Regional guidelines

Development of regional guidelines: the way forward for neonatal networks?

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Successful development of regional guidelines can help to achieve unified neonatal practice

Within the United Kingdom, the recently published National Service Framework for Children's Services argues that neonatal intensive care should be commissioned on a regional basis.^{1,2} Until recently, neonatal intensive care was provided by individual NHS trusts working in an ad hoc manner to provide intensive care support for an often ill defined geographical area. Traditionally, smaller units referred unstable babies to a regional centre. The transport of these babies was again provided in an ad hoc manner, usually by a retrieval team made up of the on call doctor and nurse from the receiving hospital. District hospital clinicians often felt frustrated at the inconsistent stabilisation procedures requested by relatively inexperienced transport doctors. One of the aims of establishing managed clinical networks is to make the clinical service more equitable across several organisations and often a large geographical area. This can be achieved by clinicians and trusts working in partnership with a centralised transport team, agreed patterns of referral, and shared protocols, based on the best evidence. We here show that regional guideline development is an excellent tool to tackle the challenge of a variable evidence base and achieve unified neonatal practice, and can therefore facilitate a close partnership between all hospitals within a network.

Within the Yorkshire Neonatal Network (birth rate 39 000/year), we have recently successfully developed, implemented, and audited the Yorkshire region guideline for neonatal stabilisation before transfer. Our network consists of 12 hospitals, four of which provide level 3 neonatal intensive care. The guideline was developed on the basis of a process using transparent methodology, careful leadership, consultation, efficient communication, and good team work. As far as we are aware, this is the first regional neonatal network guideline within the United Kingdom.³ The purpose of the guideline is to: (a) help referring hospitals with neonatal stabilisation procedures before the arrival of the transport team; (b) reduce variation in neonatal clinical practice across the region, in

order to make the transfer process more efficient, safe, evidence based, and up to a standard of care equal to that offered in a level 3 centre; (c) provide a standard against which nurses and doctors can assess their competence and understanding of newborn stabilisation. The guideline itself is available on our network website (www.yorkshireneonet.org.uk).

Often, deficiencies in guideline development at a local level are attributed to poor methodology, inadequate synthesising of evidence, lack of multidisciplinary consultation, ineffective dissemination and implementation, or insufficient clarity when identifying outcomes.⁴ These factors have often inhibited the development of successful guidelines, leaving teams feeling disheartened and demoralised. When developing a regional guideline, we therefore advocate a pragmatic approach, similar to that described by Raine *et al.*⁵ In developing this guideline, we successfully used the following five steps: (1) development of a questionnaire; (2) creation of a multiprofessional regional guideline development group; (3) extensive regional consultation; (4) dissemination and implementation; (5) audit and follow up.

QUESTIONNAIRE DEVELOPMENT

Between January and March 2003, we collected as much information as possible on how staff at all 12 hospitals stabilise the newborn infant before transport. The problem immediately perceived was the lack of agreed standards for many aspects of routine care. An extensive electronic search using the terms "infant", "newborn", "transport", and "stabilisation" revealed few useful references on this topic, when questioning the Cochrane database of systematic reviews (4th Quarter, 2004), Medline (1966–present), and Embase (1980–2004) via Ovid. Our initial "stock take" of neonatal stabilisation practice was therefore based on a questionnaire tailored around the ABCDE (airway, breathing, circulation, drugs, environment) method of resuscitation and stabilisation promoted by the Resuscitation Council (UK).⁶ We asked questions about methods of intubation, which fluids to

use, how many intravenous lines should be available, which sedation drugs are commonly used, etc. We sent out 60 questionnaires and received 45 answers.

CREATION OF A REGIONAL GUIDELINE DEVELOPMENT GROUP

The next step was to create a multidisciplinary "guideline development group" with a geographically balanced representation, with optimal presence of all disciplines (doctors, nurses, ward managers), and with a facilitative group leader.^{5,7} During the months March and April 2003, a group of 15 people convened three times for a half day meeting. This represents a total of 180 hours spent towards meetings, plus some extra time for out of meeting work. The number 15 was based on research that suggests that large numbers can cause coordination problems and a smaller group could result in diminished reliability.⁸ The aim of the group was to appraise and integrate peer reviewed research—that is, literature review—clinical expertise, and parental experience.

A key defining attribute of clinical guidelines is that they must be based on evidence. Paradoxically, however, there are still relatively few neonatal stabilisation interventions that have a sound research base on which to develop recommendations.⁹ However, there is increasing awareness that pragmatic clinical guidelines that are to be used in a complex clinical situation cannot always be based on research evidence alone. This may be because of a lack of primary research evidence or because of the complexity of the clinical question. Neonatal transport is just such a complex situation, where the gestation, age, diagnosis, and therapeutic interventions needed may be completely variable from one transport episode to the next. In this situation, consensus statements by experts, or a hybrid methodology using consensus and evidence based medicine, may need to be adopted.⁵ This is particularly applicable to a managed network, where established practices may be quite different across different organisations, partly because of a paucity of good evidence on which to base practice. Hence, as there are no standards available for many aspects of routine care, any guideline will always incorporate some element of "proven best care". The guideline development group felt that consensus of clinical experts was important, as guidelines formulated on facilitated open discussion are unlikely to formalise unsound practice; rather, by making practice explicit, they bring about improvement.

REGIONAL CONSULTATION

The next six months (May–October 2003) consisted of extensive regional consultation, aiming to maximise network ownership, a critical factor in enabling the adoption of new guidelines. We hereto widely disseminated draft recommendations through mail and email. Valuable external feedback was also obtained through two multidisciplinary regional transport meetings at which the draft guideline was presented and discussed, which resulted in a consensus view being reached.

DISSEMINATION AND IMPLEMENTATION

The fourth step was to ensure that all people providing neonatal care within our network accepted, implemented, and adhered to the guideline. Tools to achieve this were (a) dissemination of the guideline in a coloured booklet format and as posters and online access (see website), and (b) an outreach, interprofessional educational programme, providing active educational intervention on-site, which was focused on attitudes and skill development. The guideline was then officially launched in November 2003.

AUDIT AND FOLLOW UP

Evaluating the effectiveness of our implementation strategy was the final important component. Retrospective analysis of all referral patterns since the implementation of the guideline indicates that staff at local hospitals perform adequate clinical assessments and appropriately refer to tertiary centres.

Secondly, as a measure of standard of care during stabilisation, we investigated one variable from our standard minimum dataset for neonatal transports—that is, the time spent at the referring hospital. We compared a dataset comprising three months of acute—that is, ventilated—transports undertaken before the development of the guideline (April–June 2003; $n = 33$) versus a dataset comprising three months of acute transports undertaken six months after the launch of the guideline (April–June 2004; $n = 41$). Analysis by t test shows a trend towards reduced time spent at the local hospital, although not significant (median one hour 15 minutes in 2003 versus median one hour two minutes in 2004, $p = 0.47$). We recognise the fact that the time spent at a local hospital depends as much on the severity of illness of the infant as on the local competencies in dealing with unstable infants.

Thirdly, a satisfaction audit was performed six months after implementation. Responders indicated that the guideline is particularly highly valued because of: (a) a reduction in clinical risk, as staff in local hospitals have become more proficient in the initial management of sick newborn

infants because of the availability of guidance and educational sessions; (b) improved efficiency of the transport process, with significantly reduced turnaround times; (c) a reduced effect of newborn transport on patient and family; (d) improved region-wide links within the neonatal service. Finally, it is imperative that one prevents guidelines from remaining in the coat pockets of staff, gathering dust.¹⁰ Therefore we used (and still use) the following mechanisms to prevent staff from reverting to old routines: (a) continuous education through hospital visits by nurse facilitators/educators; (b) the transport team members themselves constantly observe local practice and remind people of correct stabilisation procedures; (c) in view of the high turnover of, particularly, the junior medical staff, we continue to ensure the regular dissemination of flyers to simply remind staff of the existence of the guideline.

DISCUSSION

In summary, this five step approach aims to pragmatically combine the best of scientific evidence and collective knowledge within the field of neonatal care during stabilisation. Whether the same methodology will be appropriate for all future network guidelines and how this guideline compares with other stabilisation guidelines is not yet clear. Meanwhile, team care together with a planned approach are far better than unplanned care.⁹ Furthermore, limiting the development of regional guidelines to only those areas where there is a sufficient research base is likely to reduce the possibility of improving quality of care for areas that do not easily lend themselves to randomised controlled trials, such as neonatal transport. Also, our guideline will need further review against the good practice statement (British Association of Perinatal Medicine), which is in preparation.¹¹

Barriers to implementing a regional guideline relate to organisational (local workload, structural arrangements) and competency based issues. Ultimately, clinical guidelines are produced to improve quality in health care, but the impact guidelines have on clinical practice is largely dependent on how well they are publicised before, during, and after implementation.¹² Continuous support is therefore paramount, such as the provision of continuous induction for doctors in training, hospital visits by nurse educators, who spend energy on improving skills and actual behaviour rather than on improving knowledge.¹³

We believe that the successful implementation of a regional guideline needs the following ingredients. Firstly, one must use a simple framework of, for example five steps, with the key to success in every chronological step being robust

team work. Secondly, the guideline must leave sufficient room for an individualised nature of the doctor-patient interaction; some individual freedom may be sacrificed for the benefits of team working, but that sacrifice is small. Thirdly, the guideline must not “stifle innovation”, but must provide a framework that allows measurement of the effect on outcome. Finally, the whole process must be time efficient and financially low cost.

We strongly encourage emerging neonatal networks to start developing similar regional guidelines, as this was a worthwhile and stimulating exercise. Success elsewhere will equally depend on a constructive dialogue, improved understanding, the maturity to live with differing points of view, and a commitment from networks to help individual units with resources and protected time.

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