The Northern Neonatal Network
An Operational Delivery Network
Website - **www.nornet.org.uk**

Chair: Deborah Jenkins deborah.jenkins@stees.nhs.uk

Clinical Lead: Dr Sundeep Harigopal sundeep.harigopal@nuth.nhs.uk
P.A. 0191 2825755

Nurse Lead: Lynne Paterson lynne.paterson@stees.nhs.uk
(01642) 854871

Manager: Martyn Boyd martyn.boyd@chsft.nhs.uk
Northern Neonatal Network, Trust Headquarters (Room 248), Sunderland Royal Hospital, Kayll Road, Sunderland, SR4 7TP
Office line (0191) 541 0139
Mobile 07795062535

Northern Neonatal Network Clinical Strategy

There is an urgent need to develop a strategy for newborn care in response to changing healthcare, financial and staffing pressures. It is vital that clinicians are involved in this planning, and help develop services to best meet the needs of babies and their families. A small group of clinicians has met to start this process.

Executive summary

Aims: to develop a safe and sustainable strategy for the organisation of newborn care in the Northern region that can respond to changing pressures and demands, and that provides the best quality care.

Key drivers:

1. Capacity: whilst out-of-region transfers are still occasionally needed we must plan to avoid these wherever possible. Many babies still fail to receive tertiary neonatal care at their nearest unit.

2. Occupancy: many units operate at unacceptably high levels of occupancy increasing the potential for adverse outcomes

3. Finance: current financial constraints and cuts to NHS services mean we must plan services assuming there is limited additional resource. We must aim to maximise value for money and utilise staff more efficiently.

4. Staffing: there are insufficient numbers of junior paediatric trainees to staff the current configuration. Rationalisation of unit configuration combined with changing staff roles and deployment are likely to be needed.

5. Transport: whilst current transport arrangements have served the network very well over many years there is a real likelihood that gaps in middle grade rotas and lack of nursing staff will mean that unless a new solution is found there will be times when neither of the units will be able to provide transport of a baby needing to be moved for intensive care. We need to develop a robust transport strategy as soon as possible.

6. Outcomes: NICU care is increasingly complex. We will be better placed to improve quality by sharing expertise and working in larger units. Equity for the babies must be ensured by regular audit of key health outcomes including gestation-specific survival and key morbidities such as NEC and ROP.

Proposed strategy

1. Larger tertiary units (NICUs) provide greater flexibility to meet changing demand, are more economically efficient, provide greater expertise and will result in improved outcomes.

2. There are currently 19 WTE consultants, ~22-25 WTE middle grade, ~16-18 WTE 'SHO' tier doctors. Junior doctor numbers will not increase in the next 5-10 years. These numbers are not sufficient to provide sustainable services for more than 2 NICUs

3. We propose working to a model whereby tertiary neonatal care is amalgamated initially into 3 NICUs (<2 years) and work towards providing care in just 2 regional NICUs within the next 5 years

4. Special Care (potentially involving short term respiratory support and/or parenteral nutrition) will need to be provided at 2 additional sites within the region.

Background

In response to the perceived need to develop an agreed clinical strategy for newborn care in the Northern Region an invited group of clinicians has been meeting to develop this document before it is more widely distributed amongst other clinicians for consultation and comment. The aim of the group was to look at the way forward completely dissociated from any political pressure from the Foundation Trusts.

Once the clinicians have an agreed strategy it is important that obstetric, fetomaternal, paediatric and paediatric surgical services are included in any subsequent consultation.

At the first meeting it was agreed that it would be reasonable to look at the strategy using a SWOT analysis and each point will be expanded upon in the text.

Strengths

History

There is a long history of cooperation and collaboration in the Northern Region initially through the Northern Neonatal Forum since the early 1990's. As well as agreed levels of care, cross region transport and advising commissioners about cot distribution, the forum was a source of high quality data and research including multidisciplinary studies. The forum was a leader within the country in many of these aspects of care but little further progress was then made in terms of network functionality. Eventually a managed clinical network was formed (the Northern Neonatal Network) but this was the last in England by some time and the network staff have only been quorate since October 2010.

The continuing spirit of collaboration means that we can as a group agree the best way forward for the clinical care of babies in the region.

Representation

Due to the formation of the Network Board there is input from all of the units within the

network. As this document is aimed at securing a non-political clinical consensus it will be distributed through clinicians, nurses and our parent representatives for comments, before being presented to the full Network Board.

Benchmarking

Like many networks ours is still somewhat naïve when looking at benchmarking. Whilst there is much evidence to show that when looking at mortality the units in the region benchmark well against published figures from the UK and Europe there is much less data looking at the morbidity in our population. Whilst it is the intention that this will be collected network wide at age 2 years many units are some way from instigating this. It is therefore currently difficult to demonstrate any direct effects on mortality and morbidity due to any of the current or future issues identified in the Network.

Little net export of babies or mothers out of the region

The Northern Region has a long track record of having to export significantly less (often zero) babies or antenatal mothers out of region due to lack of capacity. This is an absolute testament to the hard work of staff in the units and obviously appreciated by residents of the NE, since being moved out of region has many implications for both families and commissioners alike.

Innovative use of staff

The region has a history of innovating in is use of staff, such as the use of Advanced Neonatal Nurse Practitioners (ANNP's) to run the unit at Wansbeck and the use of paramedics to help with newborn transport. This is a strength that can be built upon in the future.

Education

There is already a good track record of providing education for staff within the region. This includes Newborn Life Support (which was originally designed in the NE), university approved modules for ICU and HDU care for nursing staff, previously ANNP training and more recently the network stabilisation (SCARI) course designed specifically for level 1 units to help them maintain sick babies in an optimum condition prior to transfer. Work has also been done around respiratory care and a master class has previously been delivered for staff.

Weaknesses

Data usage

Whilst the region has been using Badgernet for some time now there is widespread agreement that interrogating the data to extract meaningful information is difficult. It has become apparent, especially recently when looking at extracting data for CQUINs that this is not without its problems. We need to move forward quickly in terms of using the data we collect in a meaningful way to help us both to benchmark more effectively and to continue to push forward improvements in patient care. It is imperative that we continue to have the expertise of a data manager within the network, but it is as yet unclear what will happen with the funding for this post after April 2013. The need for accurate, good quality, comparable data is paramount in order to move forward within the network itself, demonstrating our current standards of care and in the future in order to participate in research studies.

Network vision

We have previously struggled with a lack of a cohesive, unified vision for the Northern Neonatal Network and it is imperative that we now agree a network wide clinical strategy to be able to present to all of our stakeholders. There is a small risk that if we cannot get consensus then any opportunity will be lost and our chance as clinicians to influence purchasers, and ultimately neonatal care, will be diminished forever.

Education

Whilst there is much that is good about education in the network there are some issues. The network educator role has been difficult as the initial posts, which were 50% clinical 50% education proved complex in practice. Again there are also continued funding issues in relation to the sustainability of these roles in the future.

Also there has been concern for some time that our two universities involved in nurse training have been previously unwilling to recognise credits gained from the other institution. It is vital that we get agreement for this so that any credits become "portable" across the region. Some progress has been made in this direction but a definitive solution has not yet been achieved.

Transport

Transport of babies within the region is currently shared between RVI and JCUH. There is increasing concern that this service is in jeopardy due to staff shortages from both the nursing establishment as well as the middle grade numbers. Subsequently as the medical trainee numbers reduce, there may be occasions in the near future when we are not capable of providing a service at all. As it is our current arrangements for transfers, using both medical and nursing staff who are part of the units numbers, means that we leave our units short for the patients we are currently caring for. This is an area of high risk and a solution needs to be found soon to ensure that transport requirements for the region are healthy for the future.

Deficiencies against recommendations

Whilst the North East has a long tradition of doing things differently and at times innovatively there are many recommendations contained within the DH Neonatal Toolkit, which as a network we are some way from being able to meet, nor do we have a plan to do so. Nursing staffing levels are obviously of concern and data from 2011 has shown significant deficits in our NICUs.

Unit	RVI	JCUH	Sunderland	North Tees
IC babies/day	8.6	5.6	5.2	3.9
HD babies/day	9.1	3.6	2.4	3.3
(SC babies/day)	(11.9)	(9.8)	(7.2)	(8.7)
Actual nurses/day	14.3	7.2	6.0	6.7
Recommended/day	17.0	10.8	9.2	8.7
Deficit per day	2.7	3.6	3.2	2.0
Extra number of nurses required	15	20	18	11

Such deficiencies are also seen in special care units.

It is also a concern that most units have significant numbers of staff (both medical and nursing) who are likely to retire in the short to medium term and that there is little evidence of succession planning in these units. Indeed increasingly many are relying on staff who have already retired coming back and covering some shifts. Obviously many of these staff are very experienced and will be difficult to replace but substantial investment in staff has been slow and difficult.

Little net export of babies or mothers out of the region

Whilst sending few patients out of the region for their care is a strength, it is also a weakness. When units flex their capacity or babies need transferring within region because of lack of capacity locally this must inevitably mean that the babies already being cared for on the unit may have their care compromised, especially as we already know that nursing numbers are relatively low. Other regions have invested heavily in nursing numbers (including Yorkshire and Humber) and there must be some move to parity of numbers across the North (which now includes the NW and Yorks and Humber).

Parent accommodation

We know from the Picker survey and local knowledge that parent accommodation availability and quality varies between units. It is very difficult get trusts to invest in these facilities in times of financial austerity and despite charitable funds covering some costs, refurbishment and rebuilds in order to reach the target of one bedroom for each Intensive care cot are extremely expensive and out of the reach of most units.

We also know that there is marked variability between units about which parental expenses can be reimbursed when travelling is required. This can obviously be a substantial outlay for some families.

Commissioning

At present intensive and high dependency care are commissioned by Norscore but special care is not. It is very difficult to ensure seamless high quality clinical care when the whole service is not purchased by one commissioner.

This is currently not a joined up system but must be in the future, to ensure both quality and data capable of being looked at in a more complete fashion.

Opportunities

Commissioning

It seems clear that neonatal care will be paid for by a tariff system. What is as yet unclear is whether national commissioning will include special care but this will hopefully be the case. An indicative tariff has been published and a quick calculation of its possible effect using these figures on current activity is shown below in appendix 1.

As Norscore do not currently commission special care in the network for the four NICU provider or any other units this is likely to reduce the amounts they receive from Norscore for IC/HD care but this should be offset by payments for SC. At present it is unclear how commissioning for newborn services will be organised from 2013/14. It is apparent that IC/HD care will be through the National Specialised Commissioning Board but it will surely be easier for all regions if this group can also commission SC so that all care is paid through one commissioner for simplicity.

Currently these suggested tariffs specifically exclude transport, which obviously would have implications for RVI and JCUH.

Restructuring

Looking at the current medical staffing of the intensive care units in the region it seems likely that status quo will not be possible without significant investment. If consultant numbers remain the same and junior doctor numbers continue to decrease (there are already significant shortages on most rotas) then it will be impossible to run 4 concurrent rotas. It also seems likely that there will be an increasing desire for services to be consultant based rather than consultant led. This means that if we are aiming for 24hr consultant cover with the present 19.6 WTE consultants it will be only possible to staff 2 units. This would also mean that there will be more nurses available in these two units. Geographically this would need to be a lager unit in the north and a smaller unit in the south. Both would need to provide essential, associated services such as a fetomaternal and high risk obstetric service, maternal intensive care and specialty services such as renal, cardiac and neurosurgery as well as neonatal pharmacy, radiology and dietetics. The north unit would almost certainly need to be RVI due to its proximity to cardiac and neonatal surgical services. The south unit would need the same services on the same site. Currently no unit is sufficiently large enough to house the total capacity required in this postulated reconfiguration with antenatal space as well as a significant increase in available parent accommodation also required A smaller number of units may also mean that it would be possible for the 2 units to offer more parity in what parent expenses they can reimburse.

Alternatively, if the region wanted more than 2 units it would require another solution. There seems little future for 4 units as the staff requirements are prohibitive. Without a large investment other solutions cannot allow 3 units either. These could be resident consultants (very expensive) and the use of ANNP's at middle grade. The latter will allow a more resilient middle grade rota but there is a significant cost and lead in time to develop ANNP's into this role. It also perseverates a middle grade based rota (albeit with more permanent staff) and does not make the service more consultant based. It would also need careful succession planning and some inbuilt redundancy: one thing that has become apparent from Wansbeck is that a member of a small team leaving is hard to replace and has a significant effect on service provision.

Transport

As has been intimated previously current transport arrangements are becoming increasingly precarious and a more stable solution is required. Most if not all of the other networks have opted for a standalone transport service for acute, cold and back transfers. To be effective such services need to run at all hours. Such a service can also offer call handling for antenatal transfers which is not currently available but is part of the requirements from NICE and the DH Toolkit.

If it is felt that there would be insufficient activity for a standalone team then one option would be to combine such a service with PICU transfers to increase numbers. A large percentage of PICU transfers are respiratory problems in infants and well within the clinical competence of neonatal transport nurses. Also even with older children there are considerable transferable skills. PICU transfers in the Northern region are currently predominantly done by consultants but this leaves the base unit uncovered, which is not acceptable.

Commissioners may want to pay for a complete new service or wish to commission an extension of a current service which has a staffed call centre with call handling abilities, a governance and training structure already in place: logically this would be EMBRACE, the Yorkshire and Humber team who could either provide cover from their current HQ (geographically problematic as this is in Barnsley) or by using an outreach centre (this would best be sited somewhere around Durham or Sunderland). Whatever is decided this will be a significant expense both capital and revenue. There is no doubt that should paediatric cardiac services be reconfigured as planned there will be a significant increase in cardiac cases requiring transfer to and from Newcastle: the trust is yet to describe how they see this being achieved.

Guidelines and cost-effective care

With 4 intensive care units it has proven difficult to get agreed guidelines/pathways to ensure comparable care and the most effective use of available resources. In such austere times both are vital and with 2 NICUs it would be easier to ensure parity. It would also allow these units to invest in follow up of all high risk patients in these units as the workloads should be high enough to warrant identified teams to provide such a service. This in turn will improve the accuracy of our outcome data.

Education

Larger units will also give more educational capacity so that training opportunities for staff who wish to get periods of experience in large NICUs would be easier to arrange. It will be more than sufficient for the capacity for medical neonatal training posts which are required (both for higher specialist and core training). Senior staff would also have more time to be involved in delivering such training to all staff groups to improve its quality still further.

Threats

Staffing

As has already been described there is a significant short to medium term concern about retirements in both senior nursing and medical staffing numbers. It is imperative that this problem is addressed as soon as possible lest it has a significant deleterious effect on the service, which is already under severe pressure.

The reduced availability of junior doctors is now chronic, unlikely to improve and if anything likely to worsen as numbers will be reduced centrally as evidence suggests the current training numbers are overproducing trained doctors. The current absence of any succession planning is of great concern and needs to be addressed as soon as possible.

Restructuring

Whilst being an opportunity it is also a threat. Change is always difficult and it is likely that some older staff may be persuaded to retire or to leave the intensive care environment to work in a less pressured special care environment. This would obviously exacerbate the staffing threat above.

It can also be difficult to manage the change when staff feel they have been forcibly combined with another unit and many of these staff feel disadvantaged. To reduce such

effects it is vital that all staff are include in reconfiguration planning and kept up to date with all decisions that are taken. Misinformation and rumours are often responsible for significant amounts of staff concern.

Tariff

The figures shown previously would suggest that most if not all of the current 4 NICUs may be better off with the indicative tariff. Much of this is predicated on the improved payment for special care patients. Such an increase in payment for such patients would also be payable to Special care units whose trusts would therefore stand to gain. This is likely to make reconfiguration more difficult if anything. If the tariff is not at this level or special care is left to be commissioned by Clinical Commissioning Groups then many units may lose money and this would certainly jeopardise investment in the service (and some trusts may even consider withdrawing such service provision). Certainly it would appear that in a tariff based system there will be no out of area transfers (OATS) which currently provide significant extra income to the NICUs.

Geography

The region population splits into North and South (about 66% to 33%) but this still leaves significant number of patients from more rural areas to travel significant distances. It is obviously important that there is a link between obstetric services and neonatal services. Most deliveries do not need neonatal services so can happen near to home. However further centralisation will inevitably increase the number of transfers and the distance some of these patients are having to travel.

Politics

Foundation trusts are individual businesses. Reconfiguration will possibly have a detrimental effect on income for some trusts. Changes to maternity (downgrade to midwifery led units) is often associated with decreasing deliveries, increasing cost per delivery and often finally closure with its political cost. Reconfiguration of staffing can also sometimes compromise paediatric and accident and emergency services and their corresponding income streams. Downgrading of maternity services also may lead to a decrease anaesthetic cover and obviously increases the number of higher risk patients needing transfer.

It is impossible to know how easy it will be to "sell" any reconfiguration on clinical grounds to individual trusts, but this should not stop us trying to reach a clinical consensus. In addition with a tariff system commissioners have less opportunity to shape services by flexing their purchasing power.

Priorities

- Agreeing a reconfiguration plan
- Looking at staffing requirements and succession planning as soon as possible.
- Planning any building works required.
- Have a plan for transport
- Look at educational requirements and how and by whom these can be provided
- Improve our use of data to improve patient care and develop better outcome data.
- Improve our parent accommodation and facilities

S Byrne – Clinical Lead, Northern Neonatal Network, October 2012

Appendix 1

Unit	IC Days (2011-12)	HD Days (2011-12)	SC Days (2011-12)	IC Costs (£997 per bed day)	HD Costs (£726 per bed day)	SC Costs (£429 per bed day)	Total care costs (£)
Newcastle	3158	3437	5656	3,148,526	2,495,262	2,426,424	**8,070,212**
JCUH	1652	992	3218	1,647,044	720,192	1,380,522	**3,747,758**
North Tees	1235	1001	3177	1,231,295	726,726	1,362,933	**3,320,954**
Sunderland	1072	1083	3269	1,068,784	786,258	1,402,401	**3,257,443**
Ashington	152	115	2712	151,544	83,490	1,163,448	**1,398,482**
Carlisle	108	157	2410	107,676	113,982	1,033,890	**1,255,548**
Darlington	79	185	2342	78,763	134,310	1,004,718	**1,217,791**
North Durham	87	283	2237	86,739	205,458	959,673	**1,251,870**
Gateshead	103	69	2637	102,691	50,094	1,131,273	**1,284,058**
West Cumberland	55	104	2468	54,835	75,504	1,058,772	**1,189,111**
South Tyneside	54	85	1662	53,838	61,710	712,998	**828,546**
Friarage	28	48	1999	27,916	34,848	857,571	**920,335**
Total	**7783**	**7559**	**33787**	**7,759,651**	**5,487,834**	**14,494,623**	**27,742,108**