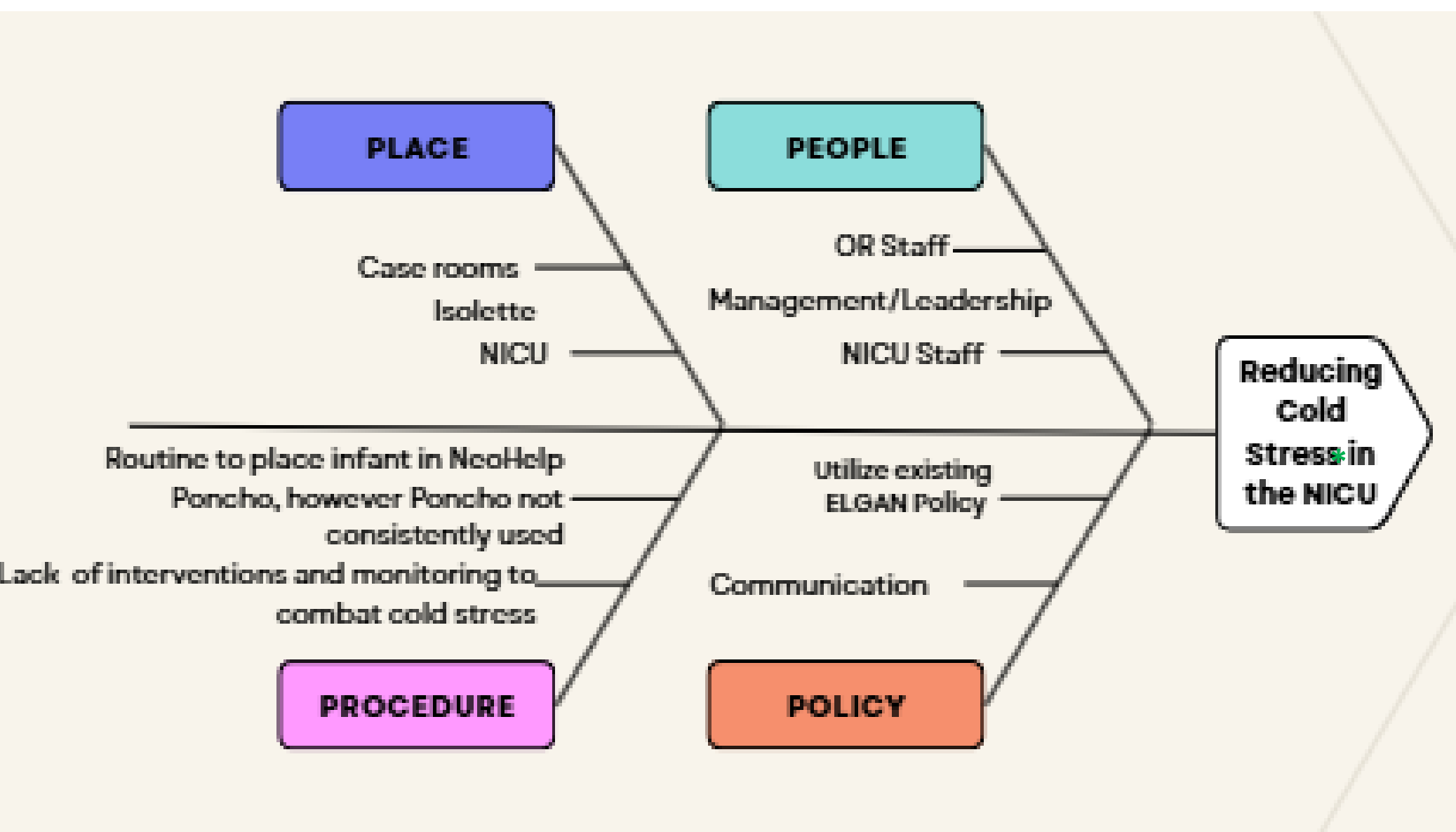
PRIMARY & SECONDARY DRIVERS

PRIMARY DRIVERS:

- Best practices:** Very low-birth-weight infants have underdeveloped temperature regulation, which makes them more susceptible to cold stress. Special care must be implemented to ensure normal body temperatures are maintained.
- Awareness:** Cold stress is associated with significant morbidity and mortality, including an increased risk of respiratory distress, metabolic acidosis, hypoglycemia, reduced surfactant efficacy, and fluid retention.
- Site-specific data:** Local data revealed that most infants were cold upon admission with temperatures less than <36.5°C in comparison to national data.

SECONDARY DRIVERS:

- Staff education
- Strategic implementation of temperature management tools



PDSA CYCLE 1

October 2023 to April 2024



1. PLAN

- Build working group
- Identify driving & resisting forces
- Clarify aim statement
- Develop audit tool



2. DO

- Conduct literature review analyzing common practices
- Order chemical warming mattresses and use at delivery
- Increase the number of NeoHelp Ponchos
- Collaborate with L&D staff to ↑ OR temp
- Educate NICU staff and roll out QI project
- Start audit



3. STUDY

- Analyze data
- Identify why poncho and warming mattress are not utilized consistently
- Note: Or room temp increase not achieved
- Results indicated babies are the coldest during first hour of life



4. ACT

- Share audit results with staff & leadership
- Begin PDSA Cycle 2

PDSA CYCLE 2

April 2024 to September 2024



1. PLAN

- Identify sustainable solutions to ↓ cold stress in first hour of life



2. DO

- Amend audit tool to capture why NeoHelp poncho is not being used
- ↑ number of chemical warming mattresses available at delivery & during procedures
- Re-educate staff on changes made to QI project, underscoring value of interventions



3. STUDY

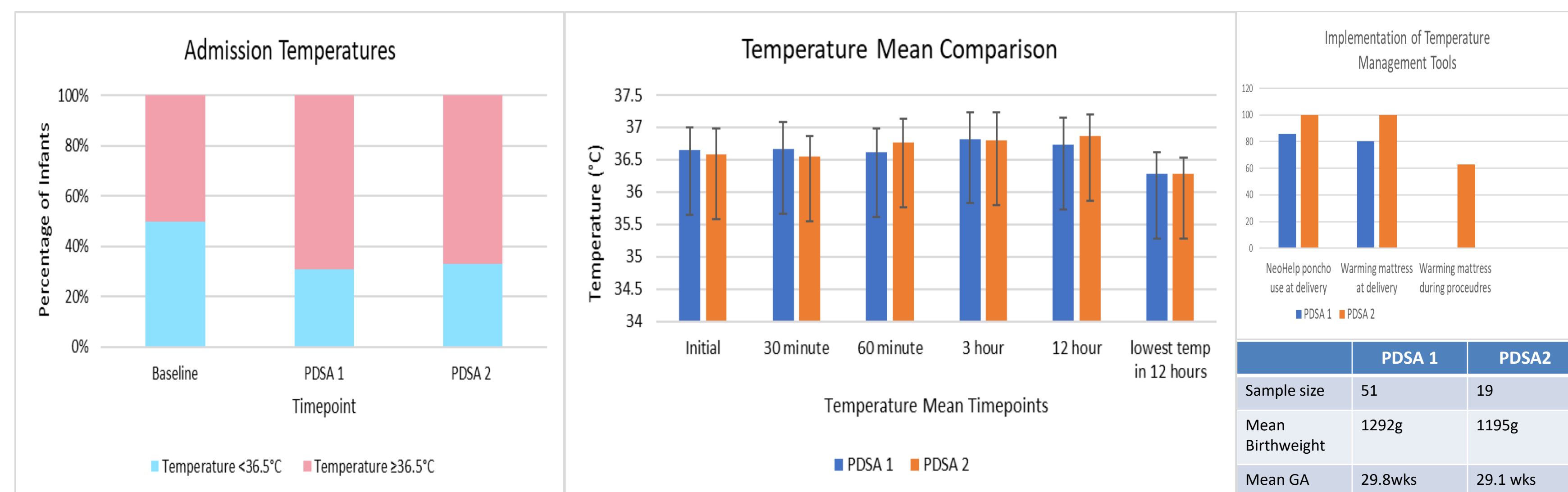
- Analyze data
- Evaluate interventions
- Inconsistent and inaccurate temperature probe placement revealed



4. ACT

- Share audit results with staff and leadership
- Create plan for PDSA Cycle 3

RESULTS



NEXT STEPS: PDSA CYCLE 3

- Educate staff on proper temperature probe placement and initiate 15 minutes of age temperature to combat cold stress
- Increase the use of warming mattresses during procedures
- Ongoing discussion regarding increasing OR temperature