County Durham and Darlington NHS
NHS Foundation Trust

County Durham & Darlington NHS Foundation Trust

Annual Report for the Neonatal Service

2016

Comprising the University Hospital of North Durham Neonatal Unit

and

Darlington Memorial Hospital Neonatal Unit

with you all the way

Foreword

This is the *second* Neonatal Service annual report for County Durham & Darlington NHS Foundation Trust. I trust you will find it informative and recognise that it contains some new sections, building on the previous 2015 report. I hope that this report is useful for the families served by our service, the Trust, the Northern Neonatal Network and beyond.

The production of this report would not have been possible without the drive and persistence of Sister Julie Sanderson, Sister Jan Klinke, and the many other individuals who have made contributions. Once again we thank Mark Green (Network Data Manager) for his continued support.

This report builds on last years statistics and additionally includes new sections on term admissions and neonatal transfers. Once again we aim to provide a broad overview of the service, highlighting successes, on-going projects and future challenges, such that the reader will begin to appreciate the day to day workings of the service, and understand our priorities and motivations.

Any comments and suggestions are welcomed, as we strive on this report, year on year.

Dr Mehdi Garbash

Paediatric Consultant and Neonatal Lead

County Durham & Darlington NHS Foundation Trust

Service profile

There are 24 special care (level 1) cots – 12 of these in the neonatal unit at University Hospital of North Durham (UHND) and 12 in the neonatal unit at Darlington Memorial Hospital (DMH).

These sites are over 22 miles apart and because of this the service covers a large geographical area.

Both units provide continuing special care for babies born after 30 weeks gestation, and in addition provide short periods of intensive care and high dependency care when necessary.

Transitional care, where babies remain with their mothers during care delivery, is provided on both sites, in conjunction with our midwifery colleagues.

Early, supported discharge of babies from the units and from transitional care is also made possible as neonatal nurses can offer home visits and telephone support as part of a community outreach package.

The units are staffed by a team of paediatric doctors and neonatal nurses. We have access to physiotherapists, occupational therapists, speech and language therapists, audiology, and other specialties as needed.

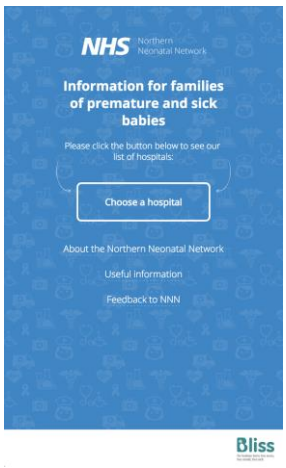
We are part of the Northern Neonatal Network and as such we partner with the other providers of neonatal services in our region so that babies are cared for in the most appropriate setting for their needs and as close to home as possible. We are represented at governance, clinical and board meetings.

Details can be found at http://nornet.org.uk/

Northern Neonatal Network App

More information on our neonatal units and background information for parents with babies in our care is available via the *free* Northern Neonatal Network App, available for Apple and Android (iTunes and Google play stores).

Anonymous feedback can also be left via this App.



Philosophy of care

We provide a supportive and nurturing environment for babies who have been born too soon or too sick, who are vulnerable and who may have complex needs.

Care is to be centred on the family and we therefore focus on the importance of building this relationship, before delivery if we can. Each baby is an individual, so we implement individualised care plans that take account of the needs of the baby, as well as family wishes, and ensure that these plans are continually evaluated and updated. We invite the family to deliver care where this is possible and offer support and training to do this where this is needed.

Facilities available at Darlington Memorial Hospital

Parent's sitting room, two family rooms, breastfeeding room/support

Facilities available at University Hospital of North Durham

One en-suite family room, breastfeeding room/support

UNICEF Accreditation

Following our Trusts successful UNICEF accreditation in 2015, both Neonatal Units continue to work closely with our colleagues in Maternity and Health Visiting to deliver consistent, high quality care to the families that use our service. Our Trust will be reassessed this year by UNICEF to ensure standards are still being met.

Unfortunately we are not yet in a position to work towards the Neonatal award with UNICEF but it is something that we hope to revisit in the near future.

Staff members from both neonatal units attend breastfeeding training every three years, delivered by the Trusts infant feeding co-ordinators, and also receive annual updates delivered by the Infant Feeding lead for Neonates. This update covers:

- breastfeeding
- hand expression
- parent and infant relationships
- and any neonatal specific issues that have been highlighted by staff and families

Initiation rates for breastfeeding and expressing on our Neonatal Units do vary, but we continue to highlight the benefit of breast milk for all of our babies.

Our Trust is also working closely with our local Community Trust to embed the Best Beginnings BabyBuddy App. We hope that this will also help to support families we care for.

BLISS and Community Support Groups

The Bliss Baby Charter focuses on providing the best possible family-centred care for premature and sick babies - putting our parents at the centre of their babies care. Family centred care is important to our service as research has shown that it is hugely beneficial to babies and their parents. It can lower a baby's stress levels, promote better health, shorten hospital stays and reduce hospital readmissions. It helps parents bond with their baby and improves their confidence as a parent.

A Bliss family support group was established in the Durham area and has been running since September 2015. As well as acting as a play group for babies, the group offers parents and relatives the chance to socialise and share advice with others who have had similar experiences. We have recently also held a Christmas party for families and feedback so far has all been positive.

In 2016 a similar Bliss family support group started in the Darlington area, and is proving popular.

Some of our nursing staff have also trained in baby massage and will be bringing this skill to the groups in the near future.

Developmental care

It is important to create an environment that minimises stress to the infant, while providing a developmentally appropriate experience for the infant and family. Interventions aim to support the developing behaviours of individual infants, enhance their physiological stability and protect the baby's sleep rhythms while promoting growth and maturation.

These interventions include optimal handling and positioning measures, reduction of noxious environmental stimuli and providing cue based care.

Several staff have attended the Foundation Toolkit Study days that are held regionally and continue to share good practice across the region.

Transitional care – keeping mothers and babies together

The neonatal service continues to promote transitional care for as many families as possible, as this enables many babies to remain with their mother on the postnatal ward, while still receiving a higher level of input than would normally be expected following delivery. Care is delivered by a team of neonatal nurses, midwives, paediatricians, and excitingly a new team of vulnerable baby support workers who work solely with this group of babies and their families.

We do not have a limit on the number of babies that can be cared for in this way.

Babies suitable for transitional care arrangements include:

- babies born after 35 weeks gestation weighing at least 1800 grams who have been assessed by the paediatricians as suitable to be nursed on the postnatal ward
- babies born after 35 weeks gestation, weighing at least 2000 grams
- babies requiring regular blood glucose monitoring, such as babies with diabetic mothers
- babies requiring treatment for possible infection
- babies requiring treatment for neonatal abstinence syndrome
- babies recently discharged from special care facilities

In 2016 we were shortlisted for a national award **-** The Midwives Magazine Award for Team of the Year – and although we did not win we are delighted to have been shortlisted and to have had our commitment to delivering a high quality, effective and efficient transitional care service nationally recognised.

An additional benefit of this project has been an impressively low term admission rate to the Neonatal units with a subsequent lesser impact upon our local maternity services, and their ability to deliver women locally.

Pilot project – Vulnerable Baby Support Workers

In October 2016 child health and maternity services on our UHND site combined funding to recruit and train 3 vulnerable baby support workers (band 3 level). Their role is to babies and their families where extra support is needed following delivery, working between the postnatal ward and neonatal unit, assisting both the midwifery and neonatal teams.

This new role is being piloted for 12 months, and will be evaluated at toward the end of this time with the hope that this can be extended to both sites and to cover 24 hours a day.

The numbers

The following tables present the data with respect to neonatal service workload. We have included statistics from the last 4 years for comparison purposes, and envisage that over time we will be able to identify any changing trends that are likely to impact service provision.

Data is regularly collated using Badger and we have extracted data from this source for this section of the report.

Regular data is also provided to the Northern Neonatal Network and is available in quarterly and annual report formats. This information can be accessed via the link below:

http://www.nornet.org.uk/Data

We strive to make our data as accurate as possible, although there may be minor discrepancies for which we apologise.

Abbreviations/Definitions	
Badger	The national neonatal dataset collection system
SCBU Special care baby unit	Provides special care facilities for local population, as well as some high dependency and intensive care for shorter periods
DMH	Darlington Memorial Hospital
UHND	University Hospital of North Durham
Live birth	Baby born alive regardless of duration of gestation
Stillbirth	Death before delivery, over 24 weeks gestation
Inborn	Born in or en-route to DMH/UHND
BAPM 2011	British Association of Perinatal Medicine classification
Intensive Care (IC)	In our context, when a baby receives mechanical respiratory support via tracheal tube or any day with an umbilical arterial line, umbilical venous line, peripheral arterial line, insulin infusion, chest drain, prostaglandin infusion, repogle tube or silo for gastroschisis
High Dependency Care (HD)	In our context, when a baby does not fulfil the criteria for intensive care, but receives any form of non-invasive respiratory support or any day receiving continuous infusion of drugs, presence of a central venous or long line, tracheostomy, catheter, nasopharyngeal airway/nasal stent, observation of seizures, barrier nursing, ventricular tap
Special Care (SC)	Where a baby does not fulfil the criteria for intensive or high dependency care, but requires oxygen by nasal cannula, feeding by nasogastric, jejunal tube or gastrostomy, continuous physiological monitoring (excluding apnoea monitors only), care of a stoma, presence of IV cannula, receiving phototherapy, observation of physiological variables at least 4 hourly
Transitional Care (TC)	Special care which occurs alongside the mother but takes place outside a neonatal unit, in a ward setting

SCBU DMH

	2013	2014	2015	2016
Total live births, DMH	2288	2181	2227	2085
Total stillbirths	9	8	5	8
Admissions to SCBU	222	207	219	245
Transitional care admissions	234	319	424	462
% admitted to transitional care	10.2%	14.6%	19%	22%
% live births admitted to SCBU	9.7%	9.5%	9.8%	11.7%

SCBU UHND

	2013	2014	2015	2016
Total live births, UHND	3006	3145	3082	3077
Total stillbirths	13	9	11	11
Admissions to SCBU	230	267	261	275
Transitional care admissions	378	529	608	577
% admitted to transitional care	12.6%	16.9%	19.7%	18.7%
% live births admitted to SCBU	7.7%	8.5%	8.5%	8.9%

Demography of admissions (DMH + UHND)

	2013	2014	2015	2016
Total admissions	452	474	480	520
In-born booked	351	337	371	378
In-born booked elsewhere	10	18	9	14
Postnatal transfer in	36	45	37	60
Re-admissions	55	73	52	68

Gestation (weeks)	2013		2014		2015		2016	
<26	8	1.8%	8	1.7%	9	1.9%	6	1.2%
26-30	61	13.5%	57	12.0%	53	11.0%	44	8.5%
31-36	221	48.9%	196	41.4%	210	43.8%	274	52.7%
>36	162	35.8%	213	44.9%	208	43.3%	196	37.7%
Total	452		474		480		520	

Activity levels in days (BAPM 2011)

	2013	2014	2015	2016
Intensive Care	98	95	85	103
High Dependency Care	371	466	373	405
Special Care	6791	7073	5583	4712
Transitional Care	Not measured	2658	2705	2777
Total	7260	10292	8746	7997

Key points

- Over the last 4 years we see that the total number of deliveries is relatively stable on each of the sites
- Despite this the number of admissions to SCBU is slowly increasing, as is the case nationally – thought to be influenced at least partly by changes in maternity and obstetric guidelines
- The percentage of **all admissions** to SCBU following delivery is consistently below 10%
- There is maintained demand for transitional care which is now delivered to almost 1 in 5 babies
- There appears to be a high level of consistency between sites in respect to admission and transitional care policy, as we would hope
- The proportion of babies born under 30 weeks continues to reduce, indicating that at a Network level more of our babies are being delivered in facilities with the correct infrastructure
- The provision of transitional care has meant that the number of days of special care provided to our babies continues to fall as we are successfully keeping more babies and mothers together

Term admissions to SCBU 2016 (excluding congenital anomalies)

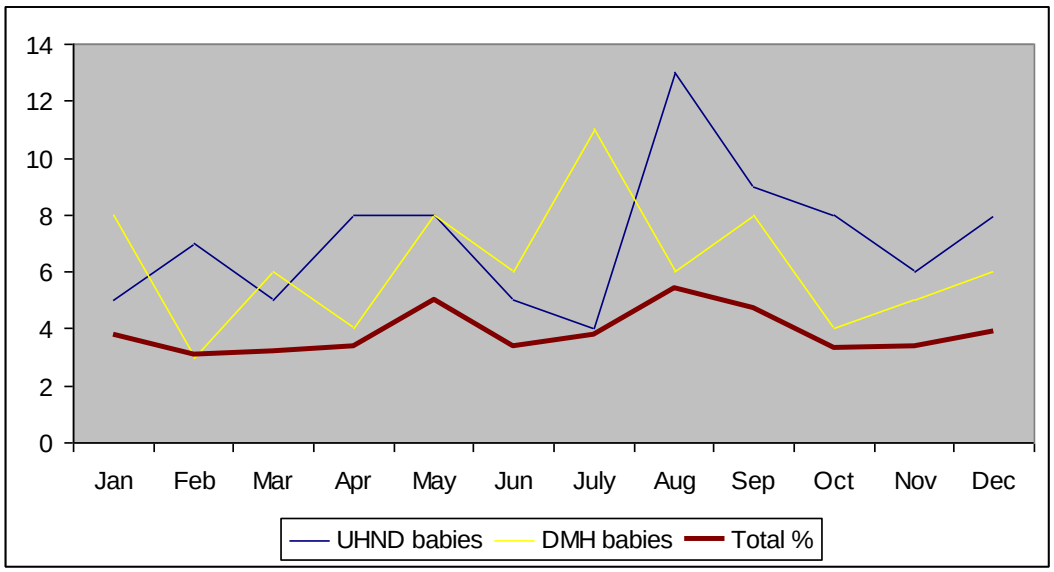
This new section of the annual report is included to highlight both the low rate of term admission that we have within our service, and as it is now a national maternity indicator through which units can be benchmarked with each other.

	UHND	DMH	Total
Total deliveries	3088	2089	5177
Total Term deliveries	2502	1645	4147
Total Term admissions	86	75	161
% of term babies admitted	3.4	4.5	3.9

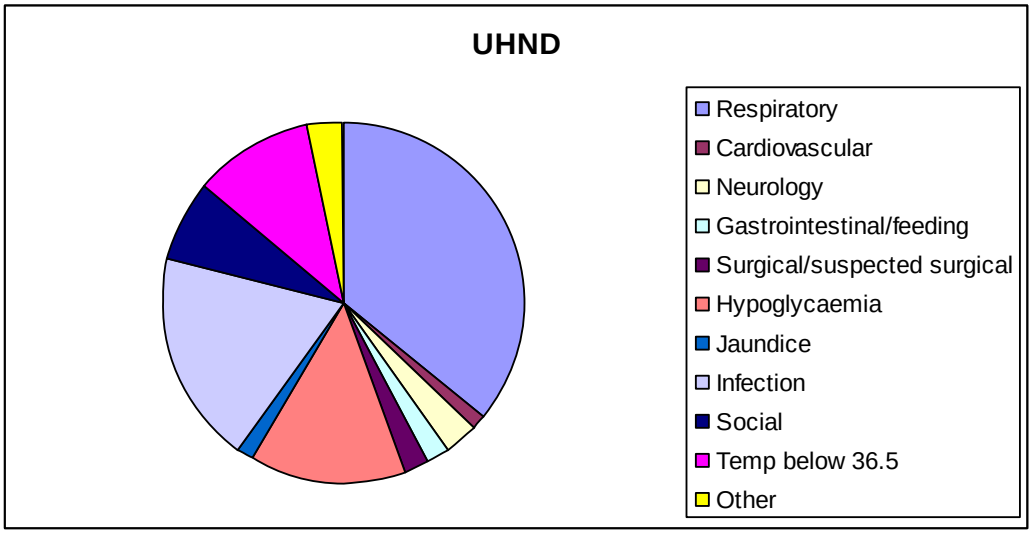
Monthly term admission rates

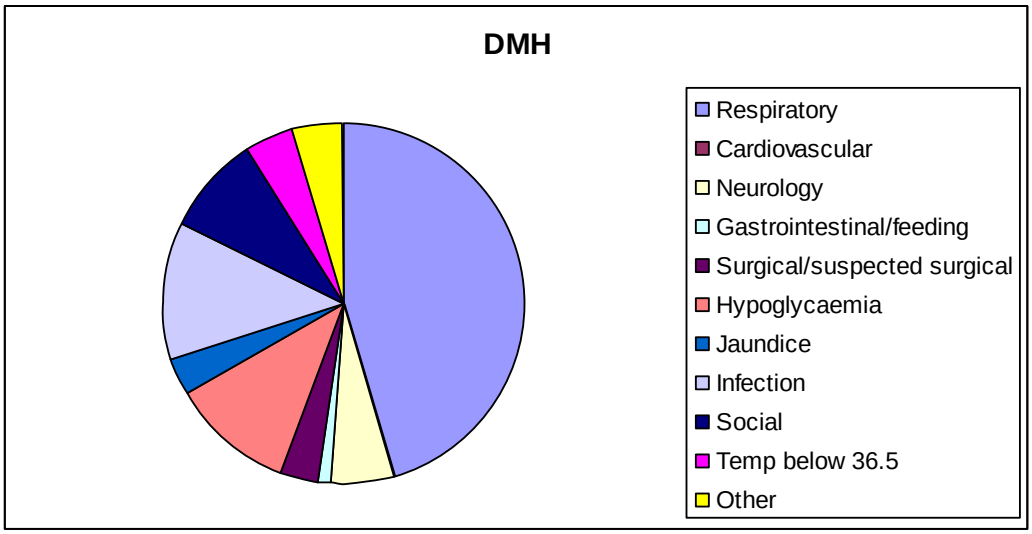
2016	UHND babies	UHND %	DMH babies	DMH %	Total babies	Total %
Jan	5	2.5	8	5.7	13	3.8
Feb	7	3.5	3	2.6	10	3.1
Mar	5	2.4	6	4.3	11	3.2
Apr	8	3.7	4	2.8	12	3.4
May	8	4.4	8	5.7	16	5.0
Jun	5	2.6	6	4.6	11	3.4
July	4	1.7	11	7.0	15	3.8
Aug	13	6.6	6	3.9	19	5.4
Sep	9	4.1	8	5.7	17	4.7
Oct	8	3.4	4	3.2	12	3.3
Nov	6	3.0	5	3.9	11	3.4
Dec	8	3.6	6	4.4	14	3.9

Term admission numbers for both sites including overall percentage



Reasons for term admission





Respiratory illness - highest level of support needed

	UHND %	DMH %
Ventilated	14	5
CPAP/HFO	42	29
Oxygen only	29	31
Monitored only	15	35

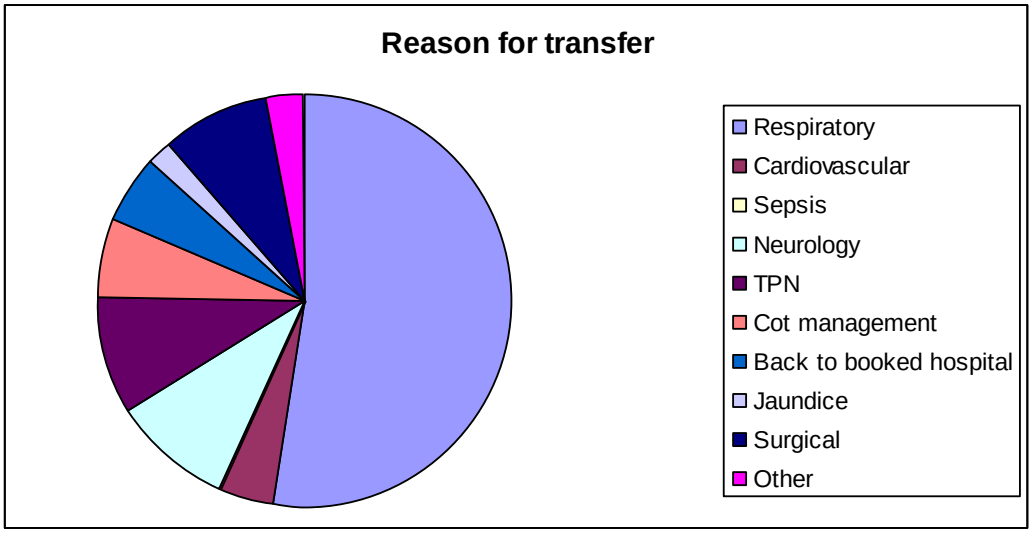
Key points

- The percentage of **term babies** admitted to SCBU is impressively low
- This is monitored monthly via perinatal team meetings to look at potential trends
- Comparing UHND with DMH allows us to reflect on practice
- Greater number of term babies admitted had a low temperature at UHND – pointing to the need to review potential differences in practice and ensure that the clinical environments are not a barrier to maintaining temperature
- A larger percentage of term babies admitted to DMH with respiratory concerns did not require intervention, but were only monitored for this concern – this is safe practice but may indicate that some babies were separated from their mothers unnecessarily
- The introduction of the Vulnerable Baby Support Workers has ensured that care is delivered in a timely manner and that families are better supported – we hope to present feedback on this role next year
- Compared to the national statistics our admission levels for jaundice are very low

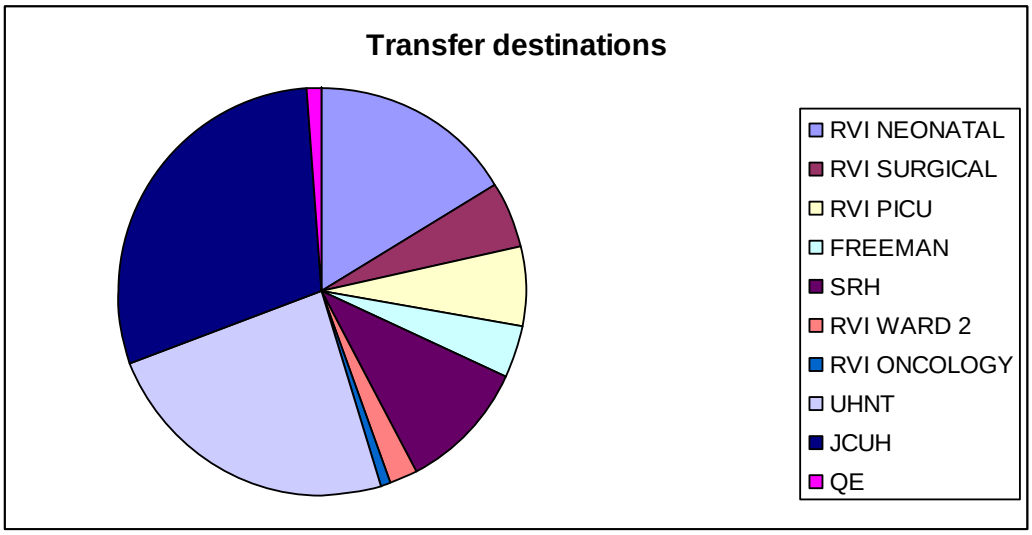
Transfers out of CDDFT 2016

CDDFT total	UHND	DMH	% total births
97	56	41	1.8%

2016	Number of transfers	Preterm	Term
Jan	5	4	1
Feb	8	6	2
Mar	9	8	1
Apr	6	3	3
May	13	7	6
June	8	5	3
July	5	2	3
Aug	7	2	5
Sept	12	11	1
Oct	5	4	1
Nov	11	7	4
Dec	8	5	3
Total	97	64	33



Transfer destinations



Key points

- Transfer cases are summarised quarterly and examined to look for emerging trends/themes, as part of our perinatal team meeting
- As you would expect, the majority of transfers are to provide a continuation of a higher level of care that was started locally
- A few transfers are secondary to capacity issues, both within our Trust, and within the wider Neonatal Network
- We are happy to report that no families were transferred outside of the Northern Neonatal Network in 2016, however, it can be seen that the destination for babies and their families is spread across the region due to our Trusts unique geographical position

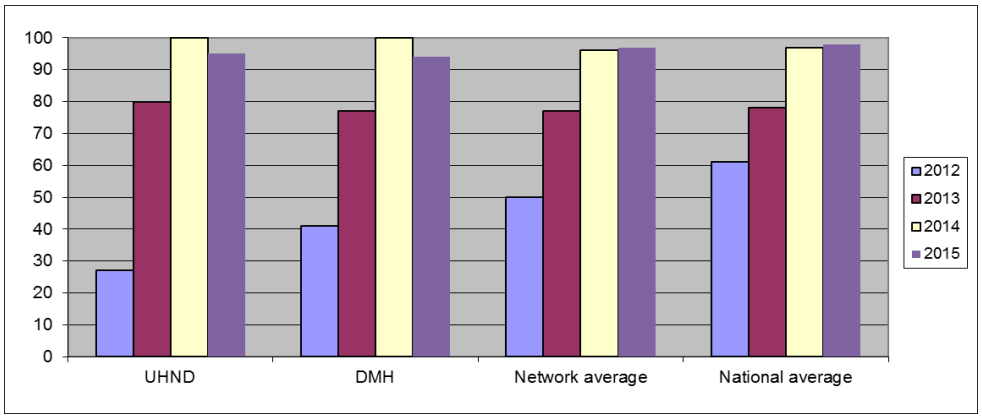
National Neonatal Audit Programme (NNAP)

The NNAP was established to support professionals, families and commissioners in improving the provision of care provided by neonatal services.

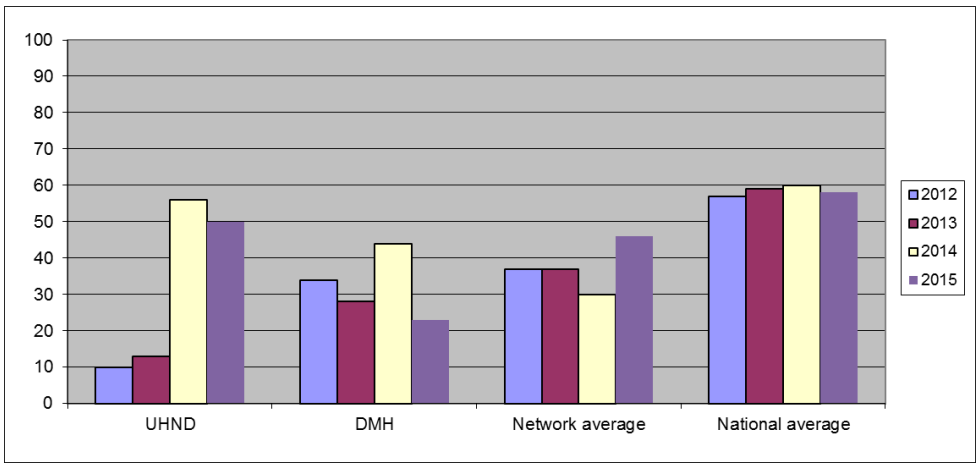
The NNAP measures care based on data provided annually by all levels of neonatal unit. The audit informs action planning at a unit, network and national level.

We include a summary of our results from the last 4 years with network and national comparisons. We have seen and maintained improvements in some key areas – namely in Retinopathy of Prematurity (ROP) screening and Breastfeeding rates in preterm babies born before 33 weeks gestation, although you can see that this is a particularly changeable parameter.

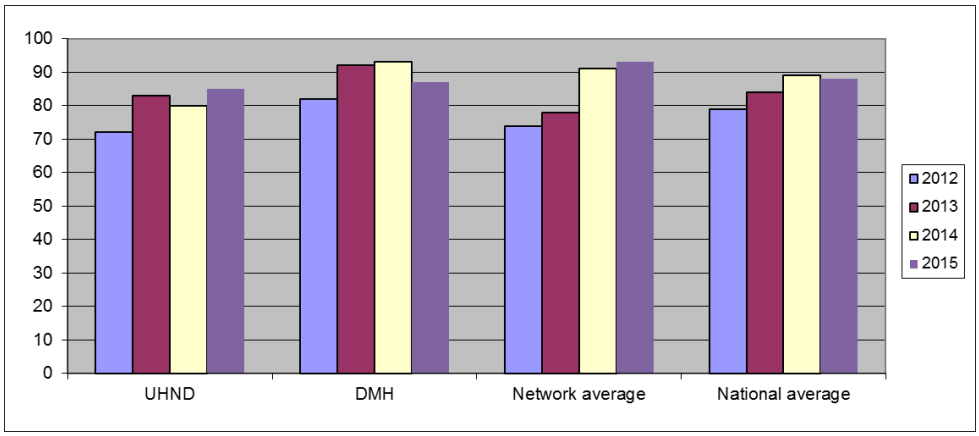
ROP screening performed as per national recommendation



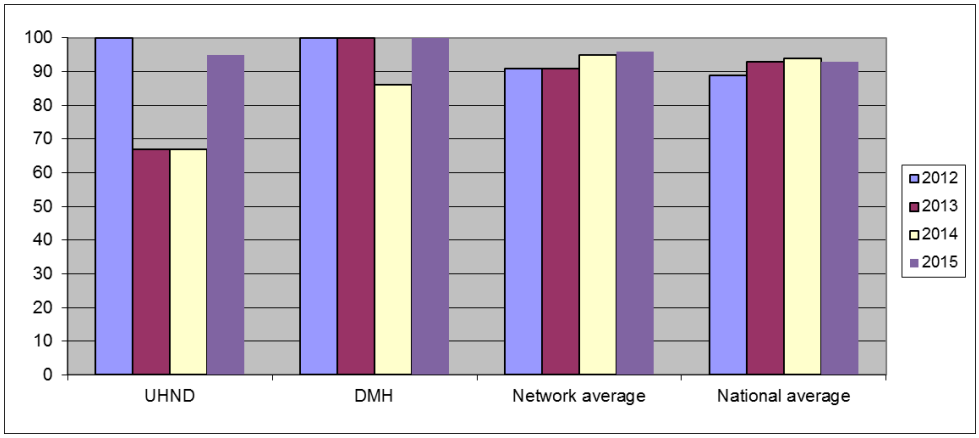
Breast milk at discharge for preterm babies born under 33 weeks gestation



Consultation with parents within 24 hours of admission by senior medical staff



All babies <32 weeks gestation have temperature taken within 1 hour of birth



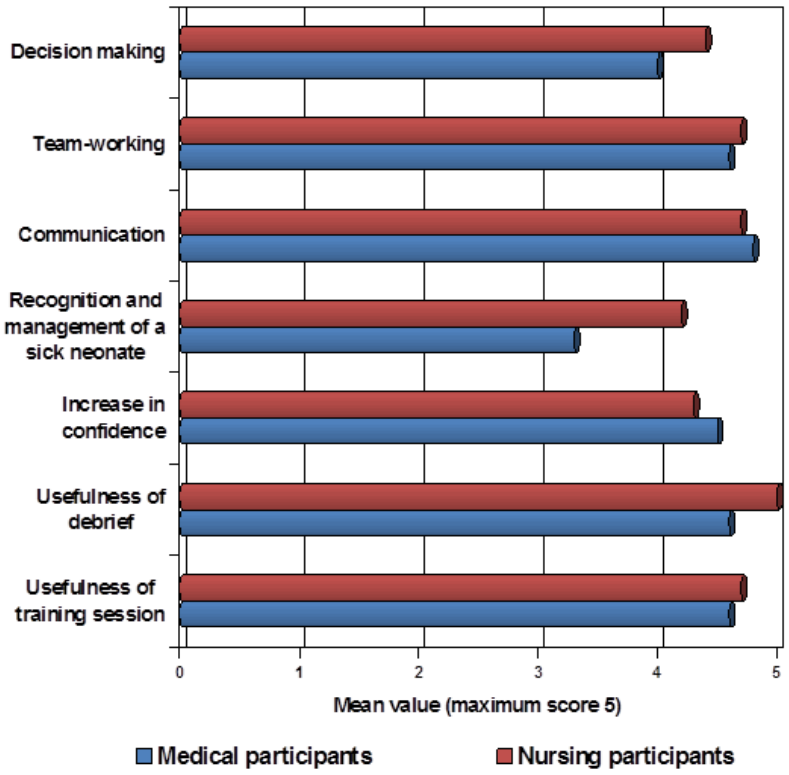
As a service we are looking to improve in the following areas:

- data quality – as our results can only be as good as the data we provide
- increasing attention to temperature management
- improved documentation of discussions with families following admission to our neonatal units
- continued support and advocacy with respect to feeding with breast milk
- collection of 2 year developmental follow up data for babies born before 30 weeks gestation

NEST (Neonatal Emergency Simulation Training)

We have delivered in situ hi-fidelity neonatal simulation scenarios since October 2015, taking place in both of our neonatal units.

We have recently evaluated our feedback on the sessions to date, and summarise the findings below.



RCPCH poster presentation

A summary of our work on this project will be presented at the RCPCH annual conference 2017, to be held in Birmingham. The abstract will be published in Archives of Diseases in Childhood.

Human factors training – multidisciplinary immersive simulation

This year we have been embedding a new training programme focussing on human factors and the interactions between teams and patients in order to help maintain performance and outcomes across the service.

This training puts staff from obstetrics, maternity, paediatrics and neonates together to explore and participate in deliberately challenging immersive simulated scenarios, making use of our Clinical Simulation Centre and its facilities.

While this training is just beginning toward the end of 2016 we will be in a position to present feedback and future plans in our next report.

NLS – Newborn Life Support

Most of our nursing staff hold a current NLS qualification and 3 are also NLS instructors. All medical staff are holders on NLS certification before attending deliveries without senior supervision, and many midwives are also trained in this set of skills.

In addition to re-certification, the service supports annual updates for all staff with in house NLS trainers who work as band 6 sisters on the units. Our Trust also hosts 4 NLS courses each year which are open to internal and external candidates. We have 3 neonatal sisters registered as instructors and 5 paediatric consultants who also instruct on these courses. All instructors also support the delivery of NLS courses in other units across the Northern Neonatal Network.

Research projects

Both units are still Continuing Care sites for the ELFIN trial as it nears completion. The ELFIN trial studies whether the administration of lactoferrin prevents late-onset infection in babies born at less than 32 weeks gestation.

We have been continuing care sites for the SIFT trial and the 2 year follow-up data is currently being collected by the Trust to relay on to NPEU with respect to this.

With a Paediatric research nurse in post, and with increased collaboration across the network, staff are more aware of ongoing research projects, with both newly appointed and established staff keen to be involved.

Audits

Regular local and national audits are undertaken to benchmark and improve practice and outcomes, by all members of the multi-disciplinary team.

Locally, monthly audit includes case note standards and High impact interventions for Infection prevention and control, in accordance with Trust requirements. The NHS Safety thermometer, a national tool for measuring potential harm and the proportion of patients who are harm free, is also undertaken.

Audits for the coming year include the provision of emergency equipment both on the units and outside the neonatal unit environment, monitoring of attendance at deliveries, the stabilisation process (golden hour) and continuing of our work on term admissions to the neonatal unit. We hope to also begin to look at occasions where transitional care babies are subsequently admitted to the units also.

Challenges

Some of the challenges for the next year have already been outlined in the different sections of this report and are particular to a service of our size and configuration.

We strive to continually improve the quality of our data, and try to extract information that we hope will be of interest to the reader. Some of the areas we would like to report on in future reports are:

- the reasons for transitional care admissions to SCBU
- continue to examine the reasons for transfer of babies
- continue to assess the number of term baby admissions and the reasons for their admission
- NEST project feedback and plans
- Human factors training feedback and plans

Concluding remarks

Wider difficulties with staff recruitment and retention, as well as potential reconfiguration of services within the region, against a backdrop of financial constraint, ensure a level of uncertainty with respect to the future shape of the service and how this may be transitioned over the coming years. No doubt this will be a challenge, but our core business remains the same – looking after babies and their families to the highest standard.

If you have any comments or suggestions for future reports please contact either:

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Or Ann Bowes, Service Manager ann.bowes@nhs.net