# The Northern Neonatal Network

An Operational Delivery Network

## Annual Report 2016-17

# The Northern Neonatal Network. Our year 2016-17 at a glance

- The Network has continued to implement and support the various recommendations made by the Invited independent external Panel from the Royal College of Paediatrics & Child Health (RCPCH) in their Report of 2015. Focusing on the reconfiguration of neonatal intensive care services, the Network has worked with partners and stakeholders across the four Trusts involved and NHS England to bring about implementation. The first main part of this was to move the care of all babies less than 27 weeks gestation from North Tees to James Cook University Hospital (JCUH) and achieved in late September 2017. More work is now under way to move through the other stages needed to see all intensive care transferred to JCUH in due course and the current focus is on nurse recruitment there as well as agreed consultant rotas to allow cross cover during the transitional phase
- Following the business case that was submitted to NHS England in 2015 for a standalone, newly funded neonatal transport team to provide a Network-wide service, recruitment was undertaken in earnest with key posts being filled during 2016 to "NNETs" (Northern Neonatal Transfer Service). Based on a new model that will see Advanced Neonatal Nurse Practitioners (ANNPs) delivering the care with teams of nurses supporting them, the service has been making significant progress and now provides all neonatal transport services across the Network under the leadership of a new Neonatal Transport Consultant (Dr. Rob Tinnion). A full report on the service and its development to date can be found in elsewhere in this document.
- We were disappointed that after a significant amount of time and effort in conjunction with Health Education North East (HENE) to create a local course for the training of Advanced Neonatal Nurse Practitioners (ANNPs) with a suitable local university., when the process was opened up for tendering, there were no bids to run the course as agreed and funded by any Higher Education Institutions (HEIs). However, with further discussions, HENE agreed to use the money they had ring-fenced for the course to support the training of ANNPs at another course in Sheffield that was already well established and running for the same 3-year period. This will enable vital ANNP posts to be filled and the continuing provision of high quality neonatal services that may otherwise have been threatened. The first cohort commenced their studies in October 2016 with the next in 2017. Feedback from the course to date has been excellent.
- In late 2016, the Network helped supply data and feedback that will be used to undertake a national Neonatal Review. The results and recommendations of this are awaited but expected imminently at the time of going to press and we anticipate being heavily involved in implementation once this has happened.
- The Network agreed a new process for discussing and sharing the learning outcomes from Death Reviews after discussion with NHS England (NHSE) following the publication of the first national report by MBRRACE-UK.
- The Network continues to support staff to attend education and training days by fully funding their places so they could attend a wide range of locally-facilitated and funded courses, conferences and workshops, as well as key national events.
- Our now very well-established quarterly "Network days" of meetings continue and enable us to focus on key areas of service development by facilitating separate sessions for the Unit Managers, clinical governance, case and now death reviews as well as the afternoon session for clinical issues and the revamped Board meetings that have better input from Units/Trusts and their members.

# Introduction by the Northern Neonatal Network Host Sponsor Chief Executive – Ken Bremner

The Northern Neonatal Network is now approaching its eight year as a fully operational managed network and it has made significant progress in delivering its key aims and objectives and the past year has seen that continuing.

Much of the workload has focused quite rightly on supporting the ongoing reconfiguration of neonatal intensive care services as per the recommendations of the Royal College of Paediatrics and Child Health (RCPCH) Report. Progress has not been as quick as initially anticipated, but this underlines the complexity in trying to achieve significant change in the way that has been agreed across the healthcare community, but two important steps have now been taken along the journey.

Firstly, we have the smallest babies under 27 weeks gestation on the Tees now being cared for at James Cook University Hospital in anticipation of all neonatal intensive care moving there.

Secondly, and significantly, we now have a new transport service ("NNeTS – Northern Neonatal Transport Service) operating from its host Trust in Newcastle and serving the whole region. In a very short space of time, it has built up the core team needed to provide this and is now well on the way to training up its Advanced Neonatal Nurse Practitioners who will oversee it. Dr. Rob Tinnion and the team are to be congratulated on this and an outline of their progress to date and plans for the future can be found in this Report. The babies and families needing vital transport services are now benefiting from the investment that the NHS England Commissioners have made available for this and we appreciate the work that has gone into the development of it.

We know that the ongoing pressures on NHS services are continuing to present challenges to us all and that is why the local Sustainability & Transformation Plans (STPs) are being agreed to allow us to design health services that meet the needs of the population we serve, are high quality but also affordable and sustainable. Locally this has meant some difficult conversations and decisions are having to be made and it is crucial that we have the ability to call on the expertise and support of the Network in helping us create these plans. This has been demonstrated on the Tees but will increasingly be needed across other parts of the local health economy throughout the region and we will continue to welcome such involvement moving forward, providing an independent voice that can assist us with reconfiguration at various levels.

The national Neonatal Review is still awaited with anticipation and along with the recent Peer Reviews, should enable the Network to focus on some key areas of service redesign and development, further building on the annual Work Plans that it delivers every year and in turn supporting the local Trusts and their neonatal units to continue delivering excellent, high quality care to some of the region's most vulnerable patients and their families, as I am sure you will agree this latest Annual Report once again demonstrates.

# Foreword by the Northern Neonatal Network Board Chair – Deborah Jenkins

The past year has seen some positive progress in the service reconfiguration we have all worked on so hard. After years of debate and research, the sometimes painful process of adopting new working patterns and building stronger inter-organisational relationships is well underway, especially in the South of our region. In the context of the staffing and financial pressures we all work under, the personal impact of change must not be under-estimated. It is inevitable that some people who have worked for many years to make individual units successful are feeling under-valued and demotivated by shifts in the system, even if they may recognise that there are few choices for system leaders. It is a tribute to all our members that they continue to work so devotedly in the interests of the babies and families they serve, despite uncertainty about the future and sometimes seemingly unreasonable daily pressures.

The inexorable proliferation of initiatives and projects aimed at improving joint working continues to provide both positive opportunities and additional burdens. Most of our members are involved in some way in the new Local Maternity Systems, and all our units have experienced the highs and lows of the new Peer Review process. As a Network, we are committed to helping improve these processes through participation and positive feedback, and we look forward to more collaborative working in the coming year.

We are proud of our contribution to improving the quality of services through our education programme, which has been very well received by participants in the training days throughout the year. As ever, it is very difficult for units to release staff to attend, and we will continue to try and find ways to make it easy for all our members to take advantage of the free education we offer. A stimulating programme was very well received by delegates to our annual conference, and we are already starting to plan for next year's. A workshop for parents and families reminded us all of the point of what we do, as a couple of dozen small children brought some much-needed joy and entertainment to a fruitful day of discussion and ideas which will inform our practice.

As ever, I am proud of our Network team, who achieve a huge amount on small resources. Thanks to them, we are kept abreast of changes in our complex world and given many opportunities to contribute to the thinking and practice which will improve neonatal services across our region. It will be interesting to see what the coming year brings.

# Report from the Northern Neonatal Network Manager - Martyn Boyd

It has been another very busy year for the Network as we have continued to commit to delivering on our key aims and priorities as outlined in our Annual Work Plan. We have recognised the need to try and focus on some core issues and much of our energy has been spent on the work summarized at the beginning of this Report, with a significant amount of that devoted to supporting the recommendations from the Report published by the RCPCH – now already almost 2 years old.

In terms of the main aspects of the Report that we agreed to concentrate on, the priority was the reconfiguration of Neonatal Intensive Care (NIC) services and the need to create a standalone neonatal transport team to serve the Network and meet the national standards and specifications we know the previous two teams based in Newcastle and Middlesbrough had struggled to try and meet. Over the last 12 months, there has been a concerted effort by the Network to do this and achieve what the Report suggested and I think it is particularly impressive how much has been achieved with respect to the transport team. NNeTS is now well on the road to full operational service and already making a real difference to the transportation of sick and premature around the region, trying to ensure that they receive the appropriate level of care at the nearest neonatal unit able to provide it, as per the principles set out in the DH (2009) Toolkit for High Quality Neonatal Services. The new team, led by Dr. Rob Tinnion (Transport Consultant) and Bev Forshaw (Nurse Specialist Team Lead) are to be congratulated and their progress and achievements to date for the new service are detailed elsewhere in a separate section if this Report that Rob has drafted. We look forward to their ongoing development and will continue to support this as a Network in any way we can.

Attempts to address the RCPCH Report recommendations for the reconfiguration of NIC services have, however, been slower than hoped and anticipated. It has taken a significant amount of time, effort and energy from staff (both Network and within the Trusts themselves) to try and make progress but we are only now beginning to see the first fruits of this at a Unit and patient pathway level. The reasons for this are varied and largely due to the complexity in achieving the suggested (and for a long time now agreed) objectives which would see all NIC services on the Tees concentrated at the James Cook University Hospital (JCUH) site, with a continuing Special Care Unit (SCU) on the University Hospital of North Tees (UHNT) site. A change like this was always going to be very challenging and the initial focus had to be on getting agreement at every level for this to happen, including trying to make the clinical case for this to the regional Joint Scrutiny Committee (JSC). This was achieved in the early part of 2016 and since then the aim has been to work towards two main objectives – creating a new pathway for all care of the smallest, most premature babies of less than 27 weeks gestation to be shifted to the JCUH site, with further work to agree the timelines and processes for enabling the other care of the sickest babies and those under 30 weeks gestation too also move from the UHNT site.

The principles and reasons behind this shift are outlined in detail in the RCPCH Report itself, but the underlying agreed objective has always been to ensure the very highest quality of care can be provided to the most vulnerable babies and their families in a safe, sustainable way at times where all NHS services in general are facing unprecedented challenges. This has led to the suggestion that a “Teesside Neonatal Service” can best serve the needs of the population on the Tees across the two sites and we have in recent months made significant progress in moving towards a shared and agreed vison as to how this can best be achieved, so that as I write this summary in the late autumn of 2017, we have in recent months just seen the first phase of this transition commence, with the babies less than 27 weeks now being cared for at JCUH alone. To enable this, the consultant neonatologists have managed to agree cross-site working arrangements that have already started and seem to

be working well. It is testament to all the staff involved that this has happened. The remaining challenge of shifting all NIC to JCUH is a very significant one and there also remains the issue of wider reconfiguration of allied services within maternity and paediatrics across the region that need to be considered and the much slower pace of change expected within the comprehensive "Better Health" project for the Tees Valley has been particularly disappointing and is now reaching the point where we need within neonatal services to make the case for continuing our own reconfiguration without being fully aligned within their consultation process as it is proving to protracted and the need for further moves to complete the Tees NICU reconfiguration needs to be made on clinical and safety grounds.

Additionally, the Better Health programme and the CEOs of the two Tees Trusts agree with the ultimate aims of the RCPCH Report, so the focus for the next 12 months must now be on moving towards this. It remains a huge logistical and operational challenge in terms of how and by when that is achievable, but the case for doing so is undiminished and if anything increasingly more urgent. Also, because the number of babies from the North Tees area that would be affected is not large (all the modeling that has been done suggest less than 2 babies per week would need to be initially cared for at JCUH) and the outcomes that are expected from concentrating the NIC care on one larger site improved according to all the research, it is felt right by all those involved to bring this change about as soon as can be accommodated. The Network therefore looks forward to helping support this in the coming months.

The proposed changes in the north of the region for NIC services are less "complex" at first sight, but still not without significant challenge. To recap, the recommendation of the RCPCH Expert Panel was to focus the care at Sunderland for babies over 26 weeks gestation and by implication, shift the care of these smallest, most premature babies across onto the RVI site in Newcastle.

The implementation of this new pathway is proving difficult to move towards because of the lack of available capacity at the RVI, which regularly sees a significant number of babies and families who would expect to have their care there (particularly when they have booked there, or at a SCU such as Gateshead or Cramlington but subsequently deliver too ill or at gestations less than are routinely catered for there) having to be cared for at other NICUs. In terms of the inability to implement the RCPCH 26 week pathway, there is still concentrated effort to adhere to this so that babies who are over the 26 week gestation cutoff are transferred to Sunderland wherever possible by default, but the lack of capacity at the RVI sometimes makes this unachievable.

The Network has therefore focused its energies on making the case for change to NHS England through the need for urgent and new additional capacity by way of more NIC cots at the RVI. This has been done initially and primarily through the annual capacity assessments that the Network produces as a core remit function, Every year these have been done, it had demonstrated the pressure within the region on the existing cot provision at the RVI, including detailed analysis of the number of babies and their families who are routinely having to be moved to other neonatal units across the Network for their care due to this lack of capacity at the RVI.

The capacity assessments conducted in recent years and the modelling that was undertaken for the reconfiguration work suggests that there is a need for an additional 9 NIC/HD cots at the RVI for them to routinely operate at the DH Toolkit and other recognised recommended levels of 80% average occupancy. This actually approximately two cots worth of activity that is currently regularly and routinely "exported" elsewhere within the Network due to lack of required capacity at Newcastle – a significant cost to the local population who often have to have care provided in Sunderland or at the Tees NICUs, as well as the additional pressures for the cots for specialist surgical or complex medical cases that only they provide.

In order to finally address this shortfall and the urgent need for investment into new and additional capacity at the RVI (and the resulting subsequent easing of pressure within the rest of the Network itself that would also see the ability to implement the final RCPCH pathway recommendations), discussions have been taking place between the Network and the NHS England commissioners, who have accepted the case and need for this additional capacity.

This has resulted in a very positive approach being taken and at the time of this summary being drafted, a business case from Newcastle for an initial 4 additional new NIC cots has been submitted to NHSE and this is being considered and negotiations commenced to have a phased expansion of 2 cots then a further 2 when possible. This is largely because of the significant extra nurse recruitment that such an expansion will require. It also has the added

advantage of being able to be accommodated within the existing RVI infrastructure without a substantial new build, which any further increase in capacity would almost certainly require – potentially a very large new capital project that is currently not possible. However, once these new cots are commissioned and operational, the positive effect of the Network's ability to absorb the activity that is regularly testing its ability to cope without transferring babies into neighbouring ODN neonatal units will be significant. There should also be a very welcome reduction in transfers out of the RVI and the further capability to accept urgent surgical and complex medical referrals and also crucially, operate at much safer occupancy levels than at present.

Finally it should also enable the 26-week pathway across the 2 northern NICUs to be implemented fully as per the RCPCH recommendations, although it will take some time to be achieved, however, I hope that by the time next year's Annual Report of being drafted, positive progress can be reported.

Another significant new development over the course of 2016-17 was the establishment of dedicated sessions on our quarterly "Network meeting days" to discuss learning outcomes from death reviews held at Trust level. This was undertaken following discussions with NHSE after the first national MBBRACE-UK (Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK) Perinatal Mortality Surveillance report was published in the autumn of 2016. This report suggested that in some of the reporting metrics, the Network was an outlier with higher rates than some other neonatal ODNs across England. As a result of this report, the recommendations within it to try and reduce infant mortality and stillbirths became the subject of scrutiny by commissioners and hence the approach made to the NNN to discuss how we could better co-ordinate the learning outcomes from the reviews of baby deaths in our Network.

For some time, the Network had been focusing on case reviews of interest at our quarterly meetings, which all who attended felt was very beneficial and an excellent way of sharing and spreading good practice and improving care due to the way learning from them was discussed. There was therefore a ready-made process that could be built on and we now have a very robust process in place whereby all the learning outcomes from the death reviews that have been conducted locally during the previous quarter are shared in a confidential but anonymised way and collated for the benefit of clinicians and nurses. These sessions are facilitated by our Network Clinical Lead, Dr. Sundeep Harigopal and he discusses them in his own summary elsewhere in this report.

We intend to develop these sessions further over time, hopefully extending them to include a more multidisciplinary approach and involve obstetric and midwifery staff to enable the ante and perinatal factors to be discussed and learned from too.

Since the initial MBBRACE-UK Report for 2014 births, a more recent one has been published in June 2017 that focusses on the data from 2015 births and this has shown a very different picture for the Network, with no outlier status for the same metrics – a situation we knew would occur because we had the initial data anyway, but it has shown to highlight and confirm the caution we reported at the time from trying to extrapolate one years' isolated data for wider concerns in relation to a very complex issue. However, we are as a Network fully committed to continue developing our meetings and do whatever we can to reduce further the rates of perinatal mortality as much as possible.

Most recently, there have been some very new national developments in two main areas that are being developed further as the time of going to press with this Report. These are the establishment of new "Local Maternity Systems (LMS) and also a national Maternity & Neonatal Health and Safety Collaborative (MNHSC).

LMS are being set up to deliver the recommendations from the "Better Births" Report that was published following the national maternity review, whilst the MNHSC has been established as a three-year programme to support improvement in the quality and safety of maternity and neonatal units across England. The aim is to reduce the rates of maternal deaths, stillbirths, neonatal deaths and brain injuries that occur during or soon after birth by 20% by 2020 and 50% by 2030.

Although these new initiatives are still being developed, the Network is expecting to play a central role in their function and remit to ensure the neonatal elements of them are implemented successfully and myself and Sundeep have already being co-opted onto the new LMS Boards and helped draft the detailed plans that need to be submitted that outline how the Better Births recommendations will be achieved. WE expect this to be an increasing and significant part of our workloads for 2017-18 and beyond and next year's Report will contain an appropriate element of focus on them.

Other national developments in 2016-17 that are due to be implemented in the current (2017-18) year and beyond include a full programme of Peer Reviews over the latter part of 2017 and early 2018, which will see every neonatal unit in England peer reviewed against some nationally agreed standards and metrics and we hope that the final reports that will be drafted from these will enable further service and quality improvements to be introduced and again, the Network is intending to help support and co-ordinate these.

On a different note, it is particularly disappointing and also frustrating that at the time of going to press, the much anticipated national neonatal review that I mentioned in last year's report is still to be published. The data collection for this took place in the autumn of 2016 and the initial hope was for headline recommendations to be set out by the end of that year, but now a full year on, these are still not out and it remains to be seen just what the review will include and what impact the report and its recommendations will have, but we do expect to be heavily involved once this has been finally released.

Once again, it is very gratifying indeed to see that local staff and teams are receiving national recognition for their work and achievements. The work done by the staff at County Durham & Darlington in implementing a transitional care service resulted in them being shortlisted by Midwives Magazine for their Team Of The Year Award, whilst the Butterfly Project that grew out of research into twin loss at the RVI has become internationally adopted and Sarah Stephenson and other staff involved in its implementation have spoken at several national conferences and study days. Our own Sam Richmond Scholarship has grown and is now well established and Claire Ellerby (Sister at the RVI) has been now seen her "Claire's Nests" developmental care aids being produced and attracting commercial interest from as far afield as China! Finally, Claire Campbell, also a Sister at the RVI was the recipient of the inaugural Neonatal Nurse Association (NNA) Nurse of the Year award in November 2016. It really is fantastic to see local staff doing so well and we are proud of their achievements and celebrate their success.

Summarising the last 12 months, I think it is fair to say that once again, as a Network we have achieved most of the aims and objectives that we set ourselves last year, despite significant challenges and although progress on some areas has not been as rapid as we hoped, we have still much to be pleased with and build on in the new areas we have started to develop. However, we have struggled a little at times because of the workloads of those who are involved at network level. I think if we are to continue to successfully deliver our work programme and the key priority areas as well as these new national and local initiatives, we need to co-opt further help from more staff across the Network who can support what we are doing and are planning. This could open up further new developmental opportunities and we will be exploring these in the next year.

Finally, I would like to pay tribute to my Network colleagues, including the Board members, who often go above and beyond their notional sessional time and hours in delivering for the Network and in the last 12 months in particular, Sundeep has been pivotal in facilitating discussions that have focused on reconfiguration which have been very challenging, but he has gone about this with tact, diplomacy and considerable professionalism and I think he has been an increasing asset to the Network and is to be congratulated accordingly. Lisa Purves has also settled into her Admin role very well and now provides an invaluable source of support and works very hard behind the scenes to ensure the smooth running of the Network and is to be congratulated for this.

# Report from the Northern Neonatal Network Clinical Lead – Dr. Sundeep Harigopal

It is now seven years since we became a fully-fledged managed clinical network and I am glad to say that we have made significant progress towards some the issues that were faced by the network. The last year has been very busy but productive and we have managed to achieve some to the goals set out and continue to deliver equitable, high quality neonatal services in the changing times.

Since the publication of the RCPCH review in August 2015, we have successfully implemented some of the recommendations. The network now has an independent standalone retrieval service – Northern Neonatal Transfer Service (NNeTS) hosted at Royal Victoria Infirmary, Newcastle. We have successfully recruited trainee Advanced Neonatal Nurse Practitioners and appointed Dr Robert Tinnion as lead for NNeTS.

We have also made progress towards reconfiguration plans following several challenging negotiations and I am glad to say the first phase of Teesside configuration was implemented on the 25th September 2017. All babies born less than 27 gestation on Teesside will be cared for one site (James Cook University Hospital). University Hospital of North Tees will continue to look after babies from 27 weeks gestation upwards until the next phase. Consultant cross site working has also begun. We have also made some progress in North of the Tyne. Newcastle trust has agreed for a phased increase of four cots over a two year period which will enable the network to make some progress with reconfiguration plans for Royal Victoria Infirmary and Sunderland Royal Hospital.

In the last year we have further strengthened our clinical governance structures through a variety of mechanisms that include quarterly Case Review meetings to discuss all deaths that occur in the network and to share lessons learned. The local reviews now have an external reviewer as recommended by the MBBRACE-UK Perinatal Mortality Surveillance Report. We have also introduced exception reporting to ensure babies are looked in the appropriate centre.

The MMBRACE-UK report published this year showed seven of the nine trusts with a stabilised and extended neonatal mortality rates up to or more than 10% lower the average. Although the NNAP reported many areas of good practice there are also areas for improvement. The national Peer Review of all neonatal units concluded recently and we await the final reports but there were no major concerns reported from any of the units.

Other developments include the effort to standardise Parental Nutrition across the network. We have employed a pharmacist to oversee this work and hope to have it implemented by the end of the year. We are also in the process of improving our current website with a complete new redesign and restructure to include information for parents. I hope that it should be ready by the end of the year.

The Network has always had education as high priority from its inception. We continue to make significant progress in the field though stabilisation courses, case discussions and the respiratory study day and nutrition study day. We ran a successful research study day for the second year in a row and will be a regular event from now.

We are closely linked to the Sustainability and Transformational Plans (STP) and the Local Maternity Systems (LMS). Both have agreed to take the RCPCH review into any plans for reconfiguration. We are currently working together with the LMS to integrate neonatal plans within LMS. We are also working with Maternity and Neonatal Safety Collaborative (MNHSC) to identify areas of improvement in maternity and neonatal care and have identified transitional care as an area to focus on. At the recent System Wide Collaboration to

Improve Vulnerable Services meeting of senior leaders that I was part of, neonatology was identified as a 'Early win' - vulnerable service and I have made a case that the implementation of the RCPCH review should be outside the STP plans. I think we have exciting times ahead!

Finally I would like to thank all my network colleagues and special thanks the network officers for their hard work and dedication.

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## Report from the Northern Neonatal Network Nurse Lead – Lynne Paterson

Another year is over and it has been a busy one with lots of things going on. I have been primarily concerned with education over the last year, getting more involved in revamping the QIS (qualification in specialty) modules at both Teesside and Northumbria Universities. I am happy to say that these new formatted modules are now underway as are the two foundation days that the network has put together to support these. This was the culmination of a project that was initiated by Health Education England, whereby they mapped out what was delivered in England and then came up with some new standards, in order that we could have more consistency with this type of education. I would like to thank everyone who has been involved locally in this including the module leaders, the practice development staff and also the network members who have been instrumental in delivering QIS education across the last year. We could not have done this without you.

I am happy to say that nursing staff have also benefitted from two further network QIS days in addition to their academic content, including a Respiratory day that Richard put together and also a High/Low Dependency day that I was involved with. Both of which were well received by the staff.
However, the future is already looking unclear for QIS education across the whole of the UK and much discussion is currently going on behind the scenes as to what this will look like in the future; mainly down to the funding mechanisms. New models for all types of education are being considered and so keep your eyes open for new announcements in the forthcoming months as to what form this is likely to take and I would also urge you to get involved in helping to shape this for the future when we need your input. Educating our future neonatal staff to QIS standard is crucial and is everyone's business.

Luckily for the network, all the efforts that were put into ANNP training provision are still in place and we are still able to access the course at Sheffield currently, and we have taken advantage of this in some of our units.

In terms of other education there have been many activities for nursing staff to get involved in and we are delighted that we can continue to support such progress. To date we have had many staff that have completed the FINE foundation training (Family and Infant Neurodevelopmental Education) and although they are not all nursing staff; the vast majority are. I can also speak from personal experience about this course as I have completed it and can say that it is really beneficial for ALL staff to have done and impacts greatly upon the quality of the baby's experience as they come to our respective units for their care. As such I would recommend this to you if you have not already done it. The Network will continue to support this and dates for 2018 will be advertised soon and I would recommend speaking with your nurse manager / matron to make sure that you can take advantage of these next year.

There have also been funded places on the Newborn Life Support courses this year and we have had a Research day facilitated by Dr Helen Chitty.

We were fortunate to have two Bliss representatives visit the region earlier in the year to give us a much needed boost to our Baby Family Friendly Accreditation Scheme (BFAS). There is much good work going on across our units and some of us are further on with this than others; but we need to keep chipping away in order to make our units more family friendly and to ensure that we can achieve accreditation from Bliss in order that all that good work gets formally recognised.

I know this is a flavour of what goes on across the units, but the point is that we are all very well supported by the Network and there are various opportunities for nursing staff particularly to use these days to improve their working practices and knowledge as well as utilising them for their NMC revalidation, so please make good use of them.

This year, I was also happy to be involved in the Networks first family day which was rolled out in May and to provide some feedback from this at the Network Annual Conference on September 20th. This has made us (and me in particular) think more about how we utilise families both in terms of providing support for them but also making them feel that they can get involved in what we do in order to help improve our services for the future. I believe that parents' feedback is vital to us and we will be making more use of this in the years to come. We also do need to think about how we provide better support for them across the network and how we enable them to get involved with us both locally and at network level. Any ideas about this are always useful, so please get in touch.

In the last year a national Network Lead Nurse group was formed, this means that we can work collectively on the things that affect us all and provides us with a stronger voice. As part of this I have been involved in getting our data sent to the national team, so thank you to all who was involved in completing the recent surveys that were sent around. We have as a result been looking at that data in detail and it won't surprise you to know that other units in the UK are similar to our own, especially in terms of age demographics, accessing QIS courses and other education. This will feed directly into the national neonatal review and it is already giving us much needed intelligence about nurse staffing and vacancies as well as other things that will be useful moving forward and looking at such issues as manpower planning and educational requirements.

The Sam Richmond award went to Newcastle this year with another excellent project, but thank you for all other applications. It is so good to see that nursing staff have ambitions to put their energies into new and exciting projects for the future of neonatal care. Please make sure that when the call goes out for the next award that you apply. I am also more than happy to be contacted for any advice or support around these if required.

I have also been involved in the reconfiguration in the south of the patch in the last year and I am happy to report that things are moving forward with some cots now reassigned. It is always difficult when things change but staff have been very good at supporting these alterations and have been working hard to make sure that these go smoothly, and so thank you to all involved in this.

Finally can I also say that most of the information about the Northern Neonatal Network will be on the website when this is relaunched in its new format, but all of the unit managers and clinical leads are sent network information to their emails, so please ask them if you cannot find what you are looking for as they are likely to have been sent an update by either Martyn or myself.

I have changed my email address to: Lynne.Paterson2@nhs.net so please email with any queries.

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## Report from the Northern Neonatal Network Educational Lead – Dr. Richard Hearn

2017 has been my second year as Network Education Lead and has been a year of continuing existing educational events and participating in some new endeavours.

The Respiratory study day again ran in March 2017. This time I revised almost all of the material to try and map it more closely to the QIS criteria for this area of practice. A member of medical staff this was a new area so I sought out the expert assistance of Lynn Paterson, Nurse Lead for the Network and Angela Warne and Sara Donnison, Practice Development – RVI. The candidate evaluation was good and this is testament to the changes in material and the faculty who came on board to provide the teaching but there remains more work to continue improving this module. It also remains the case that though this is very much part of the University module there is minimal guidance from the universities as to how they want us to approach this. However I feel it is a much more pragmatic piece of learning focused on the clinical needs of the nursing staff than perhaps previously.

In April we embarked on a new venture – a commercially sponsored Nutritional study day. There was an initial ethical dilemma about using a commercial company but Fresenius were to my mind a good choice as they

did not and could not exert any commercial influence on the audience. The event was free to candidates and was open beyond the network. It even attracted people from Scotland (excluding myself).

The speakers, from within and out with the region, were very high quality and there was something for Clinicians, Nursing staff and Pharmacists in the programme. If there is an appetite we may repeat the day in a couple of years and if there is interest in other topics we could set up a similar format day in the future.

A thread that has run through the year is of course the stabilisation course. We have run 4 courses in 2017;

2 Bishop Auckland for CDDFT
1 Whitehaven for North Cumbria
1 Ashington for Northumbria

As always there were issues. The Northumbria course had to be moved to the second half of the year due to staffing issues, at short notice the Gateshead/South Tyneside course had to be cancelled due to local logistical issues and the North Cumbria course only had myself as Faculty though we still ran almost all the practical stations and two simulations on the day.

We used a new venue for the Northumbria course at the 'DASH' simulation centre at Ashington and this proved to be an excellent resource. We are hopeful to use it again for future courses.

Case reviews which commenced in 2016 have continued though with limited uptake. It is my impression that a very large part of this relates to the need to the logistics around the physical need for people to attend these meetings. In the digital age NHS IT remains resolutely unable/unwilling to try and support an efficient and effective means of communicating via video conferencing though perhaps this will change in the future! In the meantime please get in contact if you would like to facilitate a discussion around a case. We have started doing this around neonatal mortality review at a network level and it is a good way to strengthen our clinical governance and share good practice.

Foundation (Pre QIS) study days were developed by Lynn Paterson this year and I was pleased to be invited to deliver two sessions. These are another element of the high quality free educational events offered by the network and I hope we are able to continue supporting these in the future.

There is a wealth of experience in our medical, nursing and allied professions within the region and I would be keen to hear of any suggestions for future educational sessions and would encourage anyone to make contact with myself or Martyn Boyd with suggestions.

The Northern Neonatal Network has a long history of providing high quality education. This was the region where the nationally delivered NLS course originated. Every year we provide both regular and ad hoc events and are open to tailoring and setting up educational events to the needs of the staff in the region.

## Key teaching events

The network stabilisation course
This was started over 6 years ago by Dr Steve Byrne, the previous clinical lead of the Northern Neonatal Network, with the idea of providing training in stabilisation and management of infants in the DGH setting while awaiting transfer to one of the tertiary centres.

In subsequent years it has evolved to take advantage of high fidelity neonatal simulation equipment and clinical learning tools to aid development of the practical skills required in this group of infants. It is taught local to the centres referring into NNETS and allows for local teams to practice together with equipment that is familiar to them. The course runs in a one day format with a mix of lectures, interactive workshops and simulation offered. It covers four core areas;

Northumbria
Gateshead/South Tyneside
Durham & Darlington
North Cumbria

Though the course has a set format the network is always open to making adaptions to suit the needs of local units and this can be done via Richard Hearn.

## Case reviews

Since 2016 we have been offering to facilitate local review of cases with medical staff from the level 3 centres. This has generally been cases which have required retrieval from the DGH setting but could include cases where an organisation felt external input would be beneficial. This has been a useful learning experience from both sides and continues to be offered on request.

## Nurse training days

The network supports, free to candidates.
Foundation training in Neonates (Pre-QIS)
Respiratory Study day (Part of QIS)
Family centred and Developmental care study day (Part of QIS)

## Ad Hoc training days

Over the past few years we have offered Simulation training days, a nutritional study day, research study days, palliative care study days to name but a few events. If you have an idea for an educational event please contact the network team to discuss and we will endeavour to support the education our staff need and want.

# Report from the Northern Neonatal Network Data Manager – Mark Green

## Work undertaken in the last year

The quarterly report has been redesigned into a more readable and shorter format, but has more data included, and more relevant information; NNAP indicators, term admissions, average length of stay and transitional care have been added to the activity and transport data that have always been included in the report. There is now a full years' worth of the new report on the network website.

Supporting units/trusts to move towards National Specifications and recommended minimum staffing levels by providing timely, accurate and validated quarterly NNN staffing reports for each unit. To provide annual network summary and performance report based on units meeting of BAPM recommended staffing levels for each unit.

Individual unit reports have helped with the data quality and completeness of unit Badger data in preparation for the NNAP audit and reporting.

The parent survey has been active now for almost 3 years and there is a good return rate from units. This report highlights the views of the parents, and the good and bad experiences they have had whilst on the units. This work is ongoing.

Attending the data manager's forum, which takes place in London twice a year. This is an opportunity for the data managers of all the neonatal networks, as well as NNAP, NDAU and Clevermed to meet and discuss current data issues and what other networks are reporting and what is happening in other parts of the country with regards work is being undertaken, and any research projects that are currently being done.

Continuing to support the units in BadgerNet, keeping the units informed of any developments and changes to the BadgerNet system, and distributing any correspondence as appropriate.

Supporting transport teams with audit/reporting of activity and responses utilising quarterly network reports.

Supporting commissioner activity data requirements. Produce quarterly summary of unit activity levels across HRG/care levels according to NHSE requirements, supplied to CSU for anonymising, then distributing to Trusts for validation/checking.

Routine data collection and ad-hoc requests.

## Future and ongoing work

Provide timely, accurate and validated Quarterly NNN Staffing Reports to each Unit.

Provide Annual Network summary and performance report based on Unit's meeting of BAPM recommended staffing levels for each Unit, feeding into Network Workforce Strategy.

Quarterly summary of Unit activity levels across HRG/Care levels according to NHSE requirements, supplied to CSU for anonymising & copying to Trusts for validation.

Quarterly monitoring of pathways and exception reporting of any incidence in the quarter when the pathway was not followed.

Continuing support for the Network Transport Team, producing timely reports that reflect the activity undertaking by the team.

Transcribe Network Parent Survey forms as submitted and collate Unit & Network Reports, fed back to managers & leads.

Undertake review of Parent Survey to reflect what additional questions units would like to see included.

Explore the possibilities of ongoing PMS data input and reporting according to agreed processes to meet Network needs and support Death Review discussions (local & Network).

Utilise existing national quality reporting streams from Annual NNAP Report to provide detailed, timely feedback to Maternity Clinical Network (CN) leads highlighting Trust-level performance on key indicators affecting neonatal outcomes (via cross representation on NNN and Maternity CN Boards).

Provide "point of reference" support role for Badger users across Network.

Assist Unit data leads with requirements to enable compilation of annual reports.

Seek to getter better engagement and feedback for reporting by copying in other identified Trust leads/contacts.

Assist in the migration of existing content to new professionally designed and hosted website as current provision is no longer fit for purpose or providing required functionality for users and editing access for Network officers.

Collaborate with maternity SCN to equip obstetric colleagues with data highlighting appropriate maternity care metrics that influence neonatal outcomes. Utilise existing national quality reporting stream from annual NNAP report to provide detailed, timely feedback to maternity SCN leads highlighting Trust level performance on key indicators affecting neonatal outcomes.

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## Report from NHS England Specialised Commissioner – Lisa Jordan

The financial pressures within the NHS have not reduced and this continues to limit NHS England's ability to invest in services. Neonatal services continue to be a priority area for the North East and North Cumbria Specialised Commissioning hub with a continued commitment to implementing the recommendations of the Independent Review of Neonatal Intensive Care Units.

### Service reconfiguration

Progress has been made towards achieving the recommendations of the review, which include the reduction of the number of centres providing intensive care services from four to three. The first stage of this has been achieved with all babies born in the Tees area under 27 weeks gestation being cared for at South Tees James Cook Hospital. Discussions are underway to plan for the full transfer of all intensive care services to transfer from Stockton to Middlesbrough.

### Neonatal Transport/Retrieval

Funding from NHS England has led to the establishment of a standalone regional neonatal transport service based at the Royal Victoria Infirmary in Newcastle. The service is fully operational and has transported more than 600 babies during its first 12 months of operation.

### Peer review visits

During 2017-18 NHS England is carrying out a series of national peer reviews, led by the Quality Surveillance Team these reviews will be looking at specific quality measures to give an overview of the services provided at all commissioned units. These reviews cover both intensive care and special care baby units and the outcomes will allow commissioners in NHS England to work closely with the providers to address any areas for improvement.

# Northern Neonatal Network Sam Richmond Nursing Scholarship – Winner for 2016, PEAPOD Team

*The PEAPOD Team with their Award and trophy*
*(L-R Jolene Clark, Pat Dulson, Maria Douglass, Adele Ritson & Laura Robson)*

We have now established the annual Nursing Scholarship, named in memory of the late Dr Sam Richmond, as a regular and key part of our aim of trying to foster a spirit of innovation amongst the nursing staff across the Network, Sam had worked as a Consultant Neonatologist in Sunderland for many years, pioneering neonatal care there and the main aim of setting up the Award was to foster that same spirit by encouraging nursing staff to develop new ideas as to how neonatal nursing care can be improved.

The Scholarship was formally launched in late 2014 and our first winners announced in early 2015 and we involved Sam's widow Liz in the initiative after she gave it her wholehearted backing and she has continued to take a keen interest in it ever since, meeting with the winners to present their trophy and hear about their work.

The Scholarship comprises two separate aspects - a prize of £1000 that the winner can use towards their proposal and also a trophy that Liz had specially commissioned by the Sunderland Glass Centre. This gets engraved with the winners name and year on and they get to keep it for 12 months until the next Scholarship is awarded.

Following the success of the previous Scholarships, the Network opened up applications for the third Award in late 2016. The level of entries was again very high, making the task of the panel of judges a very difficult one. However, a worthy winner was eventually chosen in a team from Newcastle's Royal Victoria Infirmary Neonatal Intensive Care Unit. Entitled the "PEAPOD" (Parental Early Attachment in Promoting Optimal Development) project, the team are focussing their study on 'Promoting skin to skin contact – the neonatal unit and beyond'. Skin to skin contact (or "kangaroo care" as it is also known) is a very beneficial aspect of neonatal care that encourages parents to hold their sick and premature babies closely. It is a well-established practice with many benefits to both baby and parent, but the team are researching the added value of using supportive slings both when the baby is an inpatient but also following discharge.

Martyn Boyd, Manager of the Northern Neonatal Unit said 'Sam was passionate about nursing education research and a well-known figure in the delivery of new born life support (NLS) courses across the world. We set up the annual scholarship to encourage innovation and news ways of working that could improve neonatal care among nurses working across our neonatal units. This year's entry by the PEAPOD team from Newcastle was the judge's unanimous choice and we look forward to following their progress as their study progresses. We hope that this may then be adopted by other baby units across our own network and beyond."

*The PEAPOD Team receiving their Award and trophy from Dr Majd Abu-Harb, Liz Richmond, Ken Bremner, and Lisa Purves*

# Network Annual Data Report 2016-17

The Network has continued one of its core tasks of focussing on producing high quality data and reports and this has seen ongoing work to publish and tweak the established Quarterly Reports that feed into this annual summary. The aim of looking at rolling 3-year averages has continued as this gives a better idea of trends allowing for the variation that could be expected from year to year. We have maintained most of the tables and summaries used in past annual reports but updated them for the last year 2016-17. We feel that collectively, these give a very useful summary of the main metrics that we need to concentrate on and allow a discussion at both Network and Unit level to determine what service planning can be developed according to need, as well as quality improvement initiatives within Units to address variation where this exists and can be demonstrated. The differing rates of Term Admissions is one example of this and is at the heart of the ATAIN (Avoiding Term Admissions Into Neonatal units) national initiative that is now being rolled out and upon which we as a Network are intending to start regular discussions as to how we can support this across all of our Neonatal Units, as we know that there is significant variation across the eleven.

By and large, the activity levels we have seen over recent years have again been pretty consistent, with last year's slight increase in births not being sustained, and actually falling slightly, with only a tiny increase in the total admissions and this still less than that being experienced 4-5 years ago. Once again we seem to be bucking a national trend here and are not experiencing increases like some other areas of the UK. This is again rather fortuitous, as with the continuing high occupancy levels across the four NOCUs in particular, any sudden sustained increase in the birth rate would make it very hard to cope, especially at the RVI where demand on the available cots continues to be very acute.

The regular quarterly reports that are produced for the Network are now very well established and contain a wealth of information for each of the neonatal units, including benchmarking their performance against the national indicators that are contained in the NNAP (National Neonatal Audit Project) reports. The aim has always been for clinicians, nurses and managers to use this data to review performance and inform service delivery decisions and planning and it is of particular importance when trying to determine how term admissions might be managed differently. The Network is committed to engaging in discussion to support Units in their attempts to deliver appropriate service change and is planning to facilitate meetings that allow an open forum for shared learning and the spread of best practice, centring on our quarterly Network day sessions and being developed further as the new Local Maternity Systems (LMS) grow.

| ] Unit | Live Births | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Financial Year | | | | | 3 Year Average | | | |
| | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 12-15 | 13-16 | 14-17 | % diff |
| RVI | 7403 | 7387 | 7339 | 6969 | 6592 | 7376 | 7232 | 6967 | -3.7% |
| JCUH | 5707 | 5383 | 4987 | 4740 | 4995 | 5359 | 5037 | 4907 | -2.6% |
| North Tees | 3392 | 3259 | 3099 | 3092 | 2996 | 3250 | 3150 | 3062 | -2.8% |
| Sunderland | 3263 | 3267 | 2998 | 3097 | 3203 | 3176 | 3121 | 3099 | -0.7% |
| Cramlington | 2691 | 2425 | 2127 | 3068 | 3171 | 2414 | 2540 | 2789 | 9.8% |
| QE Gateshead | 1859 | 1748 | 1844 | 1820 | 1875 | 1817 | 1804 | 1846 | 2.3% |
| South Tyneside | 1434 | 1397 | 1311 | 1330 | 1231 | 1381 | 1346 | 1291 | -4.1% |
| UHND | 3074 | 3004 | 3193 | 3087 | 3038 | 3090 | 3095 | 3106 | 0.4% |
| Darlington | 2511 | 2249 | 2192 | 2201 | 2027 | 2317 | 2214 | 2140 | -3.3% |
| Cumberland | 1742 | 1696 | 1729 | 1731 | 1660 | 1722 | 1719 | 1707 | -0.7% |
| Whitehaven | 1387 | 1292 | 1239 | 1177 | 1270 | 1306 | 1236 | 1229 | -0.6% |
| Network | 34463 | 33107 | 32058 | 32312 | 32058 | 33209 | 32492 | 32143 | -1.1% |

Table 1 – Live births by year plus rolling 3-year averages

| Unit | Unit Admissions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Financial Year | | | | | 3 Year Average | | | |
| | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 12-15 | 13-16 | 14-17 | % diff |
| RVI | 804 | 761 | 787 | 728 | 725 | 784 | 759 | 747 | -1.6% |
| JCUH | 533 | 452 | 486 | 441 | 458 | 490 | 460 | 462 | 0.4% |
| North Tees | 339 | 331 | 334 | 376 | 429 | 335 | 347 | 380 | 9.4% |
| Sunderland | 339 | 363 | 336 | 330 | 327 | 346 | 343 | 331 | -3.5% |
| Cramlington | 417 | 337 | 295 | 310 | 340 | 350 | 314 | 315 | 0.3% |
| QE Gateshead | 240 | 220 | 252 | 248 | 262 | 237 | 240 | 254 | 5.8% |
| South Tyneside | 114 | 96 | 92 | 98 | 93 | 101 | 95 | 94 | -1.0% |
| UHND | 235 | 251 | 253 | 233 | 273 | 246 | 246 | 253 | 3.0% |
| Darlington | 218 | 232 | 187 | 229 | 226 | 212 | 216 | 214 | -0.9% |
| Cumberland | 236 | 233 | 207 | 225 | 219 | 225 | 222 | 217 | -2.1% |
| Whitehaven | 212 | 173 | 140 | 174 | 147 | 175 | 162 | 154 | -5.3% |
| Network | 3687 | 3449 | 3369 | 3392 | 3499 | 3502 | 3403 | 3420 | 0.5% |

Table 2 – Unit admissions by year plus rolling 3-year averages

| Unit | Intensive Care (IC) Days | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Financial Year | | | | | 3 Year Average | | | |
| | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 12-15 | 13-16 | 14-17 | % diff |
| RVI | 2613 | 2787 | 2683 | 2262 | 2308 | 2694 | 2577 | 2418 | -6.2% |
| JCUH | 1159 | 1381 | 1301 | 1401 | 1072 | 1280 | 1361 | 1258 | -7.6% |
| North Tees | 709 | 1057 | 992 | 1126 | 1041 | 919 | 1058 | 1053 | -0.5% |
| Sunderland | 891 | 856 | 883 | 1066 | 834 | 877 | 935 | 928 | -0.8% |
| Cramlington | 26 | 32 | 71 | 37 | 33 | 43 | 47 | 47 | 0.7% |
| QE Gateshead | 13 | 16 | 21 | 22 | 21 | 17 | 20 | 21 | 8.5% |
| South Tyneside | 15 | 5 | 8 | 13 | 18 | 9 | 9 | 13 | 44.4% |
| UHND | 29 | 34 | 56 | 51 | 31 | 40 | 47 | 46 | -2.1% |
| Darlington | 52 | 44 | 29 | 44 | 49 | 42 | 39 | 41 | 4.3% |
| Cumberland | 22 | 28 | 20 | 32 | 25 | 23 | 27 | 26 | -3.8% |
| Whitehaven | 26 | 27 | 23 | 20 | 15 | 25 | 23 | 19 | -17.1% |
| Network | 5555 | 6267 | 6087 | 6074 | 5447 | 5970 | 6143 | 5869 | -4.4% |

Table 3 – IC care days by year plus rolling 3-year averages

| Unit | High Dependency (HD) Days | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Financial Year | | | | | 3 Year Average | | | |
| | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 12-15 | 13-16 | 14-17 | % diff |
| RVI | 3077 | 3385 | 3187 | 3139 | 2838 | 3216 | 3237 | 3055 | -5.6% |
| JCUH | 1547 | 1633 | 1557 | 1632 | 1643 | 1579 | 1607 | 1611 | 0.2% |
| North Tees | 900 | 972 | 1003 | 1204 | 1307 | 958 | 1060 | 1171 | 10.5% |
| Sunderland | 1046 | 1168 | 1437 | 1041 | 1210 | 1217 | 1215 | 1229 | 1.2% |
| Cramlington | 110 | 124 | 141 | 124 | 151 | 125 | 130 | 139 | 6.9% |
| QE Gateshead | 101 | 121 | 101 | 55 | 41 | 108 | 92 | 66 | -28.9% |
| South Tyneside | 55 | 29 | 29 | 49 | 38 | 38 | 36 | 39 | 8.4% |
| UHND | 152 | 173 | 227 | 230 | 256 | 184 | 210 | 238 | 13.2% |
| Darlington | 217 | 216 | 151 | 184 | 104 | 195 | 184 | 146 | -20.3% |
| Cumberland | 74 | 115 | 122 | 111 | 112 | 104 | 116 | 115 | -0.9% |
| Whitehaven | 82 | 65 | 84 | 73 | 95 | 77 | 74 | 84 | 13.5% |
| Totals | 7361 | 8001 | 8039 | 7842 | 7795 | 7800 | 7961 | 7892 | -0.9% |

Table 4 – HD care days by year plus rolling 3-year averages

| Unit | Special Care (SC) Days | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Financial Year | | | | | 3 Year Average | | | |
| | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 12-15 | 13-16 | 14-17 | % diff |
| RVI | 5455 | 5695 | 4878 | 4534 | 4147 | 5343 | 5036 | 4520 | -10.2% |
| JCUH | 5503 | 4382 | 4981 | 3921 | 4762 | 4955 | 4428 | 4555 | 2.9% |
| North Tees | 3342 | 2949 | 2829 | 3219 | 3234 | 3040 | 2999 | 3094 | 3.2% |
| Sunderland | 3416 | 3042 | 2870 | 3173 | 2921 | 3109 | 3028 | 2988 | -1.3% |
| Cramlington | 1766 | 2002 | 1881 | 1982 | 2242 | 1883 | 1955 | 2035 | 4.1% |
| QE Gateshead | 2224 | 2148 | 2415 | 2141 | 2327 | 2262 | 2235 | 2294 | 2.7% |
| South Tyneside | 1118 | 997 | 864 | 941 | 972 | 993 | 934 | 926 | -0.9% |
| UHND | 2011 | 2380 | 2060 | 2245 | 2454 | 2150 | 2228 | 2253 | 1.1% |
| Darlington | 2103 | 2239 | 1935 | 2077 | 2015 | 2092 | 2084 | 2009 | -3.6% |
| Cumberland | 1456 | 2082 | 1648 | 1621 | 1495 | 1729 | 1784 | 1588 | -11.0% |
| Whitehaven | 1714 | 1756 | 1378 | 1522 | 1602 | 1616 | 1552 | 1501 | -3.3% |
| Network | 30108 | 29672 | 27739 | 27376 | 28171 | 29173 | 28262 | 27762 | -1.8% |

Table 5 – SC care days by year plus rolling 3-year averages

| Unit | Total Care Days | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Financial Year | | | | | 3 Year Average | | | |
| | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 12-15 | 13-16 | 14-17 | % diff |
| RVI | 11145 | 11867 | 10748 | 9935 | 9293 | 11253 | 10850 | 9992 | -7.9% |
| JCUH | 8209 | 7396 | 7839 | 6954 | 7477 | 7815 | 7396 | 7423 | 0.4% |
| North Tees | 4951 | 4978 | 4824 | 5549 | 5582 | 4918 | 5117 | 5318 | 3.9% |
| Sunderland | 5353 | 5066 | 5190 | 5280 | 4965 | 5203 | 5179 | 5145 | -0.7% |
| Cramlington | 1902 | 2158 | 2093 | 2143 | 2426 | 2051 | 2131 | 2221 | 4.2% |
| QE Gateshead | 2338 | 2285 | 2537 | 2218 | 2389 | 2387 | 2347 | 2381 | 1.5% |
| South Tyneside | 1188 | 1031 | 901 | 1003 | 1028 | 1040 | 978 | 977 | -0.1% |
| UHND | 2192 | 2587 | 2343 | 2526 | 2741 | 2374 | 2485 | 2537 | 2.1% |
| Darlington | 2372 | 2499 | 2115 | 2305 | 2168 | 2329 | 2306 | 2196 | -4.8% |
| Cumberland | 1552 | 2225 | 1790 | 1764 | 1632 | 1856 | 1926 | 1729 | -10.3% |
| Whitehaven | 1822 | 1848 | 1485 | 1615 | 1712 | 1718 | 1649 | 1604 | -2.7% |
| Totals | 43024 | 43940 | 41865 | 41292 | 41413 | 42943 | 42366 | 41523 | -2.0% |

Table 6 – Total cot care days by year plus rolling 3-year averages

**Workload: a rolling review**

We are now able to benefit from 8 years' worth of Network data and this has become progressively more robust and comprehensive. The summaries on tables 1 through 5 summarise the main areas of activity across the Network's 11 neonatal units. The historical date for "JCUH" will continue to include the activity from the SCU at the Friarage Hospital, Northallerton up until October 2014 when the SCU there closed and all activity was transferred to the Middlesbrough site. Also, as highlighted last year, the SCU at Wansbeck Hospital, Ashington transferred to the new facility at the Northumbria Emergency Specialist Care Hospital, Cramlington in June 2015 but is termed "Cramlington" for ease of referral.

The birth activity data has shown a small reduction over both the last year and also the 3-year rolling average, yet a very small increase in the number of total admissions. All care levels are showing a reduction in cot days activity. Within those statistics, there is significant and rather random variation. North Tees in particular experienced a large rise in admissions, yet had a fall in births. The aim of these tables remains to try and present a comprehensive overview of each Unit's core activity year on year as well as the rolling averages to highlight the trends and how variation on capacity has had a bearing on these key metrics. It will be interesting to see how future reconfiguration of services impacts on this activity, especially the new patient pathways that have been agreed following the RCPCH Report's recommendations for the four NICUs.

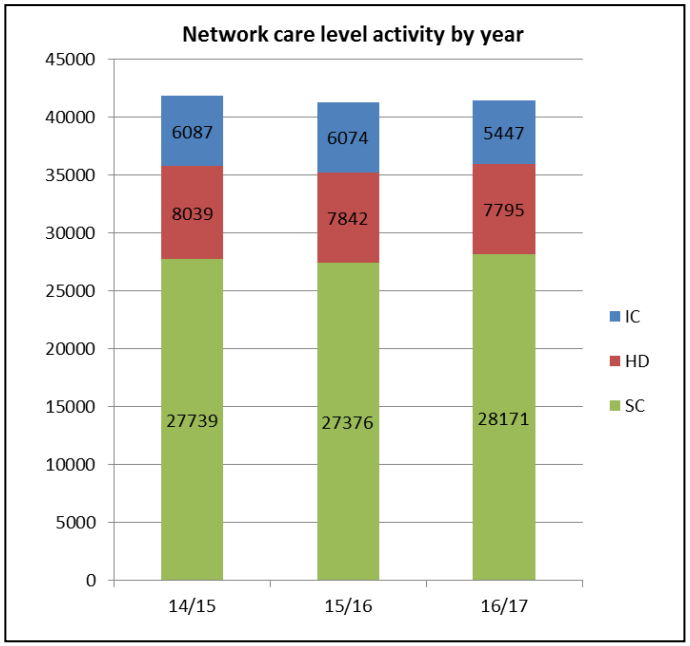



Table 7 –Network yearly network activity at each care level

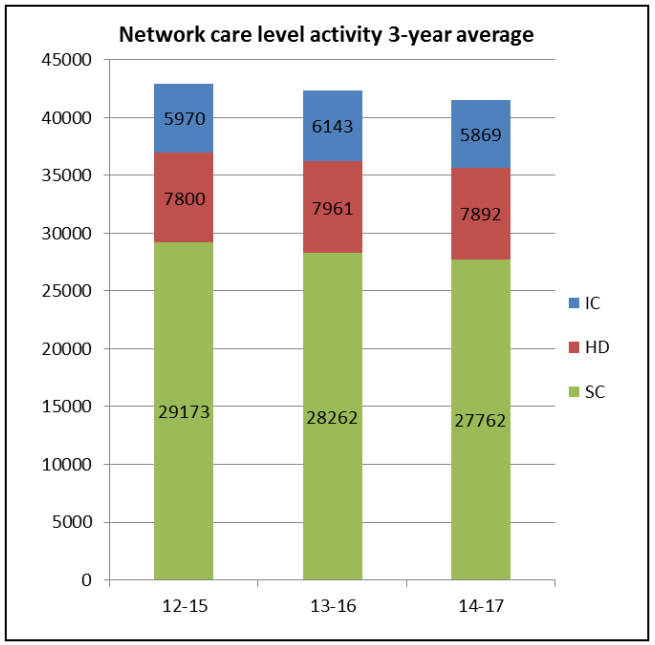



Table 8 – Network rolling 3 year averaged activity at each care level

Table 7 highlights the shift in total cot days by level of care over the last 12 month with a marked reduction in IC days, a slight reduction in HD days that has been pretty much offset by a sharp increase in SC days, but again, when individual Unit activity is examined, there is a lot of variation from year to year and unit to unit with little sustained trending. However, one trend that is apparent can be seen from Table 8, which shows a reduction in total care day activity from the 3-year rolling averages, with only the SC days showing sustained decreases.

Table 10 demonstrates the NICU activity against the "commissioned and funded" IC/HD cots, again showing as in previous years that this in general is significantly higher than the capacity being funded, reflecting the ongoing high demand for these cots well outstripping the total supply and only being catered for due to very high occupancy levels and the ability to flex the SC cot number totals with these in the total Unit capacity. This is, as has been pointed out in previous Reports, simply neither safe nor sustainable and well above the recommended average 80& level specified by the DH Toolkit (20019), BAPM and NICE Standards.

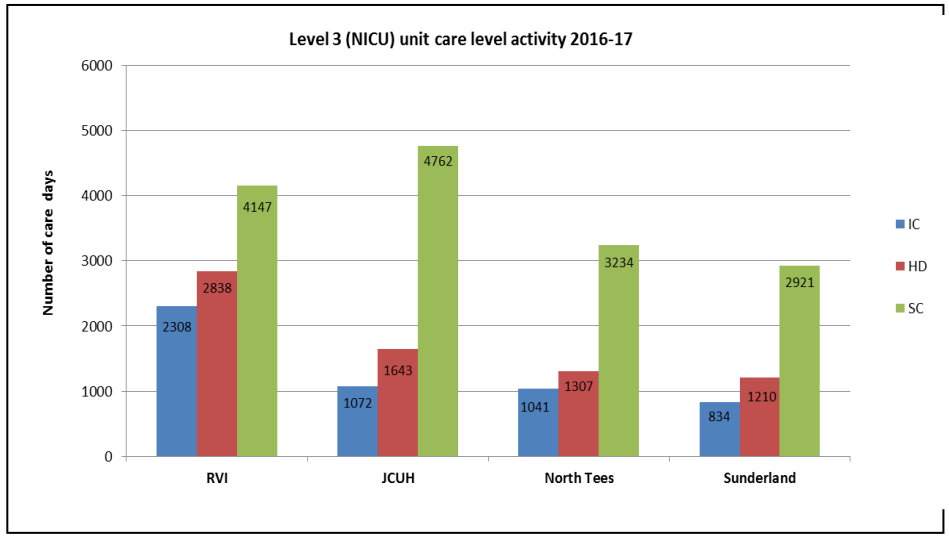



Table 9 – Total cot days by care level for each NICU

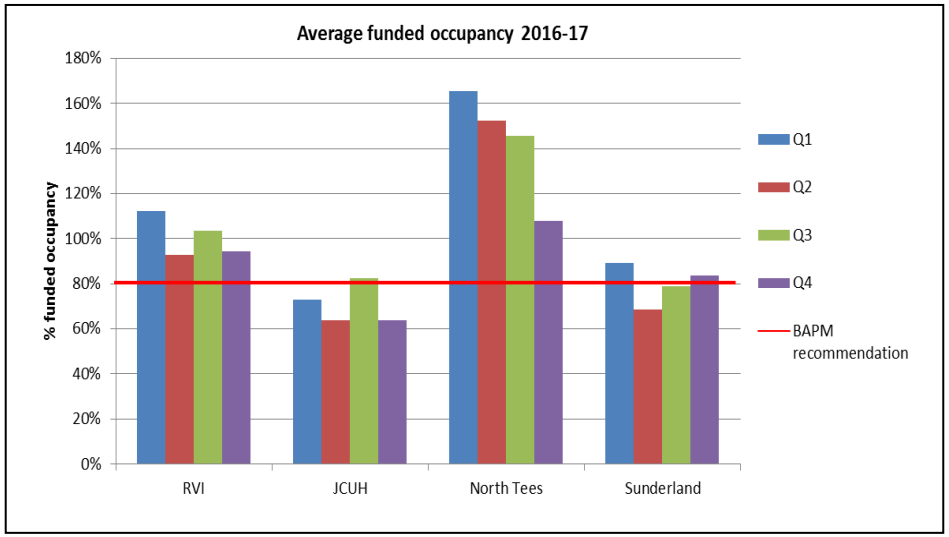



Table 10 – Average occupancy level for "funded" NIC/HD cots

Table 11 opposite shows the average activity by occupancy level for each of the Network's seven Special Care Units (SCUs) by each quarter. These are mapped by using the declared total cots available from each Unit and the total numbers of babies by total cot days, to give an average percentage. Due to the way we calculate these figures, there are times when the actual occupancy levels are significantly higher and also lower than these and at times of peak activity the SCUs can be over-capacity.

The other factor that influences these occupancy levels if the change in declared unit capacity in terms of the available cots. As an example, Gateshead have reduced their capacity to 8 cots from 12, which has had a marked effect on the occupancy levels. As the chart shows, this has meant that their average occupancy levels are much closer (if regularly slightly over) the BAPM recommended 80%level.

All the other SCUs for the year 2017-17 were operating at much lower average occupancy levels, although again at times of peak activity, some were close to or occasionally over capacity.

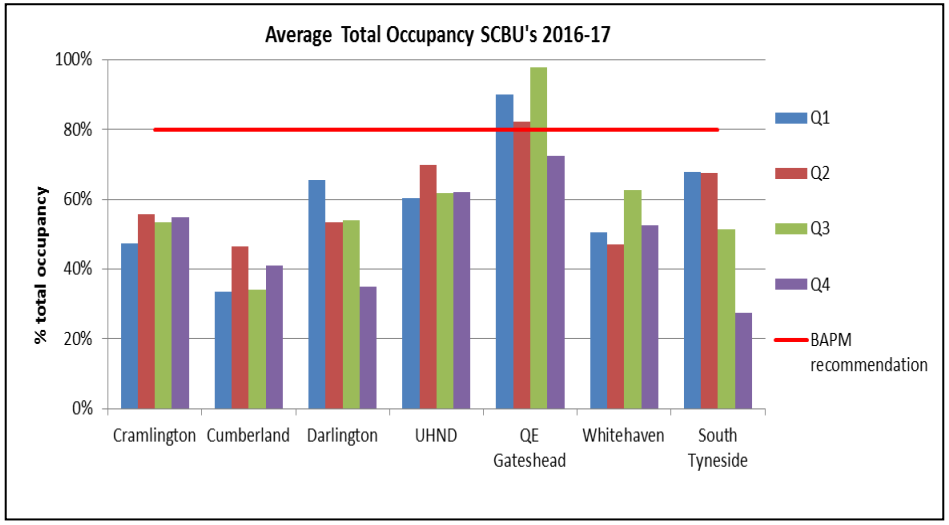



Table 11 – Average SCU occupancy levels by Unit for 2016-17

Building on what we started in the previous year, the Network has continued to report on some key "performance indicators" as part of our established regular quarterly reporting process. The aim of this was to try and allow us to focus on some specific areas for the whole Network and benchmark performance to highlight variation, particularly where this already feeds into national reporting such as NNAP (National Neonatal Audit Project).

We have again included the term admission rates as benchmarked against the nation average as shown in Table 12. This once more demonstrates that when aggregated then averaged, we do very well when compared to the agreed Network target of 5% and this is certainly very favourably compared to other neonatal ODNs and national figures, but a significant amount of variation is present within these averages, with a wide range. This is particularly important as the national focus on aims to reduce term admission rates is at the heart of the ATAIN project as well as the national MNHSC and as a Network we intend to devote more time to reporting these rates in more detail and feed them into the LMS plans.

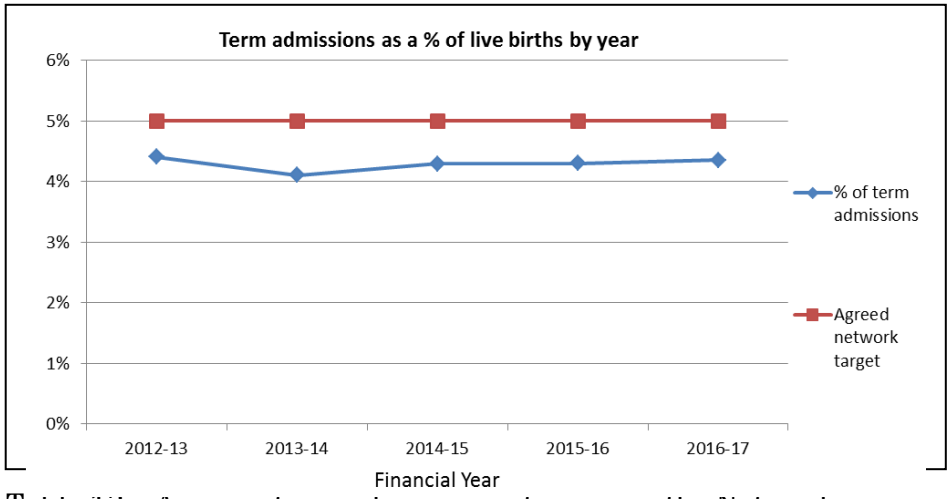



Table 12 – Average term admission rates across the Network

## NNAP Audit indicators

We have continued to report on a quarterly basis the now well established and accepted NNAP data obtained. This is taken directly from the BadgerNet database and reported annually on a fully national basis, with the aim of benchmarking and thus highlighting specific areas that allow performance comparison by both network and individual unit level. This enables interventions to be planned where improvements can be made, as well as highlighting areas of excellence and best practice.

As can be seen from the tables opposite and below, performance varies but what we are ideally looking for are ongoing improvements – such as the percentage of babies being admitted with temperatures in the acceptable/desired range. Where these are found to be outside the range, action can and should be taken to improve these rates.

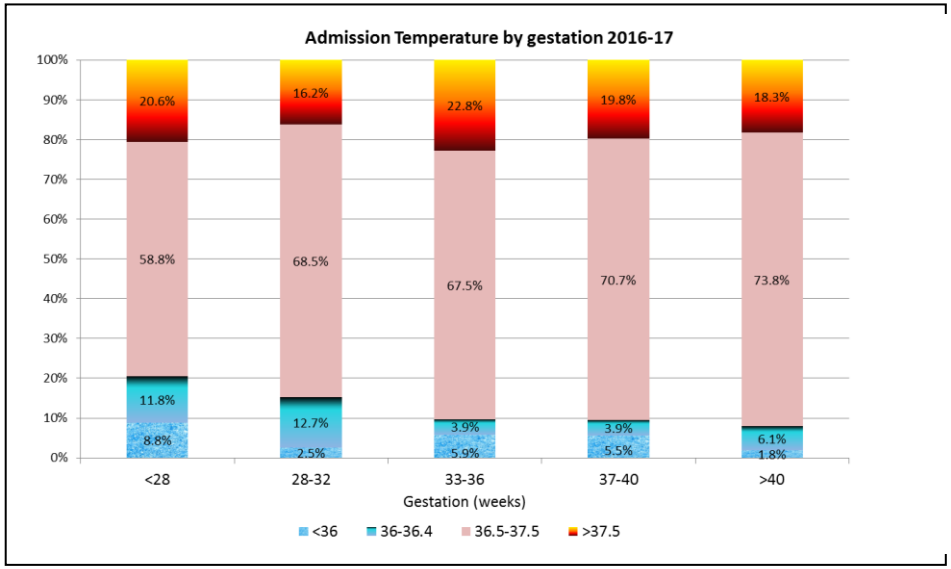



Table 13 – Network admission temperatures by gestation (NNAP measure)

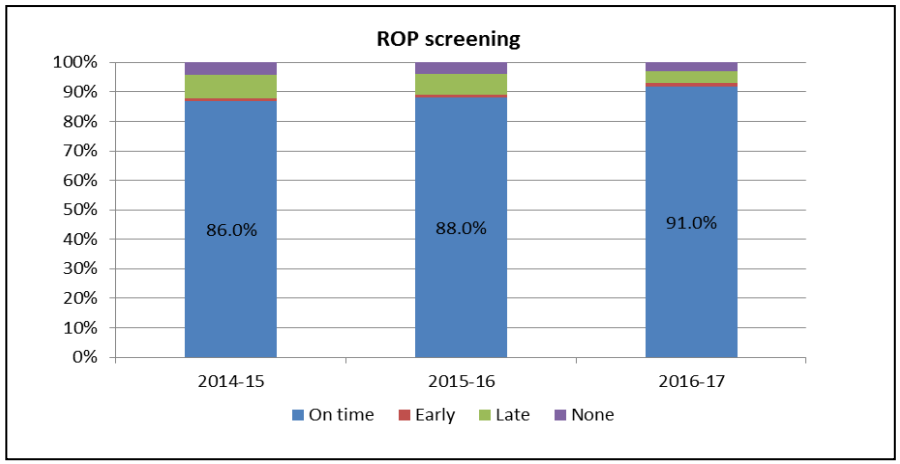



Table 14 – Network ROP screening rates (NNAP measure)

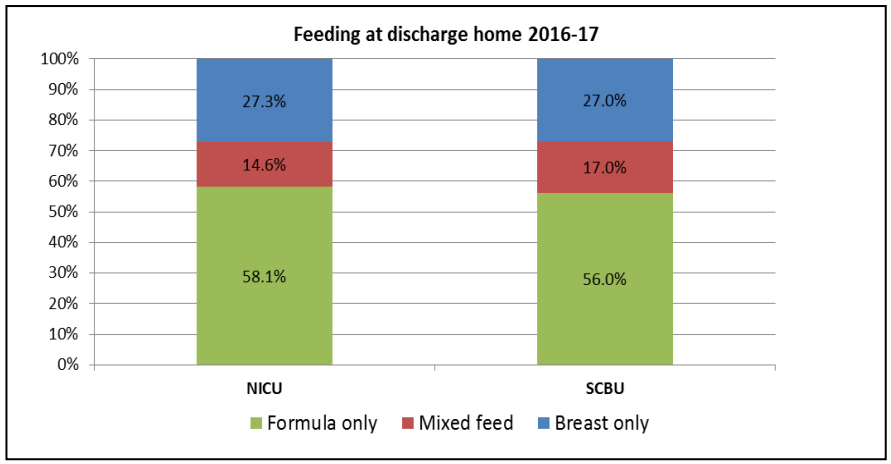



Table 15 – Network feeding method at discharge (NNAP measure)

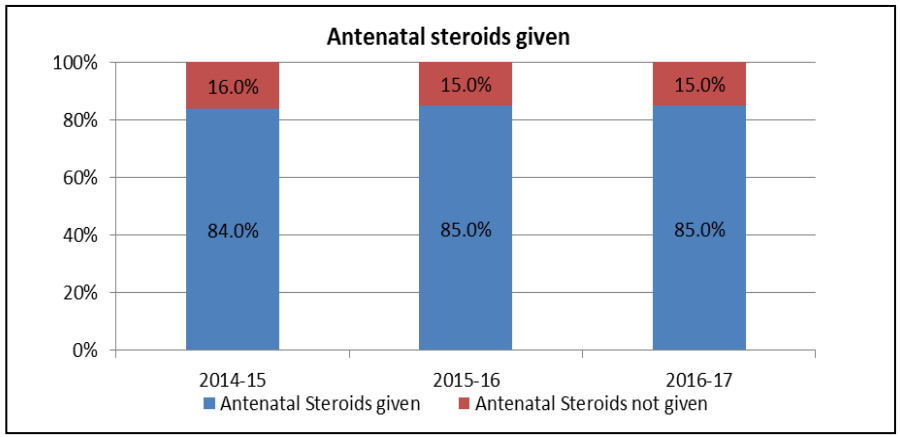



Table 16 – Network Antenatal steroid administration (NNAP measure)

Tables 14-16 are taken from the NNAP Report for 2016 that uses 2015 data - , which is the most recently published. All the data is taken directly from BadgerNet by NNAP and then used for the key indicators that they report on. The tables on this page highlight how the Network performs on some of these. As can be seen, there has been good progress with improving ROP screening, but the antenatal steroid administration rates have been stubbornly static.

A lot more detail is available in the full NNAP Reports available via their website, including performance on an individual Trust/Unit basis and also benchmarking against other comparable Units (NICU with NICU, SCU with SCU etc.). NNAP also performance report on some of their measures, identifying outliers and this is then used to bring about improvements where necessary. The Network continues to compare favourably on most metrics with other neonatal networks, although for Breast milk at discharge and BPD, we do struggle and compare much more poorly, so much is still to be done.

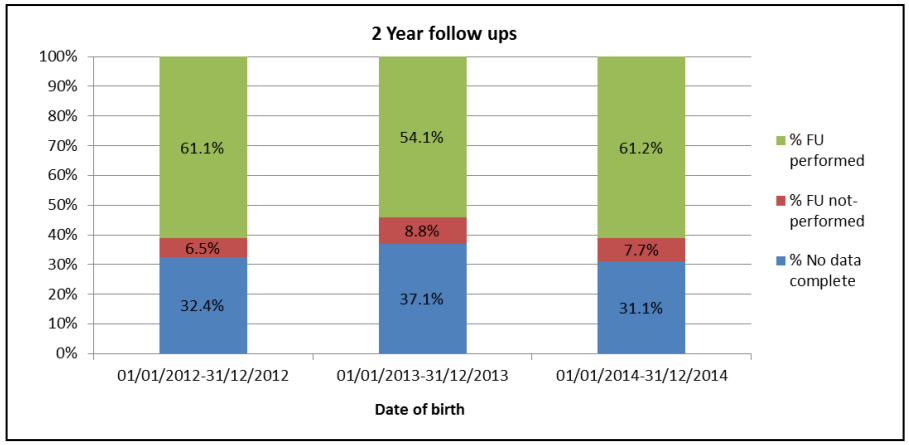



Table 17 – Network 2-year follow-up rates on BadgerNet (NNAP measure)

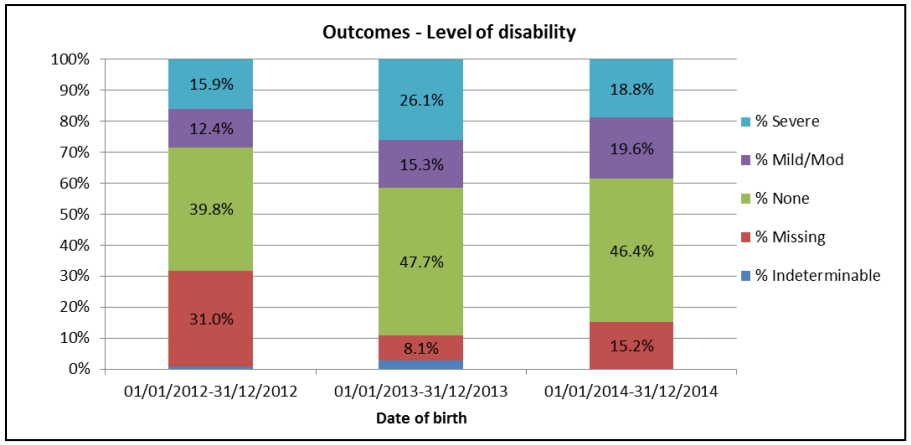



Table 18 – Network 2-year outcomes on BadgerNet (NNAP measure)

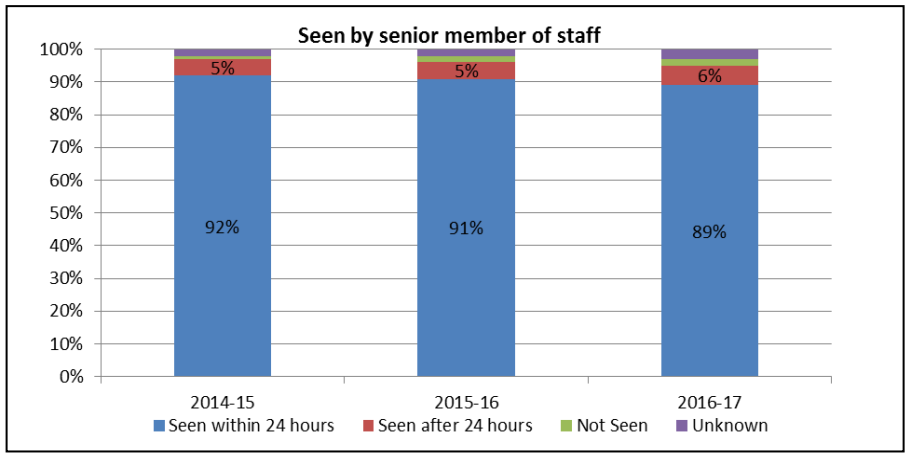



Table 19 – Babies seen by senior member of staff (NNAP measure)

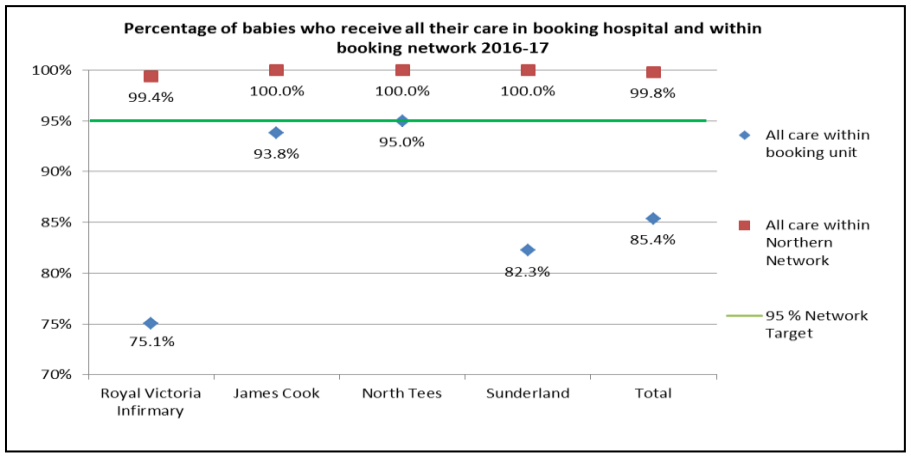



Table 20 – % of babies receiving their care in Network (NNAP measure)

The tables above show the ways in which the Network performance against key measures varies, but the trends are generally positive. For example, the 2-year follow-up rates are trending positively (with the number as being recorded as "no data" at their lowest levels) and improving, despite a blip in the previous year, and encouragingly, the reporting of babies outcomes has shown a reduction in babies assessed at 2 years being deemed as having a "severe disability". We have also again recorded the best performance in England in terms of the babies cared for in Network as measured against place of booking – although as reported elsewhere, this continues to be offset against unacceptable high average occupancy rates (particularly at the RVI) and is simply not sustainable.

# Neonatal Transport – a Report by Rob Tinnion (Transport Consultant)

2016/2017 has been a year of establishment and evolution during which the Northern Neonatal Transport Service (NNeTS) has moved steadily towards fulfilling the service and staffing model outlined in the 2015/16 Northern Neonatal Network report. Doing this against the current climate of austerity across the NHS has been challenging. However, we have remained positive about progress to date and for the future.

NNeTS is now fully recruited to our nursing establishment (11 WTE specialist nurses) and we have welcomed new staff to the team from all corners of the region. This breadth of experience will ensure that innovation and excellence remain at the forefront of all that we do. Three out of six Transport Nurse Practitioner posts have been filled. Our two trainee Nurse Practitioners (Katie and Karen) have done fantastically well passing their first year of study at Sheffield University to become Nurse Practitioners, while Danielle (already a qualified ANNP) has been working hard developing the service and its family centred ethos with guidance on family members travelling with their babies.

Further recruitment for the three remaining posts Transport Nurse Practitioner posts, with a view to successful candidates starting the ANNP course in September 2018, is underway. Our administrative support team (previously labelled 'call handlers' but renamed to reflect the actual breadth of work they do day to day) has expanded from one to three, though it is with regret that we bid farewell to Brian who is moving on to start his nurse training in September. He will be hard to replace, though it is fantastic that what he has seen since joining NNeTS has inspired him to change career and we wish him luck. We are always happy to hear from anyone who might be considering a career in Neonatal Transport. For everything from discussions about career options and vacancies, to acquaint visits, please contact us. We will be holding an open day/recruiting stand to showcase our work in January at the RVI, so please do come and visit us if you are interested.

NNeTS provides a hotline (24/7) for referrals, with 24/7 access to a consultant neonatologist for advice if required. We routinely run two transport teams during daytime hours and one overnight, and as commissioned our remit includes: acute uplift; repatriation (including for capacity reasons); and supporting planned surgical or outpatient work (such as PDA ligation) for babies within the Northern region.
Our exclusion criteria (i.e. the limitations of the types of babies we can transport) remain as for the previous two teams, namely we are unable to move babies >6kg or >6m old (due to the limitations of incubator transport) and or those with illness or injury outside the scope of 'neonatal' medicine (for example polytrauma or meningococcal sepsis). For babies where the latter is not clear, a discussion with our NNeTS consultant on call is always welcomed.

At NNeTS we have a close working relationship with the North East Children's Transport and Retrieval (NECTaR) team, who are located a short distance away from us at the Newcastle General Hospital site. Both teams operate a 'single point of contact' principle for referrals, so in the unlikely event that an appropriate referral is made to NNeTS which we are unable to fulfil within the required response times, we will liaise with NECTaR to arrange between us a team to move the baby which is most suited to, and the best fit for, the needs of the patient. After the initial referral phone call to

NNeTS, we will not ask you to ring an alternative provider (and we ask you not to do so of your own initiative) as parallel referrals create confusion and may cause delay in providing the transport.

As the service has evolved over the last 12 months, there have been fewer transports conducted by other organisations around the region. Most notably the volume of transports done by the team at Middlesbrough has reduced as was predicted. On behalf of the NNeTS team I'd like to formally thank them for the support they have provided to the NNeTS team during this year of establishment. In parallel, the total number of transports undertaken by NNeTS per quarter has increased, and overall, there is a trend to increasing numbers beyond the sum of the two pre-existing teams' annual work. We are trying hard at NNeTS to capture data about any transports which occur within region that we should have completed, but didn't. As the regional team, this data informs us regarding operational capacity and readiness, and we have therefore to capture it.

In addition, there are governance considerations regarding competency and patient safety if these are being done ad-hoc out with the regional team. When we canvassed opinion from the region earlier in the year there appeared to be no appetite from any centres to maintain a transport capacity. This has subsequently been confirmed at face-to-face liaison visits. There are ongoing changes in units across the region which will impact intrauterine and extra uterine transport patterns and NNeTS will try to remain flexible and responsive to the demands of these changes.

We always prefer to hear as far in advance as practically possibly about the likely need for transport especially if for repatriation (HDU or SCBU) or planned work. As a service we are benchmarked against national standards and use a prioritisation scheme to organise work during busy periods. These include: an OTR <1 hour and arrival time of <3.5 hours at the referring centre for time-critical transports; non-time critical uplifts within 24 hours and other work either planned or as soon as the opportunity arises (but may be >24 hours). Future data for NNeTS will be presented in a slightly different in the Network annual report way to reflect this.

At NNeTS, we have made use of our host Trust's governance processes and structures to ensure that we establish an ethos of transparent and accountable practice within NNeTS including: daily review of practice, bimonthly governance meetings and serious case reviews, involvement with serious case reviews/child death reviews at regional NICUs/SCBUs, development of guidelines and audit of team performance. We are developing guidelines and standard operating procedures for the team which will be made available to NNN members as part of our transparent approach to providing service. A Network Officer's report for NNeTS is made available quarterly to the network board outlining progress. As part of establishing and strengthening this approach, a medical and nursing representative has been identified in each service user organisation (NICUs/SCBUs) and any 'business' information will be made available to them by email. Reciprocally, any issues raised locally which concern or involve NNeTS should be raised within units to these contacts, who can then contact either me or Beverley Forshaw (Specialist Nurse Team Lead) here at NNeTS directly. We are always happy to hear from you either by telephone or email. In addition to clinical service user feedback, we are also seeking feedback from parents about their experience of NNeTS. This may be either with the team throughout transport (for the increasing numbers of transports during which we have one parent accompanying their child), or in the interactions with the NNeTS team at the referring centres. We are doing this by giving all parents a feedback form (with return envelope) and we'd be grateful if you could encourage them to fill in the forms and return them to us through the post, at your centres.

For the coming 12 months, there are a few areas in which we would like to make progress to improve the responsiveness and flexibility of the service. We are actively reviewing our existing equipment with a view to improving the quality of care provided to individual babies on respiratory support, of all, types during transfer. We are in the process of finalising call conferencing facilities at the NNeTS base to improve the efficiency with which referral calls are dealt with, in particular the access to consultant input across multiple specialities in a single call. Over the coming 12 months we aim as a team to continue to provide high quality service to the Network members and provide a service which puts the babies at the centre of our practice, with family integration where possible. To this end, we are working with the Network to have a NNeTS section on the new Network website where we will put information about our practice (guidelines, SOPs etc.) and how to contact the team.

Rob Tinnion

# Transport 2016-17

| | Receiving Hospital | | | |
|---|---|---|---|---|
| **Referring Hospital** | **Royal Victoria Infirmary** | **James Cook** | **Sunderland** | **North Tees** |
| Carlisle | 14 | 3 | 2 | 1 |
| Cramlington | 17 | 3 | 4 | 6 |
| Darlington | 8 | 27 | 0 | 8 |
| Freeman | 19 | 5 | 3 | 6 |
| Gateshead | 16 | 4 | 4 | 1 |
| James Cook | 18 | 0 | 2 | 7 |
| North Durham | 13 | 2 | 11 | 14 |
| North Tees | 20 | 4 | 4 | 0 |
| Out of Area | 3 | 0 | 4 | 0 |
| Royal Victoria Infirmary | 0 | 22 | 40 | 32 |
| South Tyneside | 5 | 0 | 9 | 3 |
| Sunderland | 35 | 2 | 0 | 5 |
| West Cumberland | 7 | 1 | 1 | 4 |
| Total | **175** | **73** | **84** | **87** |

Table 21 – Transport activity for 2016-17 into NICUs

Tables 21-29 that are shown above/opposite and below on the following pages provide a summary of the main transport activity metrics for 2016-17. We do report on these in our quarterly Network reporting, but these provide a useful aggregates synopsis and it will be particularly interesting to see how the NNeTS performance compares to the "combined" activity of the two previous teams that operated from the RVI and JCUH, who no longer now provide any transport services, but at the time of this report were doing do, although it was gradually being reduced as NNeTS became operational.

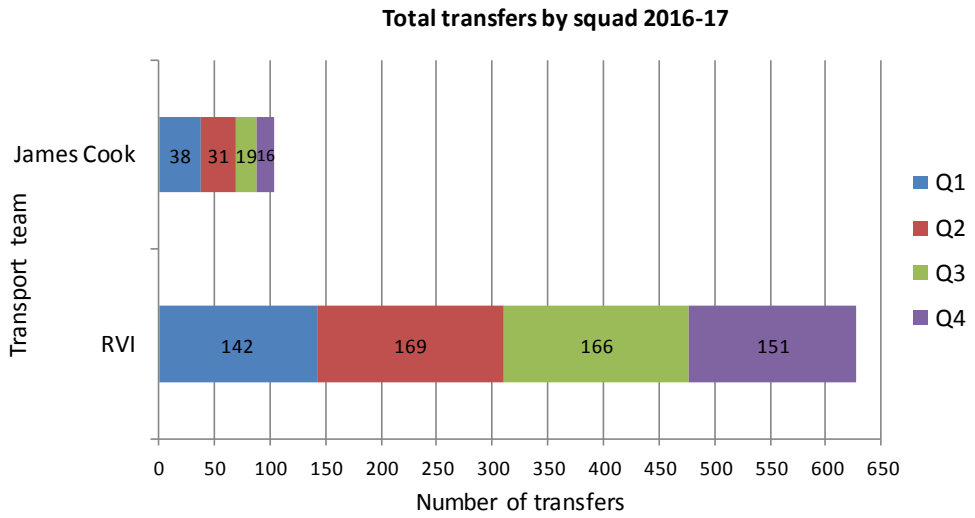



Table 22 – Transport activity for 2016-17 by team

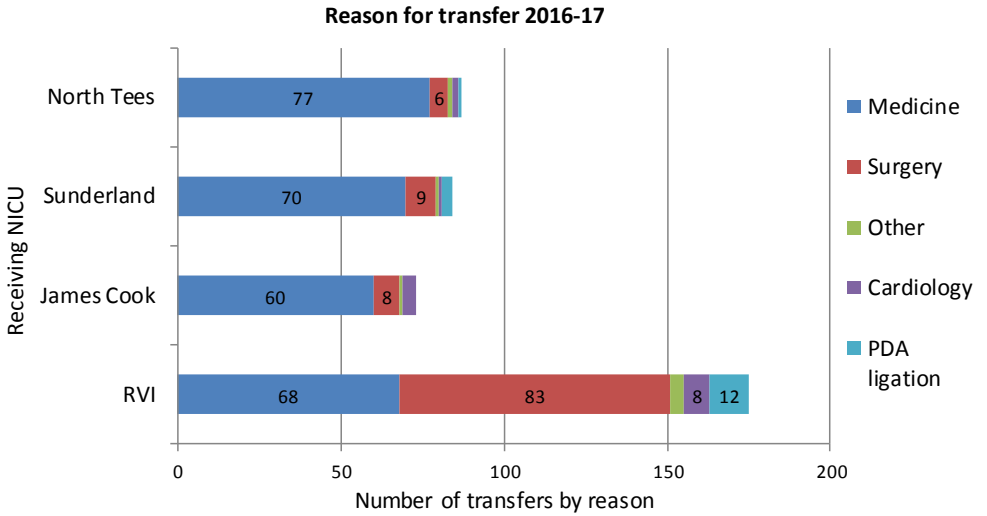



Table 23 – Transport activity for 2016-17 by clinical reason

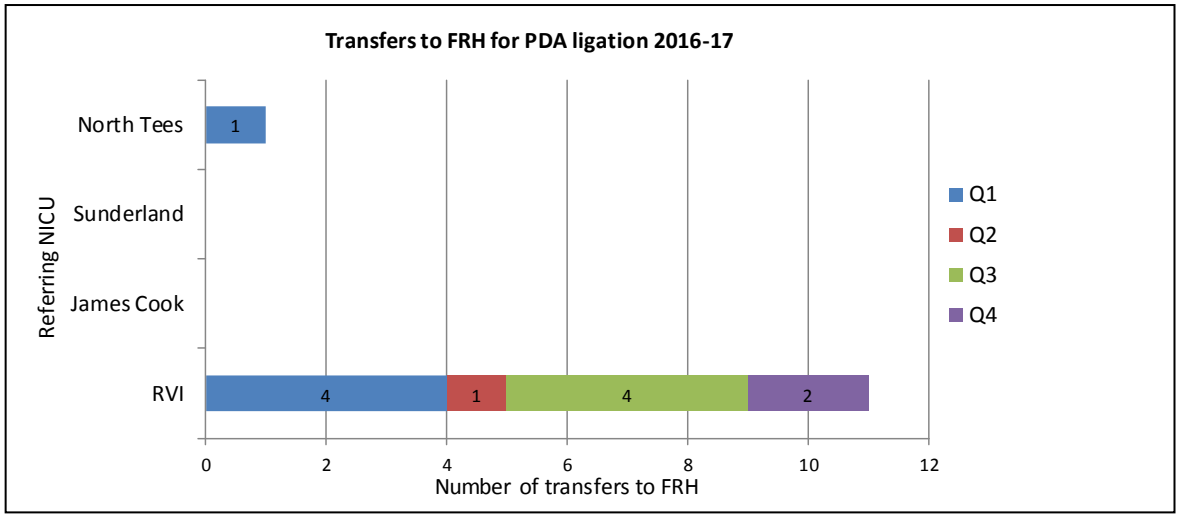



Table 24 – Transfers during 2016-17 for PDA Ligation to the Freeman Road

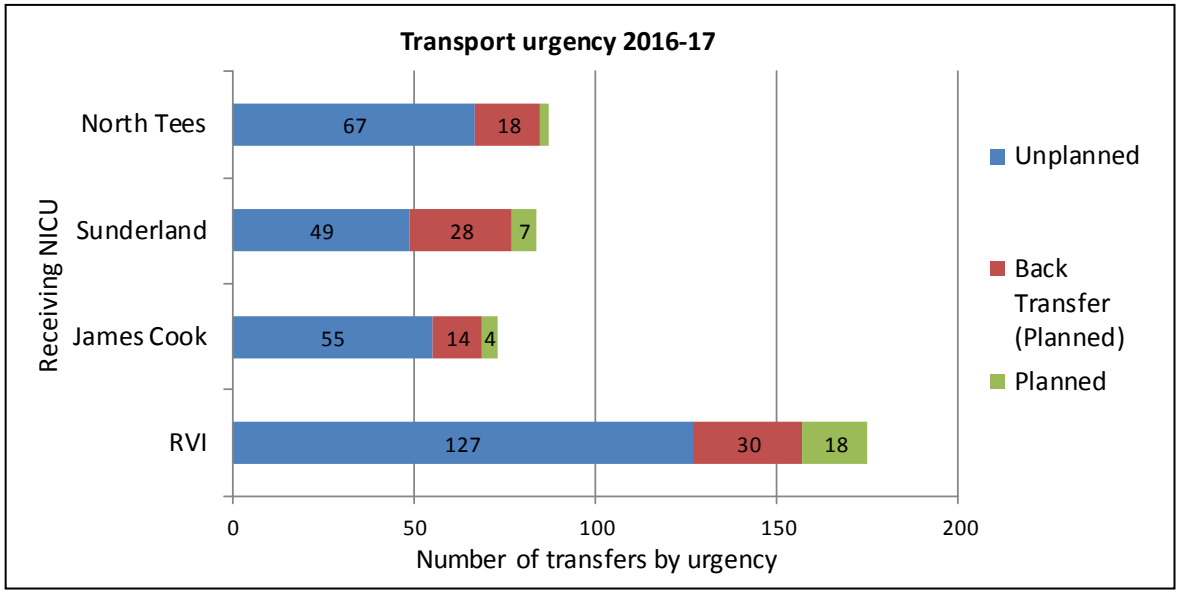



Table 25 – Transport activity for 2016-17 by referral urgency

The tables on this and the following page highlight the main transport activity undertaken during 2016-17 and as Table 26 shows, the number of transfers performed by the JCUH team was starting to reduce as the new NNeTS team became established during the latter part of this year. This will be reflected by further reductions to zero in subsequent reports.

Another factor to note is that shown in Table 28 – reflecting the fact that since the establishment of the NECTAR paediatric transport team in 2015-16, the number of "paediatric" (i.e. babies not admitted to neonatal units requiring transfer) transport episodes undertaken by the neonatal teams has diminished to pretty much zero.

The final point to be considered is that the total number of neonatal transfers undertaken (Table 26 - aggregated across both teams) has now started to show steady increases year on year and at their highest ever. It will be interesting to monitor this as new capacity becomes available at the RVI and other factors such as reconfiguration and the NNeTS service become fully operational.

# Transport 5 Year Summary

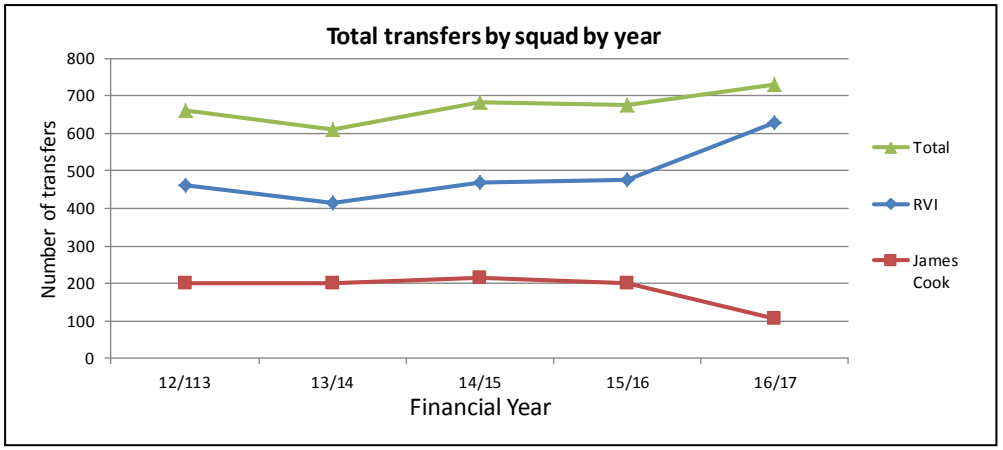



Table 26 – Total Transfers by each Transport Team

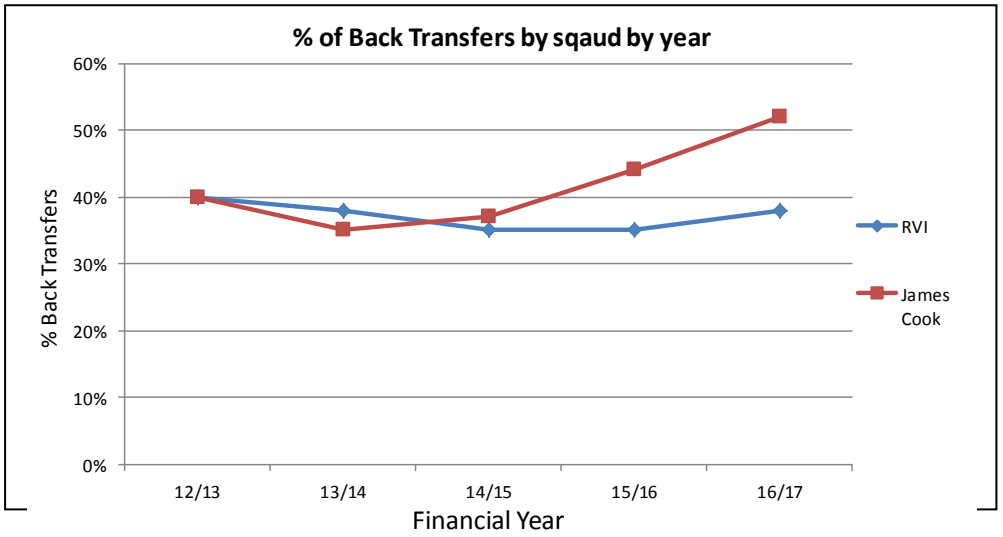



Table 27 – Percentage of back transfers undertaken by Transport Team

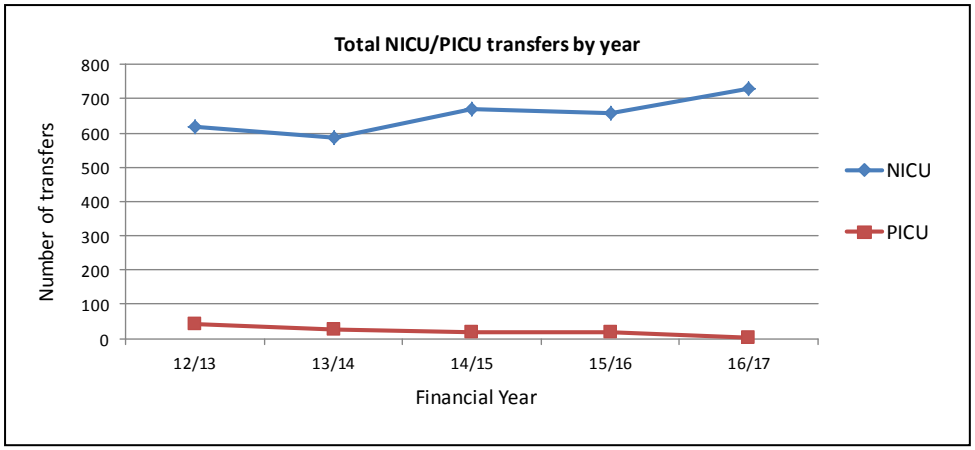



Table 28 – Total Neonatal/Paediatric Transfers undertaken

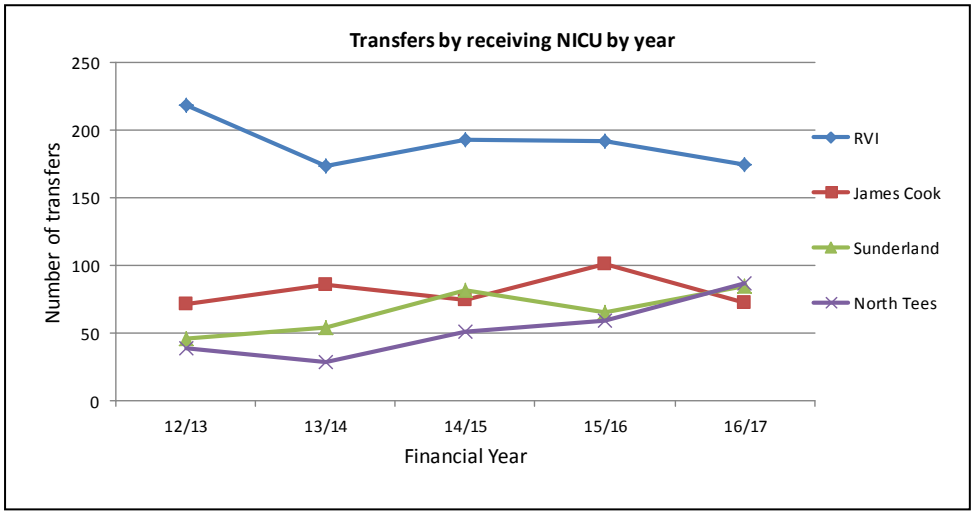



Table 29 – Transfers by receiving NICU

# Northern Neonatal Network support for staff Education & Training

Earlier in this Report, Richard Hearn as Educational Lead outlined the main areas that the Network has established education and training support and the various initiatives he continues to lead on, particularly the Stabilisation Training for SCU staff. This continues to be our best-established and evaluated training day and is always very well received by the staff who undertake it. It is therefore unfortunate that it has not always been possible to deliver it to each of the seven SCUs (combined with staff across the Network into 4 courses), usually due to staffing issues at the Units concerned. Indeed, one course in 2016-17 had to be cancelled at very short notice due to staff having to be pulled back onto clinical duties, which is understandable as the service needs have to come first, but hugely disappointing for all concerned, particularly the faculty who in most cases volunteer to teach on the course in their own time and of course the staff who miss out on the training itself. It can only be hoped that this situation is addressed to prevent re-occurrence in future years

As well as the stabilisation training, The Network's Annual Conference continues to be a very well-evaluated event, although attendance at this is often very patchy, with some neonatal units and staff groups grossly under-represented, which is disappointing and frustrating for the Network Team who put the day on and manage to co-opt speakers from not only within the Network but across the UK to present on topics of current interest. At the 7th Annual Conference held in September 2016, around 65 delegates heard speakers discuss topics that included "The Evolving Role of the ANNP on the neonatal unit", "Neonatal Organ Donation", a presentation on the potential uses of telemedicine within neonates, an excellent presentation on Family Integrated Care by a team from Leeds who have pioneered this in the UK.

Another topic that was presented was "The View from a SCBU" from our own Dr Rob Bolton from South Tyneside on his own inimical way. There was then a very seamless link onto what proved to be the runaway slot of the day – a presentation from Sophie Proud, who is a surviving 24-week gestation twin herself, and whilst an inpatient at the RVI in 1996, had been cared for by (amongst others), none other than Rob himself when he was a registrar there. Most remarkable of all, Sophie (like her elder sister Aimee) made the decision to pursue a career in nursing – and at the time of drafting this report has now started her first job as a qualified neonatal nurse at the NICU in JCUH! Sophie gave a remarkable presentation and outlined her own story and how she is now uniquely placed to give an insight into being born extremely premature that few others can. Sophie has also become an ambassador for the Newcastle-based charity Tiny Lives. She is pictured below (right) at the conference after Rob (right) introduced her to the delegates.



Another annual event which is becoming more established is the Educational and Research Workshop that grew out of a suggestion and initiative by Dr Helen Chitty, a senior Trainee who has worked most recently at the RVI and JCUH. In 2016-17, this was facilitated for the second time and evaluated very positively indeed and there was a very definite appetite for repeating the event in future years as it offers an excellent way for people to be kept up to date with research projects that are being undertaken across the Network – often as part of large multi-centre trials, but also smaller scale ones that trainees are undertaking as part of their studies. It has proven to be another example of engagement and attendance being rather patchy but we are hoping that this will grow to become an annual fixture that grows in both stature and this is reflected by more people attending.

The Research Workshop is, like *all* the other educational and training that the Network facilitates, currently free at the point of delivery to Network staff – a unique benefit that no other neonatal ODN offers and with the specific aim of supporting our staff to develop both personally and professionally as well as meet their revalidation obligations in a very accessible and cost-effective way.

We have also continued to develop and refine the content of the quarterly "Network Days" that we facilitate, to allow topics and issues of direct relevance of a clinical nature to be discussed. These are and always have been open to all neonatal staff across the Network and afford a very useful opportunity to be plugged into discussions that focus on case (and more recently moving towards death review and their learning outcomes) studies, as well as clinical governance issues. The Network is aiming to try and "publicise" these more and in a better way once the new website is up and running, as well as via Twitter, which we are aiming to make much more extensive use of, so if you are not already "following" the Network, please do so – our details are on the back page.

Other Educational events and learning opportunities that the Network has facilitated and funded over the period 2016-17 apart from all those summarised above and elsewhere in this Report are summarised as follows;

- In April, the Network facilitated a one-day "Getting It Right – Issues surrounding neonatal bereavement and loss" study day. Attended by nearly 50 delegates, this was a very well-evaluated day dealing with very sensitive but important issues and the strong sentiment on the day was to try and create a follow-up day the following year.

- In June, the Network facilitated its second full "Level 1 Foundation Toolkit Course in Developmental Care" at the Durham Centre, once more run by Inga Warren and her team, enabling another 40 staff from across all of our Neonatal Units to attend. Evaluation from all those who completed the course was excellent and we have planned these to become an annual event budget-permitting.

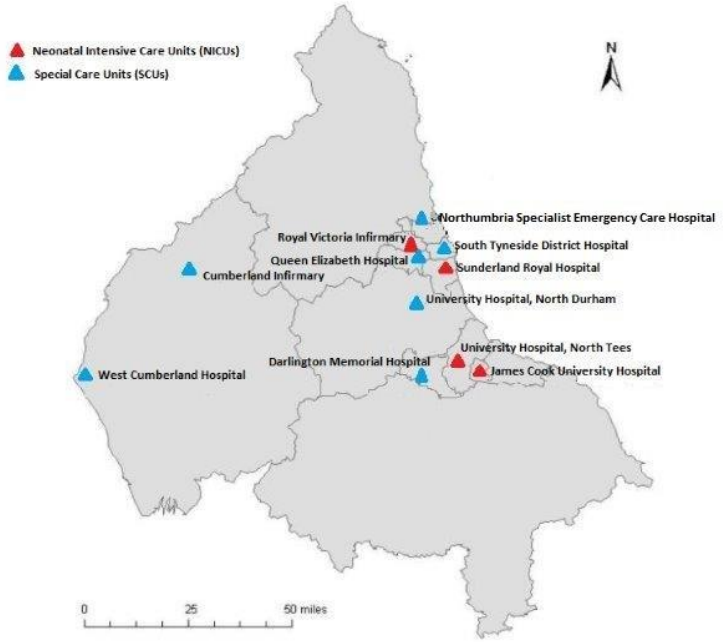
- In November, Sue Thompson (BLISS Nurse for the Network from 2013-16) facilitated a "Family Centred Developmental Care" study day. This was a core day for students on the "Low/High Dependency post-registration module, but it was opened up to all Network staff and in the end, over 30 people attended.

- In March, we funded places for five staff to attend a ''Masterclass'' for the FINE Training Programme following the Level 2 places that we funded for them in 2015.

There are significant challenged ahead in terms of education and training, particularly in respect of uncertainty surrounding the future funding of post-registration education of nurses, which has implications for how they can acquire QIS ("Qualified in Speciality") status as required by national standards and specifications. The Network is at the heart of discussions as to what the future shape of this may look like and be delivered and will continue to provide updates as things develop.

As a Network, we believe it is essential that we have a well-trained, well-equipped workforce in order to provide the very best care possible and that is why we believe that by creating, providing and facilitating these various training and educational opportunities for Network staff, we are continuing to deliver on our core objective of developing health professionals at all levels and disciplines right across the Network. We feel very strongly that we are continuing to equipping and enabling all our staff to provide the best evidenced-based care possible. This is an ongoing commitment to our staff and one we hope that our stakeholders recognise the benefits of and continue to support in an increasingly challenging environment when they themselves are struggling to achieve this. It will also remain the case for as long as we have the resource and budget to do so that we will continue to make it free to Network staff and we thank the NHSE commissioners for their support in this to date and hope it continues.

# The Northern Neonatal Network – our details




NICU (Neonatal Intensive Care Units)

Royal Victoria Infirmary, Newcastle
Sunderland Royal Hospital
University Hospital of North Tees, Stockton-on-Tees
James Cook University Hospital, Middlesbrough

SCBU (Special Care Baby Units)

Northumbria Specialist Emergency Care Hospital, Cramlington
South Tyneside Hospital, South Shields
Queen Elizabeth Hospital, Gateshead
University of Durham Hospital
Darlington Memorial Hospital
Cumberland Infirmary, Carlisle
West Cumberland Hospital, Whitehaven

Network Website – www.nornet.org.uk

Twitter Feed - @NorNetUK

Network Office – Northern Neonatal Network, Room 248, Trust HQ,
Sunderland Royal Hospital, Kayll Road, Sunderland, SR4 7TP.
Tel (0191 541 0139)