Neonatal Hypothermia Guideline

Summary statement: How does the document support patient care?	By providing evidence based guidance for staff in the management of neonatal hypothermia
Staff/stakeholders involved in development:	Leads for Maternity Risk Management (Paediatric, Obstetric and Midwifery), Labour Ward Leads, (Obstetric and Midwifery), Neonatal Leads, Joint Obstetric Guidelines Group
Division:	Women and Children's
Department:	Maternity
Responsible Person:	Chief of Service
Author:	Neonatal Matrons
For use by:	All Paediatric and Midwifery staff involved in the care of newborns.
Purpose:	To provide clear evidence-based guidance on prevention, detection and management of neonatal hypothermia
This document supports:	CNST Maternity Standards Care Quality Commission
Key related documents:	**UH Sussex (SRH&WH) Maternity / Neonatal Guidelines:** Newborn Feeding, Examination of the Newborn, Support for Parents, Neonatal Hypoglycaemia, Admission to Neonatal Unit
Approved by:	Joint Obstetric Guideline Group Neonatal & Maternity Guideline review meeting (21st February 2023)
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If you require this document in another format such as Braille, large print, audio or another language please contact the Trusts Communications Team	
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Version	Date	Author	Status	Comment
1.0	November 2010	Neonatal Matrons	Archived	New Trustwide guideline
2.0	February 2011	Lead CNST Midwife	Archived	Administrative update
3.0	May 2012	Neonatal Matron	Archived	Actions for initial temperature of 36.5^{o}C and referral criteria to Paediatric team updated
4.0	April 2013	Consultant Paediatricians	Archived	Updated to reflect HRG changes
4.1	November 2013	Consultant Paediatricians	Archived	3 year review-no changes
4.2	September 2020	Neonatal Matron	Archived	Updated and reviewed
4.3	December 2022	G. Thomson, Clinical Educator	LIVE	Updated in line with: Newborn resuscitation and support of transition of infants at birth Guidelines | Resuscitation Council UK 2021 To provide clarification and elaboration on existing recommendations To accommodate community settings and nursery nurses

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1.0 Aim

The aim of this guideline is to provide clear guidance for staff on the detection and management of newborn babies with or at risk of neonatal hypothermia.

2.0 Scope

This guideline applies to all staff caring for newborn babies.

3.0 Responsibilities

Midwives, health care assistants, maternity care assistants, nursery nurses & paediatricians:

- To access, read, understand and follow this guidance.
- To use their professional judgment in application of this guideline.

This guidance is for staff employed by University Hospital Sussex (SRH&WH). The guidance is not rigid and should be tailored to the individual circumstances of each woman/person. If the guidance is not being followed, documentation of the reasoning and/or justification is essential, with clear documentation of alternative plans and discussions.

Management:

- To ensure the guideline is reviewed as required in line with Trust and National recommendations.
- To ensure the guideline is accessible to all relevant staff.

4.0 Abbreviations used within this guideline

NEWTT - Newborn Early Warning Trigger & Track	**KG-** Kilograms
LSCS- Lower segment Caesarean section	**GA-** General anaesthetic

5.0 Key points

Anticipate and prevent hypothermia in the following risk groups by measuring temperature. Perform neonatal observations at birth followed by 2 hourly for the first 12 hours, and then 4 hourly between 12-24 hours following birth:

- **Gestation less than 36 weeks Please follow late preterm guidance**
- **Birth weight <2.2 kg**

- **Requiring resuscitation at delivery**
- **Ill babies (excluding babies requiring cooling)**
- **Post LSCS if carried out under GA**

An NEWTT observation chart should be commenced recording temperature, heart rate, respiratory rate and blood sugar (see Appendix 1).

If a baby has abnormal observations at any time, a spot oxygen saturation check should be carried out and observations repeated in 30 minutes following the abnormal result. A neonatal team review should be requested if abnormal observations remain after 30 minutes or other concerning signs- use NEWTT chart scoring for support when identifying need for and timing of review.

If in the community setting, i.e. homebirth/BBA, and any risk factors are identified or abnormal observations remain after 30 minutes then transfer to the hospital for neonatal review.

6.0 Midwife responsibilities

All midwives should be aware of the risk factors for hypothermia (see above) and are individually responsible for the mothers and babies in their care.

Before the birth of the baby, it is recommended that the windows and doors should be closed and fans turned off to prevent drafts. In cold weather it would be advisable to ensure that the room is adequately heated. The environment in which the neonate is cared for should be kept approximately 23-25^{o}C as per Resuscitation Council 2021 guidance. For premature infants less than 36 weeks gestation, the environment should be kept above 25^{o}C as per Resuscitation Council 2021 guidance.

7.0 Immediately after birth

Immediate drying of the baby to reduce evaporative heat loss followed by skin to skin contact and attention to the baby's thermoregulation should be encouraged from delivery. The importance of **prompt feeding**, whether breast or bottle feeding within 1 hour, followed by regular feeds, should be emphasised to women/people and their birth partners. If skin to skin is risk assessed as inappropriate (consider safe skin to skin and positioning of baby) or not to the mother's/birthing parent's wishes then the baby should be dried and wrapped in warm dry towels and blankets. The birth partner can instead/also perform skin to skin if the mother/birthing parent wishes.

Within the first hour of life an axilla temperature should be taken. Normal axilla temperature is 36.5- 37.5˚C (Resuscitation Council 2021 Guidance). When the initial temperature is 36.5◦C or less, the baby should be placed skin-to- skin with the mother/birthing parent (or birth partner); or dressed warmly including a hat, and encouraged to feed and the temperature should be re-checked after 30 minutes to ensure it is improving.

Any baby who has a temperature persistently below 36.5◦C will require a review and a written plan of care documented in their notes by the paediatric SHO. This plan should be re-evaluated appropriately by the paediatric SHO and baby reviewed when deemed necessary.

8.0 Procedure when temperature is less than 36.5°C

If the temperature is less than 36.5°C, the baby should be placed skin to skin and covered by a blanket or dressed, including a hat. The infant should also be encouraged to feed, if it has not already done so. The temperature should be rechecked after half an hour. If a repeat temperature remains below 36.5˚C, a blood sugar test should be performed and the neonatal hypoglycaemia protocol followed accordingly.

If temperature remains below 36.5˚C despite previous measures then a hot cot should be introduced. Furthermore 4 hourly observations should be commenced and documented on a NEWTT observation chart. This should include the monitoring of neonatal temperature, heart rate, respiratory rate, blood sugar and a spot oxygen saturation check.

9.0 Procedure when temperature is less than 36°C

If the temperature is less than 36°C, **a blood glucose test** should be performed (see neonatal hypoglycaemia guideline). The baby should be dressed, including a hat and returned to the mother/birthing parent to encourage the baby to feed. The use of a hot cot may be required.

The temperature should be **rechecked after half an hour**, if the temperature remains low after this, they should be reviewed by the paediatric SHO and a plan of care formulated.

10.0 Skin to skin contact

Frequent and prolonged skin to skin contact throughout the immediate postnatal period will stabilise heart rate and respirations, reduce stress and maintain the baby's temperature thereby helping to maintain normoglycaemia. Skin to skin contact also stimulates a baby's feeding reflexes and may help to facilitate spontaneous frequent feeds.

11.0 Correct use of the hot cot

- Always make sure the hot cot is kept switched on at all times so it is available for immediate use. It takes 4 hours for the cot to warm up once it has been turned off.
- The cot should always be initially set at 37°C.
- Place a blue hot cot cover over the water bed, plus one thin sheet. There should be no other layers between the baby and the mattress.
- Baby should wear only a vest and babygrow whilst being nursed in the warming cot. This is so that the warmth of the mattress reaches the baby. Never wrap the

baby in towels or use a cardigan. Cover the baby with 2 – 3 blankets.

- Recheck the baby's temperature on a 4 hourly basis

- As the baby's temperature reaches 36.5^{o}C or above, the warming cot temp may be gradually reduced by 0.5^{o}C. Provided the baby's temperature remains 36.5oC or more, then the hot cot temp should be continued to be reduced by 0.5^{o}C at each 4 hourly check until the cot reaches 35^{o}C. If the baby's temperature is stable, the baby may be transferred to a normal cot.

- Once the hot cot is discontinued ensure the baby is warmly dressed as they may need additional clothing to maintain their temperature following transfer to a normal cot. Recheck the baby's temperature when they have been transferred to a normal cot after 1 hour.

12.0 Continuing care

When the temperature is more than 36.5 or more for 2 consecutive readings, observations can be discontinued.

The Care Summary sheet in the baby's notes should be completed appropriately.

Staff must also focus on providing supporting and assessing feeding to ensure the neonates continued wellbeing, particularly those with pre-existing risk factors.

13.0 Patient Information

Midwives and paediatric medical staff are responsible for explaining to parents the reasons for monitoring and any management that takes place.

14.0 Monitoring/Audit

The process for audit and monitoring of this guideline is contained within the Maternity Audit Document.

References

Neonatal Thermoregulation. Newborn Guideline (2013) British Columba Reproductive Care Program. 2. pg1-6

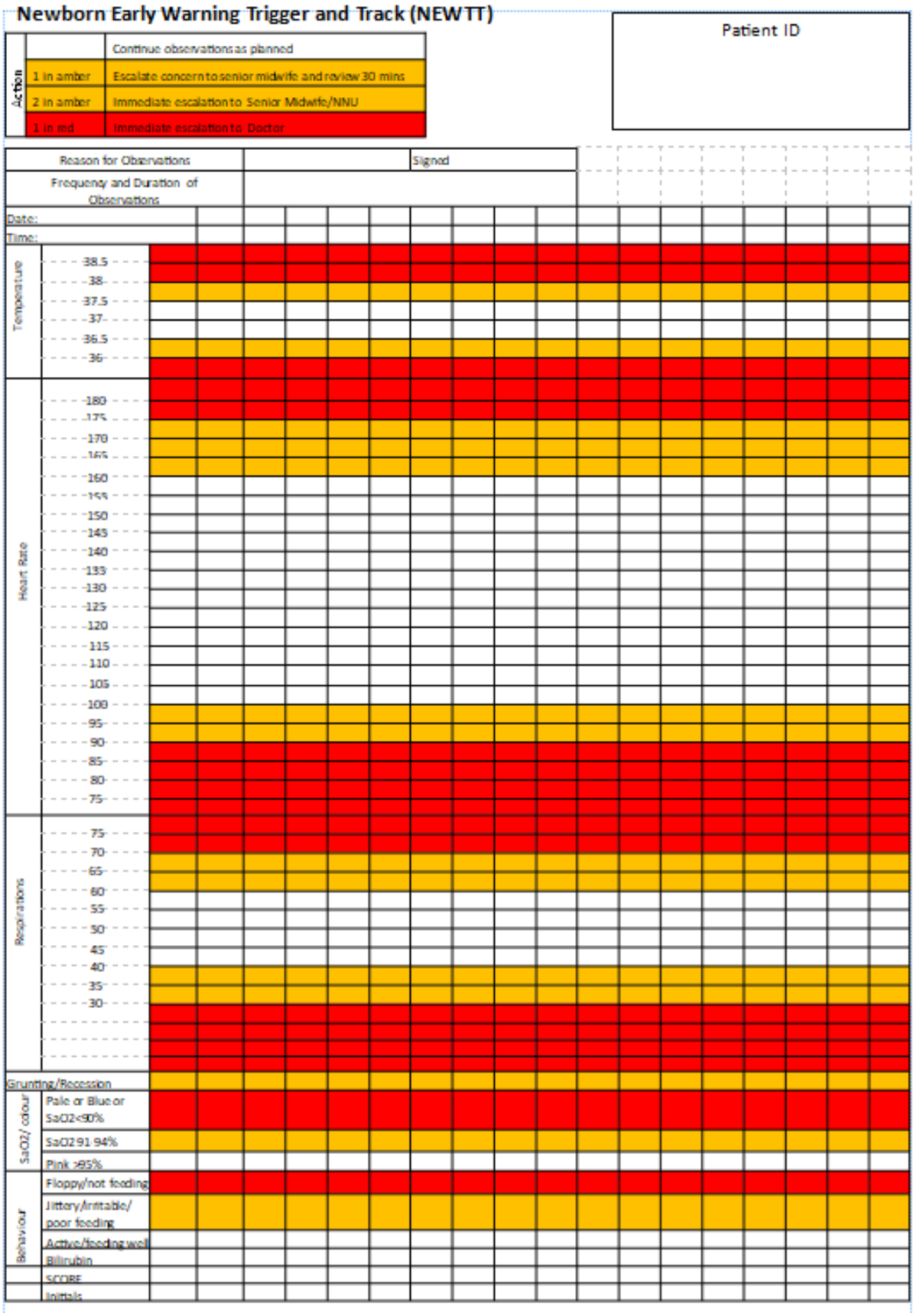
CESDI project 27/28. 2004

Johanson, R & Spencer, A (2009). Temperature changes during the first 24 hours of Life. Midwifery. 8. (2): 82-8 June

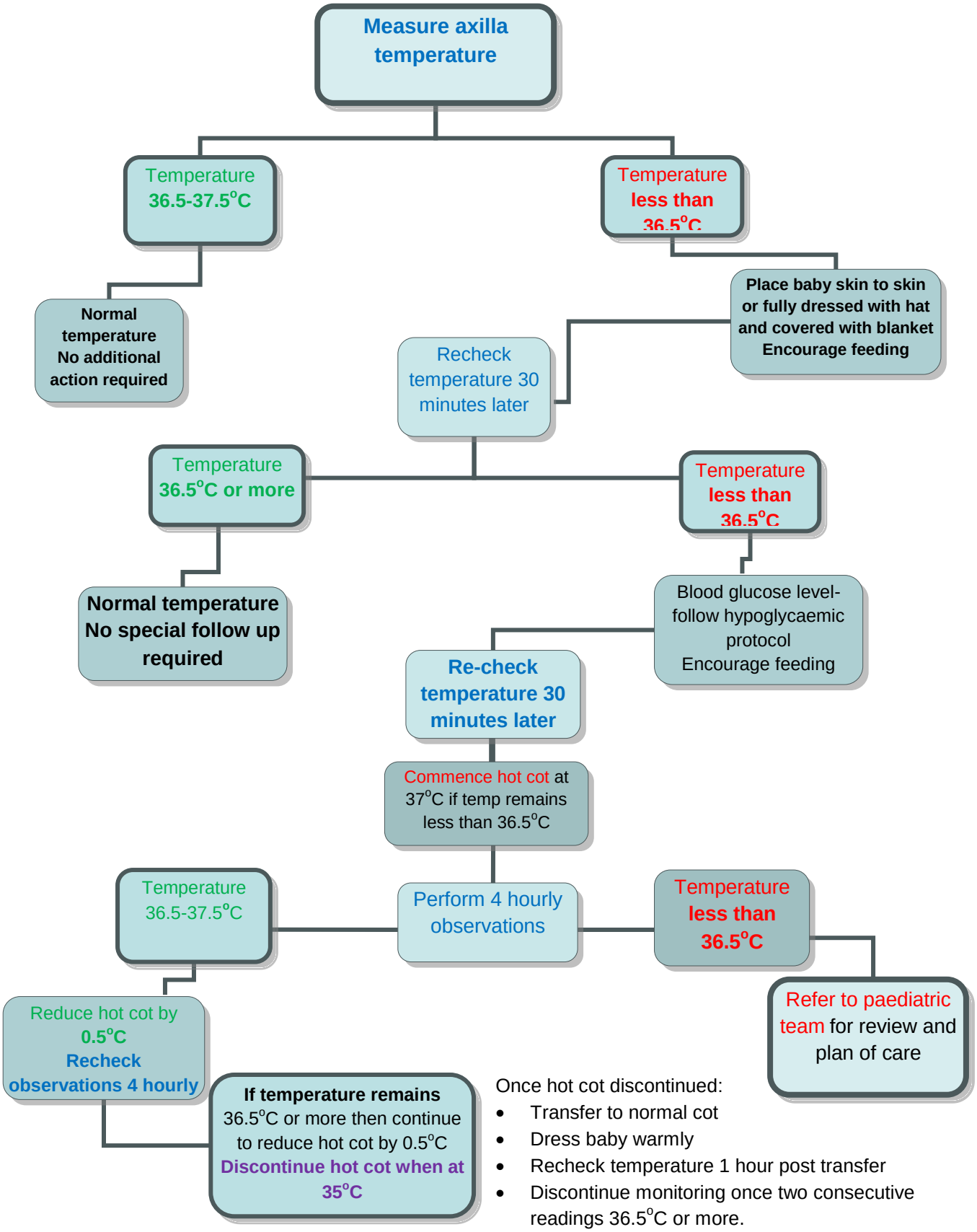
Resuscitation Council UK (2021). Newborn resuscitation and support of transition of infants at birth Guidelines

Appendix 1: Neonatal Observation Chart

DO NOT PRINT FROM GUIDELINE



Appendix 2: Monitoring for neonatal hypothermia flowchart



Once hot cot discontinued:

- Transfer to normal cot
- Dress baby warmly
- Recheck temperature 1 hour post transfer
- Discontinue monitoring once two consecutive readings 36.5°C or more.