



Singapore Healthcare Management 2024

Evaluating the effectiveness of ThermoCare within the first 2 hours of life in newborns at Raffles Hospital (RH)

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Introduction

Neonatal hypothermia is characterized by a deviation from normal body temperature, with the newborn's temperature falling below 36.5°C. This decline in body temperature over time can lead to various physiological challenges, including increasing risk of respiratory distress, reduced cardiac output, metabolic acidosis, and hypoglycemia.

Hypothermia is a condition that requires immediate correction. The significant number of infants hypothermic at birth and within the 1st 2 hours of life triggered the implementation of ThermoCare. ThermoCare supports maintenance of normothermia and reduces NICU admissions as a result of hypothermia. It also supports holistic care and transition of the infant to extrauterine life.

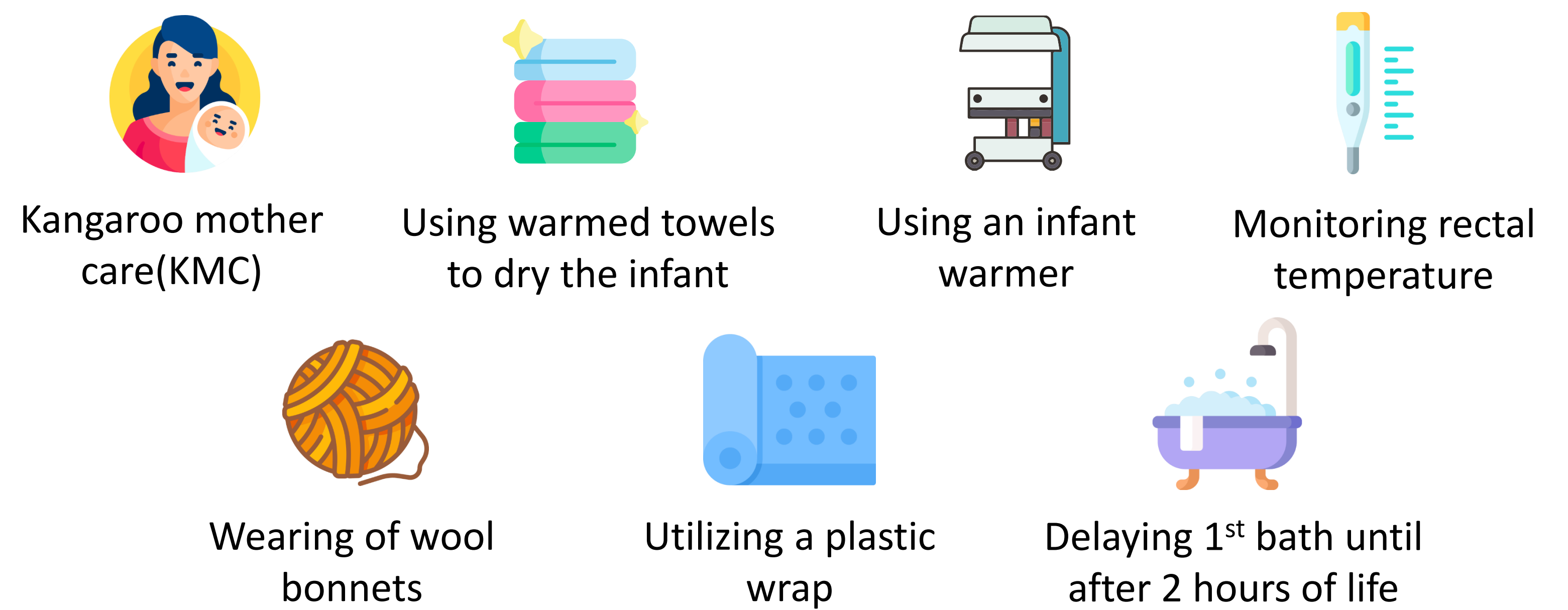
Objectives

At RH, a total of 22% and 13% of newborns were noted to have neonatal hypothermia at birth and 2 hours of life respectively.

Hence, this project is to evaluate the effectiveness of maintaining normothermia within the first 2 hours of life and to prevent neonatal hypothermia using ThermoCare intervention.

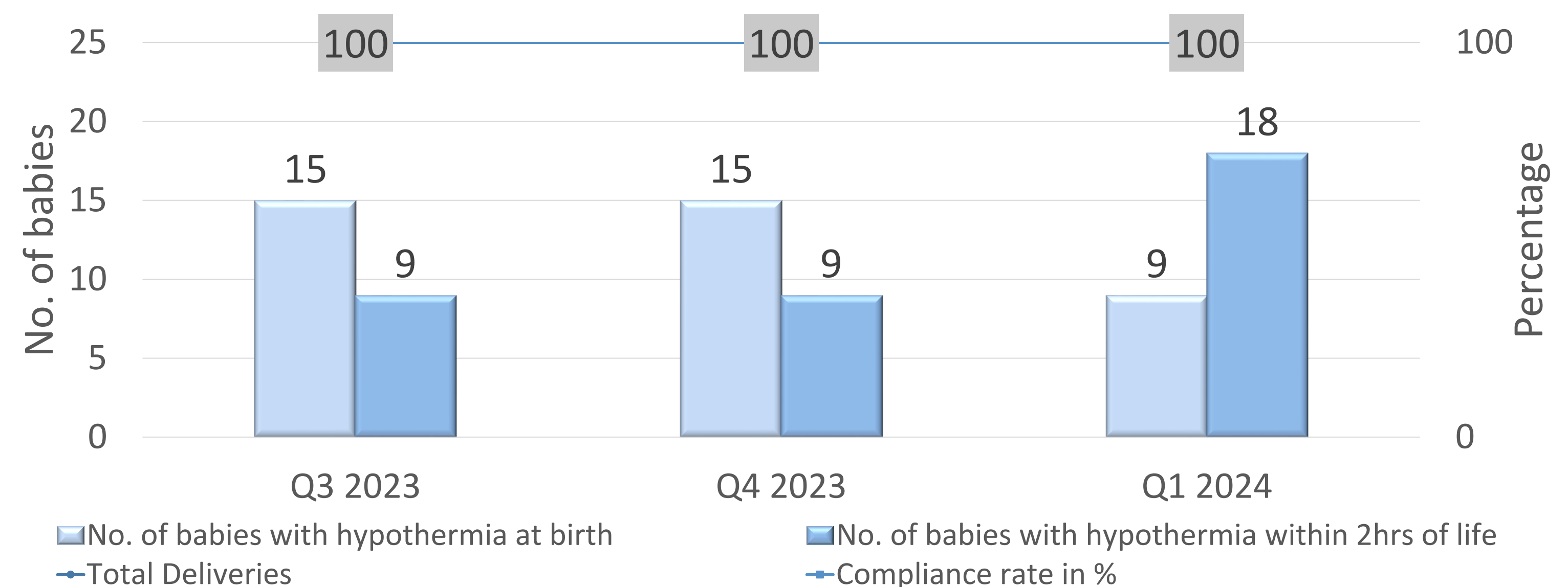
What is ThermoCare?

It is a bundle of interventions aimed at maintaining normothermia and reducing hypothermia in infants after birth.



Results

Evaluation: Outcomes were measured based on neonatal hypothermia percentage post intervention.



Rates of neonatal hypothermia:

Q1 2024: Hypothermia at birth decreased to 15% due to the measurement of rectal temperature at birth. However, hypothermia noted within 2hrs of life increased to 30% despite 100% compliance rate of ThermoCare.

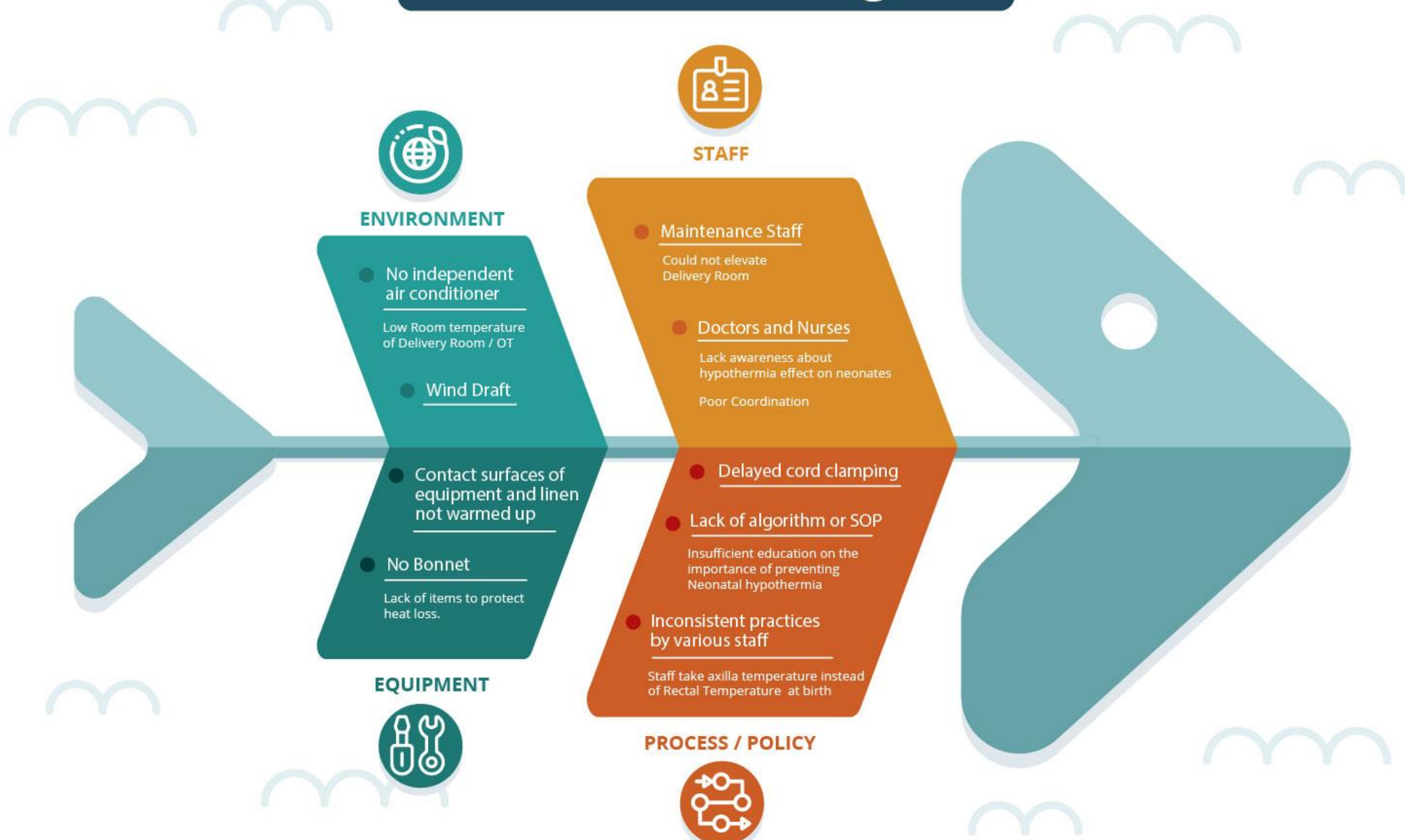
Q2 2024: Introduction to usage of plastic wraps after drying of the newborn, during KMC and during transportation of the newborn to the nursery was made to ThermoCare.

- The intervention aimed at reducing evaporative heat loss in newborns.
- Preliminary data for the month of April showed a marked reduction in rates of hypothermia at birth and within 2 hours of life, at 5% and 22% respectively.

Conclusion

- ✓ **Reduction in rates of hypothermia**
Marked reduction in the rates of neonatal hypothermia at birth by 66% and within the 2 hours of life by 26% were noted post interventions
- ✓ **Feasible**
- ✓ **Reduction in hypothermia related complications**
- ✓ **Cost effective**

Cause & Effect Diagram



Interventions

An intervention bundle was created to target the different touchpoints and reduce risk of hypothermia in infants post delivery.

At birth

1 Using an infant warmer, warmed towels and warmed wool bonnet (reduces heat loss from conduction, convection, radiation and evaporation)

2 Monitoring rectal temperature (reduce false hypothermia)

Before transport of the infant from Delivery suite/ Operating theatre to the nursery/ Hospital room

3 Utilizing a plastic wrap (reduce evaporative heat loss)

4 Swaddling infant securely in a warmed towel/swaddle