Neonatal transitional care – a concept not a place

Neonatal transitional care can reduce and prevent neonatal unit admissions and offers mothers and their babies additional support to ensure a successful transition to discharge home. This article will consider the approaches taken at University Hospitals Plymouth NHS Trust and offer guidance for others looking to establish a transitional care service in accordance with the new British Association of Perinatal Medicine framework.

Róisín McKeon-Carter
RSCN, RGN, BSc Neonatal Studies
Neonatal Service Clinical Director, Advanced Neonatal Nurse Practitioner, Florence Nightingale Leadership Scholar, Neonatal Intensive Care Unit, Derriford Hospital, University Hospitals Plymouth NHS Trust

Member of the BAPM Working Group that produced *A Framework for Neonatal Transitional Care*

roisin.mckeon-carter@nhs.net
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Key points

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1. Neonatal transitional care (NTC) is a service, not a location. It can be administered in a variety of settings; a designated transitional care ward is not necessary.
2. NTC epitomises the philosophies of family-centred and family-integrated care.
3. The new BAPM framework for practice describes standards for the provision of NTC and should facilitate its delivery in all maternity and neonatal settings.
4. The neonatal unit at Derriford Hospital admitted 400 babies in 2016/17. A further 818 babies were admitted to NTC for enhanced neonatal care alongside their mothers.

Neonatal transitional care (NTC) supports and enhances patient flow and facilitates early and safe discharge from hospital when supported by a dedicated neonatal outreach service (NOS). NTC is not a new concept; it was first proposed over 30 years ago.[1] NTC supports a resident mother to be the primary care provider for her baby with care requirements in excess of normal newborn care yet does not require continuous monitoring to the extent offered in a special care baby unit (SCBU). For example, NTC might be suitable for:

- a late preterm infant with moderate additional care needs
- an ex-extreme preterm baby transitioning from a neonatal unit (NNU) and preparing for discharge home
- a term newborn baby requiring additional support or surveillance.[2]

Why do we need NTC?

A systematic review published in 2013 concluded that transitional care benefits the health outcomes of moderately compromised infants and mothers, and raises the potential for shorter length of hospitalisation.[3]

In an era of overstretched neonatal intensive care resources, NTC has the potential to reduce and prevent some NNU admissions and provide babies and mothers with the additional support they require to ensure a smooth transition to discharge home (**FIGURE 1**).

A number of babies that reside in NNUs could be cared for by NTC; its benefits can be seen in **TABLE 1**.

Family-centred care

NTC is closely linked to the philosophies of family-centred care and family-integrated care, where the baby is placed at the heart of the family with the parents as partners in their baby's care.[4,5] Every newborn baby should be with its mother whenever possible. By virtue of keeping the mother with her baby, NTC facilitates kangaroo care and breastfeeding, and helps to support parents as the primary caregivers for their baby. Rather than question whether a mother and her baby should be cared for together, ask why should they be separated?

Drivers for NTC

The Department of Health's 2007 *Maternity Matters*[6] offered mothers "choice, access and continuity of care in a safe service." This resulted in most women opting to have postnatal care at home and

FIGURE 1 Mother Nikita and baby Erin born at 33+6 weeks' gestation and preparing for discharge home with support from the neonatal outreach service.

healthy babies being discharged as early as two hours post-delivery. Therefore, those women and babies who remain in hospital often have additional needs to that of normal care.

Other national initiatives, eg NHS Resolution's Clinical Negligence Scheme for Trusts (CNST) incentive scheme[7] and the National Neonatal Audit Programme (NNAP)[8] support the delivery of high quality, patient-centred maternal, newborn and infant care services and highlight that there is more that can and should be done.

The 2013 service specification for neonatal critical care by NHS England promotes NTC, recommending that neonatal services should include provision of transitional care by working in collaboration with postnatal services (subject to a local service model).[9]

The patient safety team at NHS England (now NHS Improvement) initiated the ATAIN (avoiding term admissions into neonatal units) programme in 2014 to understand and address rising admission rates of full term babies to NNUs.[10]

In 2015, the government announced a national ambition to halve the rates of stillbirths, neonatal and maternal deaths and intrapartum brain injuries, and in doing so placed a spotlight on improving maternity safety and outcomes. This provided an opportunity for organisations to take stock of their current approach and draw on a number of initiatives to improve maternity care. The National Maternity Review's *Better Births*,[11] published in 2016, highlighted the need for quality services (ie safer, more personalised, kinder, professional and more family friendly), where every woman should make decisions about her care, and where she and her baby can access support that is centred around their needs and circumstances. This included the recommendation that minor medical interventions should be facilitated via transitional care, without separating the mother from her baby.[11]

Published in 2017, the first report from the National Maternity and Perinatal Audit (NMPA) – the largest evaluation of NHS maternity and neonatal services undertaken in Britain – recommended that provision of NTC should be expanded to ensure mothers and babies are kept together.[12]

In October 2017 the British Association of Perinatal Medicine (BAPM) published *A Framework for Neonatal Transitional Care*.[13] The aim of this framework for practice is to:

- describe standards for NTC care
- specify those babies for whom NTC should be the standard of care
- delineate service delivery
- offer recommendations for staffing of NTC services
- outline the importance of staff education and training
- ensure monitoring and evaluation of the service and appropriate clinical governance
- highlight the role of neonatal clinical networks.

The BAPM framework for practice further states that commissioners and providers should work together to ensure consistent delivery of high quality NTC.

At present many hospitals provide some elements of NTC, however service provision varies widely across the UK[14] and there is a need for strengthening the effectiveness and equitable delivery of NTC services. The NMPA found that two-thirds (64%) of sites with a neonatal unit provide NTC.[12]

As recently as January 2018, NHS Resolution wrote to hospitals outlining its CNST incentive scheme to reward those trusts who have taken action to improve delivery of best practice in maternity and neonatal services.[7] Trusts that are able to demonstrate compliance against 10 actions will qualify for a rebate of their contribution to the incentive fund. The third of the 10 actions relates to NTC and is as follows:

Can you demonstrate that you have transitional care facilities that are in place and operational to support the implementation of the ATAIN Programme?

Trusts are expected to provide a report to their board demonstrating progress against each of the 10 actions, which will then be submitted to NHS Resolution.

It is important to note that NTC is a service, not a location. It is not necessary to have a transitional care unit or specifically dedicated transitional care cots. NTC can be provided in a variety of settings, including a postnatal ward. Of foremost importance is the principle that where safe to do so, mothers and their babies should not be separated at birth but cared for together; the mother must be resident with her baby and providing at least some of her baby's care. The mother provides care above that needed normally with support from a healthcare professional trained in delivering elements of special care.[9]

- Avoids term admissions to the NNU
- Alleviates operational constraints such as bed-blocking in the NNU
- Prevents parental anxiety and promotes good maternal mental health
- Increases breastfeeding rates in late preterm infants
- Improves the neonatal experience for the parents and the baby
- Enhances parental confidence and bonding with their baby
- Minimises length of hospital stay and reduces re-admission rates
- Identifies a date of discharge at admission
- Increases prompt discharge of babies born at ≥34 weeks' gestation
- Facilitates effective discharge planning for complex babies
- Improves multidisciplinary collaborative work

TABLE 1 The benefits of NTC.

NTC at UHP

The NTC service at University Hospitals Plymouth NHS Trust (UHP) was established in the late 1980s by forward-thinking neonatal nurses, midwives and paediatricians; a culture of NTC was established early on. In 1994, the same forward-thinking staff fought to have a co-located postnatal ward/NTC with the neonatal intensive care unit (NICU) when the service relocated to a new hospital – Derriford Hospital. The NTC was established in the 18-bed postnatal ward comprising four bed bays and single rooms that accommodated newly-delivered mothers whose babies were receiving intensive care.

In 2010 the role of clinical lead nurse for NTC was created with the focus on putting the baby at the centre of all strategies. This included establishing clear guidelines to identify the at-risk newborn infant,[15] admission criteria for NTC and streamlining the pathway through the NICU to facilitate safe discharge and reduce length of stay – a strategy that has worked well. Central to the success of this was a

collaboration that was established with the midwifery team who audited the women whose babies were receiving NTC. Eighty-five percent of these women required postnatal care above that which could be delivered in the community for conditions such as hypertension, post-caesarean section, sepsis, brittle diabetes. This makes sense as generally babies born to these mothers also have additional needs.

UHP hosts the network NICU at Derriford Hospital. It is one of three NICUs serving the South West Neonatal Network, which also has six local neonatal units and three SCBUs. Provision of NTC varies across the network from no NTC provision to 16 cots, which serves to demonstrate the disparity of services for women and babies.[16] The unit has approximately 5,000 births per annum and provides tertiary neonatal services for Devon and Cornwall. In 2016/17 336 inborn babies and 64 outborn babies were admitted to the neonatal unit. A further 818 babies were admitted to the transitional care ward for enhanced neonatal care alongside their mothers.

Admission

Infants receiving NTC at UHP are admitted from a variety of settings: the central delivery suite, other postnatal wards, NICU, the community/home/emergency department or from other hospitals. The BAPM framework recommends that infants should be identified and assessed for NTC by an appropriately experienced and trained member of midwifery and/or neonatal staff, according to locally agreed guidelines. The UHP criteria for NTC from birth can be seen in **TABLE 2**. While it is important to be able to recognise the at-risk baby, a rule of thumb at UHP is that the baby should prove it needs admission to the NICU instead of needing to prove it is fit for discharge from the NICU. The BAPM framework details admission criteria for those babies coming from the postnatal ward, home and community settings and those 'stepping down' from the NNU.

Staffing

At UHP co-dependent services work together, ie there is collaborative working between midwifery and neonatal nursing staff, the medical staff, nursery nurses, paediatric services, the neonatal outreach team, the safeguarding team and allied healthcare professionals (**FIGURE 2**).

Late preterm infants	34^{+0}-36^{+6} weeks' gestation
Low birth weight	1,500-2,500g Infants that are <2nd centile for weight and/or have abnormal antenatal Doppler studies should be admitted to the NNU for initial assessment
Respiratory problems	Infants with mild respiratory distress (respiratory rate <80/min, mild recession and grunting) and with normal oxygen saturations in air may be observed initially and documented on a newborn early warning system.[17] Admit to the NICU if symptoms persist, worsen or oxygen therapy becomes necessary
Observations	Infants requiring four-hourly observations for a prolonged period (>24 hours)
Infection	Infants requiring intravenous antibiotics
Congenital abnormalities	Those requiring specialist nursing care, eg trisomies
Hypoglycaemic infants	Glucose <2.5mmol/L despite adequate enteral feeding
Infant of a diabetic mother (insulin or diet controlled)	
Maternal treatment with beta blockers	
Maternal drug and alcohol dependency	For example, babies who are on a stable reducing programme of opiate withdrawal for neonatal abstinence syndrome
Infants at risk of early jaundice	For example, maternal haemolytic antibodies
Infants requiring phototherapy	
Safeguarding concerns	Infants for adoption and those subject to care proceedings

TABLE 2 The criteria for NTC from birth at UHP.

Multidisciplinary staff must work together to facilitate the delivery of high-quality care and support the needs of individual babies and families, always keeping the mother and baby at the centre of care pathways.

There is a neonatal safety 'huddle' meeting three times a day which takes place on the NICU adjacent to NTC. At the meeting medical and nursing teams discuss NTC patient activity and any staffing issues including escalation of care.

The BAPM framework gives detailed recommendations for staff levels. The local agreement for NTC staffing at UHP is 1:6, ie one Band 4 nursery nurse/specialist healthcare assistant for six NTC babies supported by a registered midwife who takes overall responsibility. This model is efficient as 85% of mothers in UHP whose baby fits with the NTC admission criteria also need hospital postnatal care.

The BAPM framework recommends that access to training courses should be promoted in order to help neonatal and midwifery staff develop their skills. At UHP the Band 4 staff undertake an education programme that includes:

- full NNU preceptorship: 12 study days including a supernumerary period
- infant basic life support trainer training to enable staff to teach all parents prior to discharge home
- a comprehensive programme of competency training for administering specific oral and topical drugs and for teaching parents to administer medications where necessary.

Finance and business

Neonatal services in England are commissioned by NHS England specialist commissioners. Hospital trusts enter into a contract to deliver the service. The service specification includes NTC.[9] Payment is by Healthcare Resource Group (HRG) and BAPM has produced a document for hospitals to provide guidance on which

babies fit each HRG.[18] Work is ongoing to agree a national tariff.

At UHP, the NICU and NTC are under the neonatal service line and have accountable senior sisters who are also the budget holders. The mothers of the babies receiving NTC are under the maternity service line, again with senior sisters and accountable budget holders.

The NOS was developed in 2010 following a pilot study where we demonstrated a reduction in length of stay. Therefore, the hospital trust negotiated with the then Strategic Health Authority to offer a block contract to deliver NOS five days a week. This is currently paid for by the clinical commissioning group (CCG) and now offered seven days a week.

Discharge

According to the BAPM framework: "NTC should link seamlessly to community care, facilitating early discharge and appropriate post-discharge support for families." At UHP, the NOS staff are engaged as soon as a mother and baby are admitted to NTC.

The average time that a baby spends in neonatal care at UHP is outlined in **TABLE 3**. The late preterm infant of 34 weeks' gestation can go home supported by the NOS as early as four days of age if there are no additional complications, eg jaundice requiring phototherapy. On admission to NTC the mother is informed of the anticipated discharge date and on that day she will have her bags packed in readiness to leave as planned.

During their time in NTC, parents are educated and supported by staff to become their baby's primary caregivers and therefore they will be equipped to deliver care and make the adjustment from hospital to home. With the support of the NOS, babies are eligible for discharge when they reach 50% breast/formula feeding and 50% nasogastric tube feeding. This has been successful as parents are taught tube feeding and administration of medicines during the NTC stay.

Parent feedback

TABLE 4 shows the numbers of late preterm infants (34-37 weeks' gestation) admitted in a full year to Derriford Hospital NNU compared to NTC only.

In 2017 Bliss undertook a survey of all hospitals providing NTC as part of the preparation for the BAPM framework; 26 responses were received, 24 of which were from Derriford Hospital. Parents were asked:

1. What do you understand by the term transitional care?
2. At what hospital did you get transitional care?
3. How would you rate your experience of transitional care?
4. How confident did you feel going home?
5. Please describe your experience of transitional care.

Eighty-five percent of families said they felt confident to take their baby home. Of the 24 responses at Derriford, 12 rated the service as excellent, five good, six satisfactory and one poor. The negative responses were related to lack of support with milk expression in the first few hours after birth and concern that partners were not allowed to sleep overnight.

The unit has since put educational packages in place to ensure all staff understand the value of supporting mothers to express colostrum. There is a triage system in place to facilitate partners to stay overnight, eg for twin/triplet deliveries or where the mother has additional care needs. However, there are four bed bays accommodating mothers with additional postnatal requirements where it is not appropriate to have fathers.

FIGURE 2 The NTC team at Derriford Hospital includes a consultant neonatologist, junior doctors, nursery nurses, neonatal outreach staff, midwives and newborn hearing screening staff.

Gestation (weeks)	Number of babies	Average length of stay (days)
32	13	18.2
33	31	14.5
34	46	13.1
35	53	7.3
36	89	5.1

TABLE 3 Length of stay by gestational age at Derriford Hospital, 2016/17. The data Include all admissions to the NNU and NTC but exclude readmissions and all babies who spent any time in another hospital.

Gestation (weeks)	Total number of babies	NNU	NTC only	Never admitted to NNU
34	53	26	27	51%
35	63	15	48	76%
36	82	10	72	88%
37	177	43	134	76%
Total	**375**	**94**	**281**	**75%**

TABLE 4 Late preterm infants (34-37 weeks' gestation) admitted in a full year to Derriford NNU compared to NTC only.

Establishing an NTC service

Setting up an NTC service could appear a daunting task especially in some settings where there may be perceived barriers to service provision, for example lack of confidence among staff in delivering NTC, geographical footprint/accommodation constraints, staffing resources, commissioning and remuneration. However, with support from dedicated and enthusiastic staff it can be done.

An interdisciplinary approach is vital and it is very important to engage key staff from the outset, especially the head of midwifery, the consultants and nursing managers in the NNU. The NOS and safeguarding team should be co-located with shared care. Ensure there is an ancillary nursing workforce that is supported by a registered midwife. Involve allied healthcare professionals (a dietician, physiotherapist, clinical pharmacist, clinical psychologist) and peer support workers (eg breastfeeding volunteers).

Conclusion

The publication of the BAPM framework of practice and the CNST incentive scheme will pave the way forward for all neonatal service providers to implement or strengthen their NTC.

An NTC service that is adequately resourced and managed will improve maternity and neonatal care, and also the experience for the mother, her baby and her partner, and the extended family. Neonatal staff must work together with other disciplines to support the needs of babies and families and to ensure that the mother and baby remain together whenever possible.

Acknowledgment

The staff at UHP do a wonderful job taking care of our mums and babies and I want to thank every one of them for helping to make our NTC service a huge success.

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