Thermoregulation in Preterm (<34 weeks)

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Background and Aim

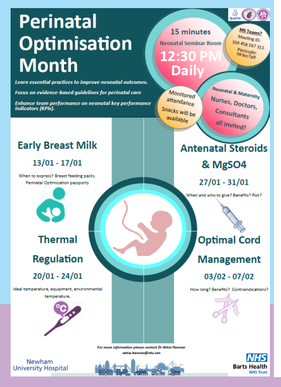
Newham Hospital is part of Barts Heath Trust, and our Level 2 neonatal and maternity unit is dedicated to continuous quality improvement through KPI-driven initiatives. We serve a diverse patient population, including high-risk pregnancies, with preterm birth rates necessitating enhanced perinatal optimisation.

Our focus is on improving neonatal outcomes through early breast milk initiation, thermoregulation, and enhanced documentation.

Infants lose heat through their skin and respiratory tract to the environment through evaporation, radiation, convection and conduction. Studies have reported that each decrease in admission temperature by 1°C below 36°C is associated with a mortality increase of 28%.

Aim: Establish a dedicated perinatal optimisation team, sustain KPI improvements, enhance BadgerNet data entry, appoint new KPI Champions, continue real-time data collection, and increase education efforts.

- Track performance using key perinatal metrics and documentation accuracy.
- Build on existing improvements and staff engagement.
- Leverage current infrastructure while integrating new initiatives.
- Implement and assess changes over six months.



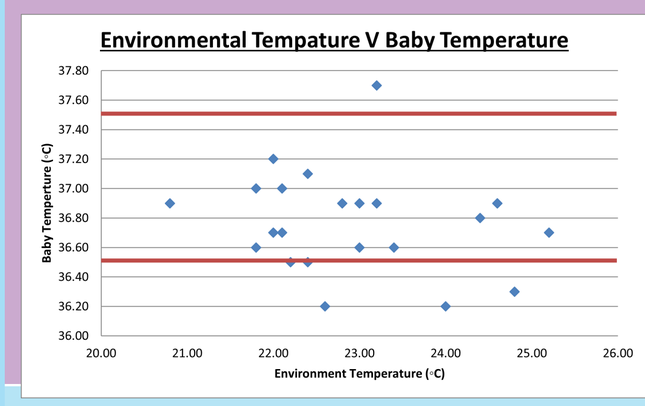
Method

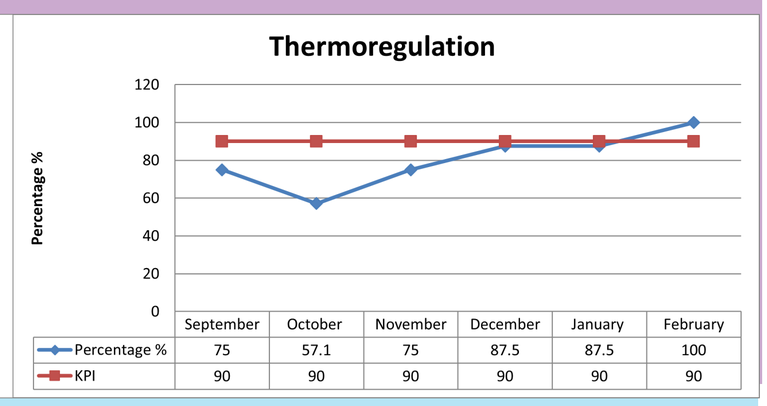
To measure the impact of our thermoregulation improvement efforts, we collected data on:

- **Theatre temperatures:** To ensure they remain within the target range of 23-25°C. Baseline data indicated a significant number of newborns had temperatures below 36.5°C at transfer.
- **Availability and Use of Equipment:** Temperature probes initially not consistently available in all rooms/ theatres.
- **Staff Awareness and Training:** Documentation on BadgerNet. Initial assessments revealed gaps in temperature documentation.

Results

- After intervention, compliance improved, regular temperature checks ensured theatres remained within recommended range.
- Post-intervention data showed increase in number of babies maintaining >37° C, reducing the risk of hypothermia.
- Following interventions, most rooms/theatres have access to temperature probes, improving real-time monitoring.
- Procurement of Neohelp (sterile plastic bags) enhanced thermal support for newborns.
- Small group teaching and simulation training increased staff confidence and competence in thermoregulation best practices.
- Feedback from staff indicated improved understanding of temperature maintenance strategies.
- After interventions, documentation accuracy improved, ensuring better tracking of neonatal temperatures.





	September	October	November	December	January	February
Percentage %	75	57.1	75	87.5	87.5	100
KPI	90	90	90	90	90	90

Learning and Next Steps

Key improvements include establishing a perinatal optimisation team to enhance collaboration with maternity, sustaining progress across all KPI measures, and improving documentation in BadgerNet.

Successes

- Regular theatre temperature checks (23-25°C) and wider availability of temperature probes.
- Increased staff engagement through small group teaching and simulation-based training.
- Enhanced compliance with thermoregulation protocols, with a focus on maintaining newborn temperatures 37°C before transfer.
- Improved documentation and real-time data collection, ensuring accurate reporting and analysis.

Challenges

- Ensuring consistency in training and adherence to best practices among all staff members.
- Overcoming logistical barriers in ordering and maintaining essential thermoregulation equipment.
- Addressing variations in documentation practices across teams.
- Limited staffing and time constraints impacting the ability to conduct frequent training sessions.
- Resource availability for purchasing and maintaining necessary equipment. More structured and frequent training sessions to improve staff confidence and adherence.
- Enhanced auditing mechanisms to track compliance and identify gaps proactively.
- Collaborating closer with the maternity team.

Next Steps

- Develop and review our current guidelines.
- Continue with regular teaching – through formal sessions as well as simulation.
- Re-launch another perinatal optimisation month.
- Implement a standardised documentation template during delivery and antenatal counselling focusing on thermoregulation.
- Conduct periodic reviews of documentation quality.
- Ensure Neohelp and temperature probes are readily available in all necessary areas.
- Work with procurement teams to establish a sustainable supply chain.
- Schedule quarterly re-audits to assess compliance and impact.
- Use audit findings to refine protocols and training.
- Create and implement a formal guideline for neonatal thermoregulation.
- Share the guideline across relevant departments.

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