Shared data may lead to better neonatal practice but variation in key measures shows improvement is still needed

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When the tenth annual *National Neonatal Audit Programme (NNAP)* report was published in September this year,[1] I was struck almost as much by the programme's growth in participation since its inception as I was by its findings. When the first annual report was published on the 2007 results it covered 107 of the UK's 226 neonatal units, accounting for just 47% of the total. This year, it included data from 181 of the possible 184 units, or 98% of all neonatal units across England, Scotland and Wales.

This level of completeness is a real cause for celebration; it provides us a rich source of reliable data from which we can drive improvements in quality on neonatal units that are charged with delivering care for the 100,000 babies born each year either too early, with a low birth weight or with a medical condition requiring specialist treatment.

If the level of participation then is something to celebrate, the picture presented to us by the audit's results is a far more mixed one. We have seen overall improvements in many areas of care for preterm babies, which is obviously very encouraging. The number of units that have made significant improvements to particular aspects of care over a 12-month period is also impressive. It shows us that progress can be made – and the positive impact on the health of these babies can be huge.

The report highlights progress on several audit measures (**FIGURE 1**) including ensuring that babies' eyes are screened to minimise the risk of premature visual loss (now 94% up from 93% in 2015), maintaining premature babies' temperature within the recommended range (61% up from 58% a year earlier), and that parents received a timely consultation with a senior member of the neonatal unit team (90% up from 88% in 2015).

In addition to these relatively small overall improvements, there are several examples of regional neonatal networks making significant strides forward over the course of the year. For example, in Wales reporting of health data from a two-year follow-up check for babies born at less than 30 weeks' gestation rose from 31% in 2015 to 60% in 2016. Similarly, in the Shropshire, Staffordshire and Black Country neonatal network, in 2016 98% of babies had their eyes screened to minimise the risk of premature visual loss compared to 87% in 2015.

It is a fair presumption that these advances, both small and large, reflect that neonatal professionals are paying increasing attention to data reported in the NNAP report and using it to spur quality improvement in their own units. This became even easier in 2016 when the NNAP online reporting tool was launched. The tool empowers clinical teams to easily identify other units that have demonstrated good practice and make contact to share best practice information to apply to their own unit. The tool has been further revised for the 2016 data report – in particular there is some output about infection allowing

- Are all mothers who deliver babies between 24 and 34 weeks' gestation inclusive given any dose of antenatal steroids?
- Are mothers who deliver babies below 30 weeks' gestation given magnesium sulphate in the 24 hours prior to delivery?
- Do all babies <32 weeks' gestation have their temperature taken within an hour after birth?
- Is there a documented consultation with parents by a senior member of the neonatal team within 24 hours of admission?
- How many babies born at >34 weeks' gestation have an encephalopathy within the first three full calendar days after birth?
- What is the proportion of babies born <32 weeks' gestation who develop bronchopulmonary dysplasia?
- How many bloodstream infections are there on a neonatal unit per 1,000 days of central line care?
- How many babies experienced blood-stream infection on a neonatal unit per 1,000 days of central line care?
- What percentage of babies admitted to a neonatal unit have:
  - one or more episodes of a pure growth of a pathogen from blood?
  - one or more episodes of a pure growth of a pathogen from cerebrospinal fluid?
  - either a pure growth of a skin commensal or a mixed growth with more than three clinical signs at the time of blood sampling?
- Do all babies <1,501g or a gestational age of <32 weeks at birth undergo the first retinopathy of prematurity screening in accordance with the current guideline recommendations?
- What proportion of babies of <33 weeks' gestation at birth are receiving any of their mother's milk when discharged from a neonatal unit?
- Are rates of normal survival at two years comparable in similar babies from similar neonatal units?

FIGURE 1 The audit measures of neonatal care that the 2016 NNAP focused on.

some units to make valid comparisons of infection rates. The aim is for units to review their own data for all measures, and that recommendations in the report provide the initial basis for local, as well as regional, quality improvement plans.

The story, however, is not one of resounding success everywhere. The report identified a concerningly wide regional variance on a number of the key measures.

It is recommended that antenatal magnesium sulphate is given to mothers who are likely to deliver a preterm baby to reduce the risk that the baby will go on to develop cerebral palsy. The audit, however, found that rates varied from 26-70% between neonatal networks. On another key measure – the number of preterm babies discharged from hospital while receiving at least some of their own mother's breast milk – the audit showed a regional variance of 39-78%. Complete two-year follow-up of preterm babies remains a problem. Four out of every ten babies born more than ten weeks early had no two-year follow-up clinical information of any type reported to the NNAP (**FIGURE 2**).

There is no reason why the progress we have seen on many of the key measures cannot be achieved with more success and with far more uniformity across the country. Wherever a baby is born and in whichever hospital they are treated, the care they receive needs to be consistent and of the highest possible quality.

The conclusion to be drawn from this audit is that on some aspects of neonatal care, there is still the element of a postcode lottery and this is still not good enough. Progress has and continues to be made and this reinforces that we must continue to improve how we work with our peers to drive improvement and benchmark our levels of service.

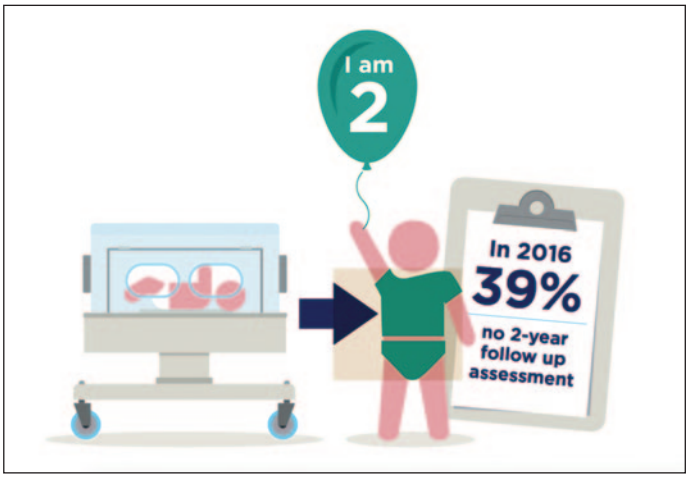

FIGURE 2 Clinical follow-up at two years of age. Babies born prematurely do not always reach key developmental milestones; checks at age two provide a valuable opportunity to identify any potential issues at an early stage. For 39% of babies, no two-year follow-up health data were reported to the NNAP. This figure has improved by only 0.8% since 2015.

Reference

1. **RCPCH.** *National Neonatal Audit Programme 2017: Annual Report on 2016 Data.* [2017] Online. Available at: www.rcpch.ac.uk/child-health/standards-care/clinical-audits/national-neonatal-audit-programme-nnap/national-neonatal.

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