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Using technology to drive quality

Despite being examined at birth, and again at 6-8 weeks, some babies are still being diagnosed late for a number of congenital conditions. The impact can be severe and result in traumatic treatment, multiple operations and long-term disability. Work being undertaken by the NHS Newborn & Infant Physical Examination Programme (NIPE) seeks to address this issue by improving the quality, timeliness and consistency of these examinations.

Offered to parents of newborn babies within 72 hours of birth, the newborn examination includes a general physical top-to-toe check as well as screening for specific conditions: congenital heart disease, cataracts and retinoblastoma, developmental dysplasia of the hips and undescended testes. The examination is repeated at six to eight weeks of age, usually by a GP, as some conditions can develop later.

Early diagnosis is hindered by the considerable variation in how this service is delivered. The launch of national Standards and Competencies for the newborn examination, by the National Screening Committee, seeks to bring consistency to these vital checks¹. Standards and Competencies for the infant examination are in development and will be finalised in 2010.

An important part of the programme's work is underway with three maternity sites involved in a feasibility study to improve the processes underpinning service delivery. Based on the successful national IT system called eSP, used by the NHS Newborn Hearing Screening Programme, the Newcastle Royal Victoria Infirmary, Warrington Hospital and the Royal Free Hospital in London are testing an IT screening management system.

Healthcare professionals carrying out the newborn examination at these hospitals are being asked to record results on this new information system. Screens with drop down menus will make data entry quick and easy. Most examinations will be normal so rather than having to record 'satisfactory' for each individual element, ie heart, hips, eyes, testes, the system enables the practitioner to set all results to satisfactory with one key stroke.

In essence, the information system being developed enables fast collection, searching and interpretation of data to support information and performance management. It is being offered free to hospitals and, when implemented fully, will support local programmes and SHAs in managing risk, making it possible to:

- highlight babies who have not had their examination before they leave hospital

- track children, who have been referred, through the healthcare system – to monitor progress and determine outcomes
- support Trusts in capturing data about the examination to monitor and audit their performance
- support Trusts in demonstrating adherence to national standards for quality assurance purposes.

In addition, data capture from the examination, and analysis of referrals and outcomes for babies, will aid Trusts in planning future healthcare services.

A key part of this work has been the wider ongoing involvement of users and healthcare professionals. They have helped to shape the system, particularly in relation to ease of use, accessibility and suitability for a range of practitioners working in different settings. When rolled out it is envisaged that users will see significant time saving benefits, including:

- automatic production of referral letters
- print out of examination results via pre-populated forms for securing into the personal child health record (PCHR)
- failsafe mechanisms for the identification and management of missed and/or delayed examinations
- quick and easy data manipulation, contributing to management information and decision making – for example, reports can be tailored to list numbers of babies identified with specific conditions and how long babies are waiting for treatment.

Such functionality will enable sites to monitor their performance and quality. It's not who carries out the examination that is important but that the practitioner is competent to do so². The data capture and analysis underpins the whole service and is the means by which quality can be assessed and maintained.

As with the eSP system, used by the NHS Newborn Hearing Screening Programme, the IT screening management system will also have the facility to provide 'Trends' reporting. The Trends database, a management information tool, includes the useful functionality of enabling a hospital to compare its performance against other hospitals.

The information system is part of wider work by the NHS Newborn & Infant Physical Examination Programme to improve the quality, timeliness and consistency of the examinations. If successful, the feasibility study will move to pilot study stage and then to implementation across England starting in Autumn 2010.

References

1. **UK National Screening Committee.** Newborn and Infant Physical Examination; Standards and Competencies. 2008.
2. **Hall D., Elliman D.** Health for all children, 4th edition. Oxford University Press. 2006.