

Improving early thermal care for preterm infants

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Background

Normothermia on admission for infants born at less than 32 weeks gestation as measured by NNAP had remained static at around the national NNAP average in 2014-16 (results 57%, 62% & 59% respectively). Therefore, we initiated a quality improvement project to address this in January 2017 and adopted this as a joint maternal-neonatal safety collaborative project from November 2017 onwards.

Aim: By end December 2018, 90% of preterm neonates of less than 32 weeks gestation born in the delivery suite would have a neonatal unit admission temperature 36.5°C to 37.5°C.

The key stakeholders for this project were neonatal unit medical and nursing staff, midwifery and obstetric staff (particularly delivery suite and theatre staff).

Measures

- BadgerNet data was reviewed, looking at temperature on admission for different gestational ages and weights, whether babies were too hot or too cold and where they were admitted from (theatres etc).
- Four stages were identified from birth to neonatal unit admission where temperature management could be compromised (Figure 1).

Figure 1. Thermal care journey.

THERMAL CARE JOURNEY	DURING DELAYED CORD CLAMPING
	DURING STABILISATION/RESUSCITATION
	DURING SKIN-SKIN CARE
	DURING TRANSPORT

- Thermal care guidance was issued covering each stage of the journey from birth to neonatal unit admission.
- A standardised case review template was used for any case where temperatures were outside the normal range.
- Monthly feedback to staff via newsletters and posters.

Plan, do, study, act (PDSA) cycles

1. New thermal care guideline including measurement of temperature in delivery suite and use of servo-control temperature for infants <32 weeks (February 2017).
2. Preterm infant resuscitation thermal care training (March 2017).
3. All hat sizes readily available on resuscitaires (November 2017).
4. Room thermometers in highest risk delivery suite rooms (Dec 2017).
5. Simulation of use of incubator shuttle for transfer from DS to NICU (Jan 2018) – rejected. Continue with transfer on resuscitaire.
6. Sterile plastic bags (NeoHelp, Vygon) introduced for caesarean section (Feb 2018).
7. Reduced use of transwarmers as overheating (Feb 2018).
8. Improving access to skin probes for servo-control on resuscitaire (Feb 2018).
9. Thermal Care Grab bags for delivery suite. Consists of: hat, skin temperature probe, plastic bag, small face mask, scissors (March 2018).
10. Education - Big 5 poster recirculation (July 2018).
11. Education of new staff members (September and January 2018).
12. How to use Servo mode temperature-guide added (January 2019).

Key changes associated with improvement

- Measure temperature in delivery suite and on arrival in neonatal unit.
- Servo-control temperature for babies less than 32 weeks gestation (training required) (Figure 2).

Figure 2. Servo-control temperature.

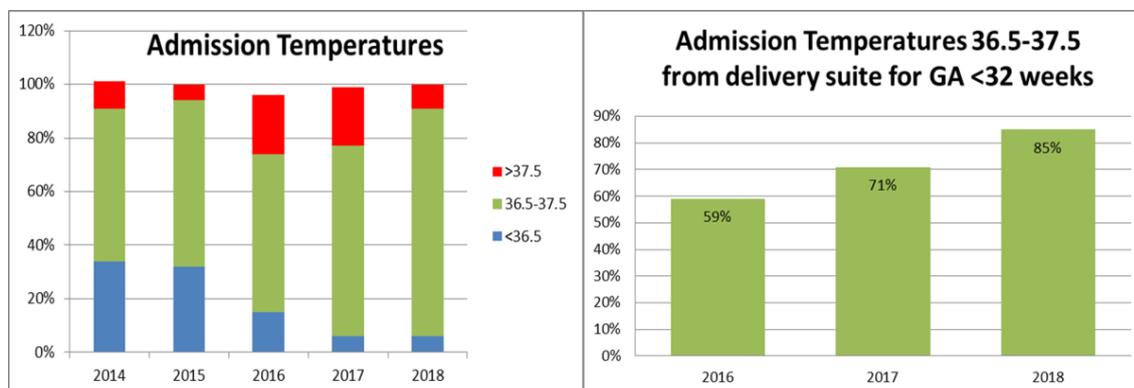


- Dry the head and use an appropriately sized hat.
- Use of plastic bags whilst delaying cord clamping (sterile for C-section).
- Thermal care grab bags are useful to ensure you have all the kit available.
- Avoid overuse of transwarmer.
- Regular staff training.
- Monthly feedback.

Perseverance with messages and training were key to overcoming barriers as well as regular feedback to staff on our improvements. This project improved working relationships between obstetric/ midwifery/ theatre and neonatal staff.

Outcomes

Figure 3. Administration temperatures over time.



Top tips for implementation

- Have clear goals.
- Make sure the required kit is always easily accessible and everyone knows how to use it.
- Involve midwives and obstetricians.
- Regular multidisciplinary meeting to review previous goals and to set new ones.
- Regular education and feedback to neonatal and maternity team on how we are doing.