Title:	**Process required for Local Neonatal Unit to undertake initiation of active cooling prior to transferring to an NICU.**
Reference number	PD-0DN-04
Main Author (s)	Rachel Lomax Kelly Harvey Beverley Knight Kristi Penney Joanne Dangerfield Laura Iley Biven Saha Srinivasarao Babarao Ranganna Ranganath
Target Audience	All Local Neonatal Units within the North West Neonatal Operational Delivery Network
Ratified by:	SMT
Date Ratified:	26.08.21
Review Date:	26.08.24
Version:	Final
Document status:	Shared at NSGs

Contents

Introduction:

The NWNODN supports a standardised approach to Therapeutic Hypothermia across the North West and has produced a North West Cooling Guideline with contribution from clinical experts in the region and in line with the latest BAPM Therapeutic Hypothermia framework. This cooling guideline provides support to all providers in the North West in their approach to therapeutic hypothermia. Whilst active cooling is an NICU activity as per the Neonatal Service specification, several LNUs across the NWNODN have been successfully initiating therapeutic hypothermia prior to transfer to a tertiary centre for a number of years. An early pilot study in Greater Manchester successfully demonstrated that the initiation of active cooling in an LNU prior to transfer to tertiary NICU services was safe and sustainable in practice and contributed to effective achievement of target temperature in such cases. Following the publication of updated BAPM guidance on therapeutic hypothermia in 2020 which states;

'All SCUs and LNUs should be able to assess infants and instigate therapeutic hypothermia using aEEG and servo- controlled cooling equipment…'

The NWNODN strongly encourages NW LNUs and SCUs currently offering passive cooling only, to introduce this practice with the support of guidelines, education and support to facilitate the introduction of the initiation of active therapeutic hypothermia to improve equity of access to early therapeutic hypothermia and achievement of target temperature.

Background:

The NWNODN Therapeutic Hypothermia guideline documents the evidence around time to reach target temperature. It is widely accepted that achieving target temperature as soon as possible, but within 6 hours, has a positive impact on outcome. Audit figures available via the NWNODN exceptions data and available via Connect North West (CNW) Transport Service identify that achievement of target temperature for therapeutic hypothermia for infants born in an LNU can be challenge. Whilst all units can passively cool infants meeting cooling criteria, this does not always lead to target temperature being achieved, with reported incidents of over cooling to below 33 degrees or babies not achieving target temperature within acceptable timeframe. The use of active cooling within an LNU supports controlled achievement of target temperature but must have robust governance in place at network level to support implementation and ongoing practice.

Aim:

This document aims to describe the process required for an LNU to undertake initiation of active cooling prior to transfer. It describes the steps required by an LNU to provide assurance to their trust and to the network that it is safe for the initiation of an NICU activity to take place in an LNU. Once these criteria are met, a formal letter will be forwarded agreeing this activity at an LNU. The LNU will then be recognised as "an LNU undertaking initiation of active cooling prior to transfer" and this activity will be monitored through the NWNODN exception reporting process. A flow chart is also included to demonstrate overall referral and management process for active cooling in an LNU.

Process for LNU to commence active cooling:

For an LNU to be recognised by the NWNODN as a unit undertaking initiation of active cooling prior to transfer a formal request should be made through the locality Neonatal Steering Group (NSG). Once agreement has been reached at NSG it is up to the provider to offer evidence to the NWNODN that all criteria described below and in the action plan have been met.
A site visit from members of the cooling SIG will take place during this process to support providers in achieving the action plan and to "sign off" the action plan.
Once the NWNODN have received and verified this evidence the unit will receive a letter from the NWNODN endorsing this activity in the LNU. Continued staff competence will be the LNU's responsibility but support for training and education of staff can be sought through the NWNODN cooling group and education team.
This process is illustrated in Appendix 1.
If at any time the LNU feels they no longer meet the requirements described in this document, they must inform the NWNODN at the earliest opportunity for support and guidance to ensure requirements are met and the practice can continue. For more detail see the governance section.

Local Neonatal Unit Requirements:

Before a request is made to NSG to begin the process the LNU should have the following in place:

- Trust board level agreement they wish the unit to undertake the treatment when agreed by the network
- Local business case approval for appropriate equipment

Evidence of the following is required and should be returned to the NWNODN in the form of a completed action plan (an example of which is available from the NWNODN).

Equipment and resources:

Passive Cooling

- Rectal probe to monitor core temperature continuously
- Robust resource pack, clinical care pathway or care plans to support staff to instigate and manage safe passive cooling in line with the NWNODN guideline

Active Cooling system

- Servo controlled active cooling system available
  - This should have an automated system for initiation of cooling, maintenance at the target temperature for 72 hours and re-warming
- Clear guidance, including pictures, available to support set up of equipment

Cerebral Function Monitor

- CFM monitoring available
- Clear guidance including pictures available to support use of CFM both application of needles/buttons and interpretation
- The equipment should record the aEEG
  - This aEEG should be able to be viewed and copied to form part of the decision making regarding ongoing cooling at the NICU.
  - There should be a process in place to allow aEEG data to be downloaded or copied from the LNU for viewing by Connect NW and the NICU.

Staffing

Appropriate staffing should be available when any infant commences active cooling.

- This will include junior medical staff (Tier 2) and nursing staff Band 6 or above present on the unit all the time an infant is receiving active cooling, the neonatal shift co-ordinator should also be present to oversee nursing care and LNU management.
- A consultant should be involved in clinical decision making to commence active cooling and must be present on site until the arrival of the transport team.
- As many LNU consultants may not have recent experience of cooling treatment, they should utilise advice and support from Connect NW or a tertiary level consultant where Connect NW staff are unavailable early in the journey of the infant.

Education and Training

(See summary table Appendix 2)

Initial Training

- Medical staff Tier 2/ANNPs involved in the care of babies with suspected HIE should have training and be competent in neurological assessment, initiation, and interpretation of aEEG monitoring and nursing staff should be able to undertake neurological nursing observations.
- As a minimum requirement all nursing staff band 6 and above and medical staff involved in the care of a baby receiving active cooling should receive training in the use of cooling equipment and have in date equipment competency paperwork to support this.
- All staff caring for an infant receiving active cooling will have received training in the initial management of an infant receiving active cooling. Initial training will be provided by the NWNODN Cooling Special Interest Group (SIG) which will include a site visit to deliver face to face training with additional online training available, both live and pre-recorded, which will be accessible to all staff.
- Staff should be offered the opportunity to spend time observing active cooling at their local NICU.
- Local pathways and guideline templates should reflect NWNODN guidelines on active cooling at an LNU, incorporating equipment guidance as required. Resources will be provided by the NWNODN that LNUs can utilise and adopt locally.
- It is essential that <u>all</u> the training requirements are fulfilled before a unit commences active cooling prior to transfer.

- Units should have an identified lead nurse and medic responsible for cooling who will have either observed cooling at an NICU and/or attended SIM sessions. We strongly suggest leads have dedicated non-clinical time to co-ordinate training, competencies, links to the network cooling group and undertake clinical governance activities related to cooling.

Continued competence

- All staff involved in the care of an infant receiving active cooling will have annual updates on the management of infants receiving active cooling. Regular updates will be provided by the NWNODN Cooling SIG which will include theoretical education and SIM sessions. Education sessions will also include sharing learning experiences which unit representatives will be expected to participate in.
- All staff involved in the care of an infant receiving active cooling are required to maintain yearly equipment competency record. For medical staff this is recommended to be recorded on the Medical Device Competency Checklist at induction.

Governance:

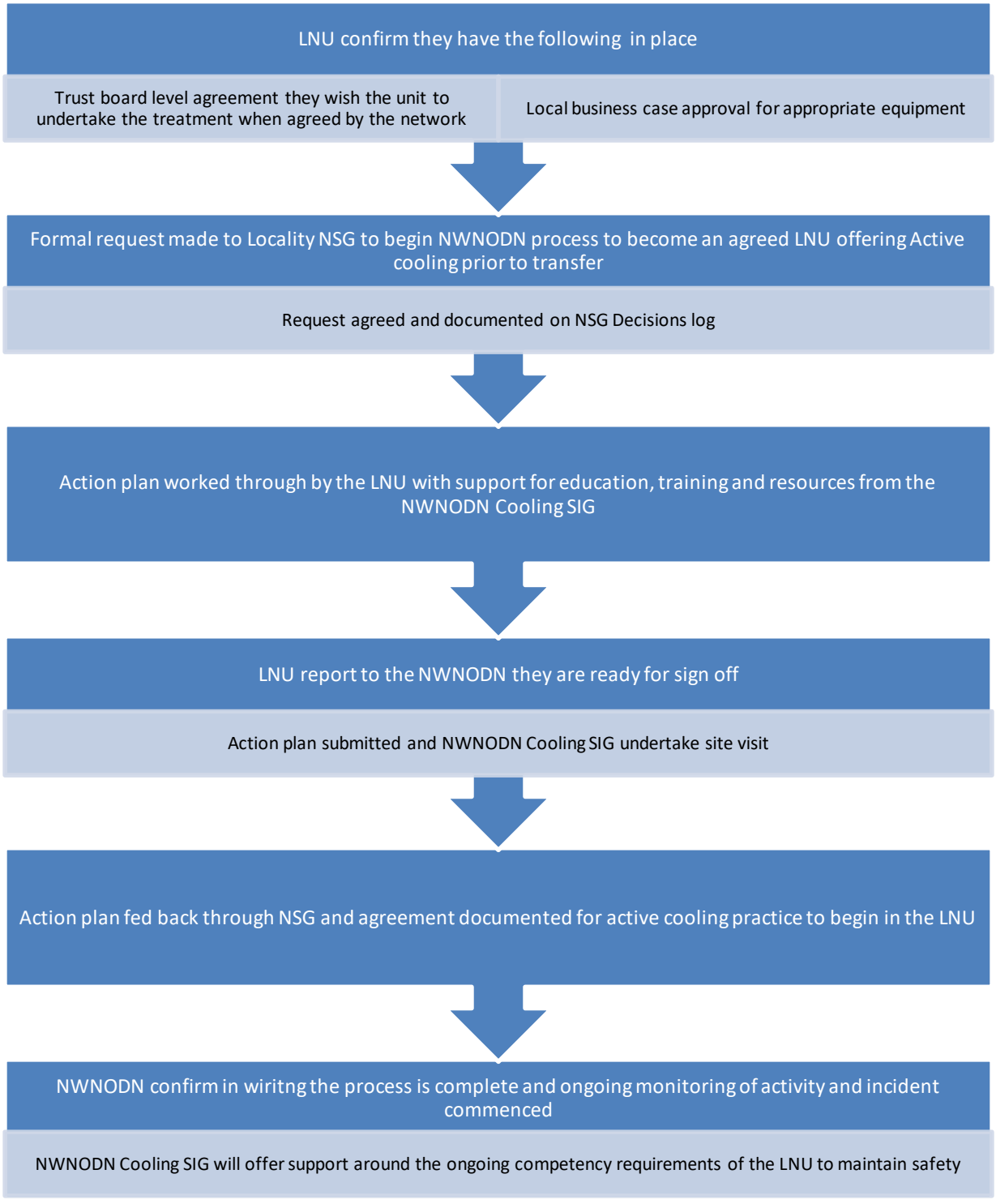
The NWNODN will require written assurance and a completed action plan from the provider that all requirements described above have been met and processes are in place to continue to provide safe effective cooling management.

It is expected that the LNU action plan, which can be found at https://www.neonatalnetwork.co.uk/nwnodn/network-guidelines-2/ will be submitted prior to the booked site visit with evidence embedded for completed actions e.g. the availability of equipment, training plans, pathways to be used and trust agreement with the governance requirements.

The provider must agree to follow the agreed network pathway, ensuring in all cases:

- There is discussion and agreement with Connect NW and/or an established NICU cooling centre prior to initiation of active cooling.
- All cases of active cooling are subsequently transferred to an NICU cooling centre for ongoing assessment and management.
- There should be a documented peer review process after each case involving the multidisciplinary team with midwifery/obstetric involvement, this should include review of any opportunities to prevent neonatal encephalopathy, appropriateness of therapeutic hypothermia and timeliness of referral. It is recommended that as a minimum this would involve an exception report, MDT practice review and referral to HSIB and/or EBC where criteria are met.
- There should be regular audits carried out against the standards set out in guidelines.
- There must be local processes in place for storing and saving CFM images in clinical notes. Data should also be downloaded from cooling machines after each episode of use and stored in clinical notes where possible.

Appendix 1: Process to become LNU offering active cooling prior to transfer



Appendix 2: Table of Training requirements

Training Requirements			
Initial Training	**Delivery Methods**	**Dr/ANNP**	**Nurse**
Background to HIE and Cooling	Workshop, online sessions/resources	X	X
Pathway and Policy teaching	Workshop, online sessions/resources	X	X
Equipment Competencies	Workshop, online sessions/resources, local leads	X	X
Initial care of the infant receiving active cooling	Workshop, online sessions/resources	X	X
Neurological examination and CFM interpretation	Workshop, online sessions/resources	X	
Discussion of special cases and 'grey' areas decision making	Workshop, online sessions/resources	X	
Opportunity to attend NICU to observe active cooling	Network NICU	X	X
Peer review process	Workshop, local leads	X	X
Ongoing Training			
Attendance at network study days	Workshop	X	X
Opportunity to attend NICU for refresher training	Network NICU	X	X
Attendance at SIM sessions locally and as part of NWNODN	Local leads, network NICU, NWNODN SIM sessions	X	X
Yearly equipment competencies	Local leads, workshop, online sessions/resources	X	X