British Association of Perinatal Medicine

Bliss

Neonatal Service Quality Indicators

Standards relating to Structures and Processes supporting Quality and Patient Safety in Neonatal Services

June 2017

Membership of Quality Steering Group

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Summary

- These Neonatal Service Quality Indicators define the features of a high quality neonatal service.
- As Service Quality Indicators, they relate to the structure and delivery of services and as such are different from Clinical Quality Indicators which relate to the quality of care of individual patients.
- It is recommended that neonatal services, with the support of their provider organization:
    1) Review themselves against these professional standards and publish information about their current status and future plans in an Annual Report. To make this process easier, each Quality Indicator is accompanied by a number of specific Quality Measures.
    2) Use these Service Quality Indicators as a basis for Quality Improvement, publishing their plans for this in an annual Quality Strategy.
- Parents and commissioners should expect to have access to information about the performance of neonatal services against the standards described in this document.

Introduction

Background

Several national Neonatal Quality Standards have been published in the UK in recent years, which aim to describe the structures and processes inherent in a high quality neonatal service. These have included the *BAPM Service Standards for Hospitals Providing Neonatal Care* (1), the *Neonatal Toolkit* (2), the *Neonatal Service Specification* (from the Neonatal Critical Care Clinical Reference Group of NHS England) (3), the *NICE Standards for Specialist Neonatal Care* (4), *Neonatal Care in Scotland: A Quality Framework* (5), the *All Wales Neonatal Standards* (6) and the Bliss Baby Charter (7).

There is increasing interest in the use of continuous quality improvement (CQI) in healthcare. CQI is an approach to quality assurance which focuses on organisations and their systems, and is based on the idea that there is opportunity for improvement in every process. The above standards, whilst they cover many aspects of service structure and delivery, do not address the increasingly recognized importance of structures and processes specific to continuous quality improvement (8). It can be difficult to embed continuous quality improvement in everyday practice, and this may be partly because of the difficulty in defining what makes it work (9). The Institute for Healthcare Improvement has recently published one of the few attempts to describe in detail the characteristics of a high quality healthcare organisation (10).

The BAPM Minimum dataset (1997, reviewed 2004) was developed to help neonatal services report their “workload, activity and resources” in an Annual Report, with the potential for this dataset to be used for “national monitoring of the delivery of neonatal intensive care services”. It was defined at a time prior to the universal use of the Badger Electronic Patient Record (EPR) and the National Neonatal Dataset which have effectively made the BAPM dataset redundant. In addition, the concept of Quality and Patient Safety as part of the fabric of healthcare has developed considerably in the past few years. The original Annual Report template did not include any measures of service performance, which were controversial at the time but are increasingly of interest to all stakeholders in neonatal care.

What is the purpose of these Service Quality Indicators?

The Neonatal Service Quality Indicators (NSQI) are an attempt to define the features of a high quality neonatal service. There are important long term impacts of early life experience, and neonatal professionals feel passionately about optimising the quality of neonatal care so as to deliver the best outcomes for babies and their families. The most specialised aspects of this care are of low volume (affecting a small proportion of the population) but are demanding of resource (human, technological and economic), and it is thus appropriate that they are subject to scrutiny of quality. The neonatal specialty in the UK is in the unparalleled situation of using a single electronic patient record and having a mature benchmarking process. As data describing neonatal care are increasingly available to health professionals, commissioners and the lay public, the challenge is to use the signals in these data to inform work to improve care.

The intention is that these professionally agreed Quality Indicators will be used by individual neonatal services as standards to work towards with support from Trust or Health Board managers and networks and by commissioners in England as the basis for negotiating a contract for providing neonatal services. It is hoped that they will also be referred to by professional, regulating and government bodies reviewing neonatal services in the future, and looked at by parents to enable them to understand the service that is being provided for their baby. Thus, the Service Quality Indicators in this document strive to be (a) clear (b) specific (c) easily measurable without excessive burden of extra data collection and (d) transparent in their implications to all the above

stakeholders. They relate to service structure and delivery, and are thus different from Clinical Quality Indicators (usually at individual patient level) which relate to the quality of care of individual patients. Whilst structure and process measures give limited insight on their own into the quality of neonatal care, we believe such professional service standards provide an important starting point for Quality Improvement work to improve patient and family outcomes.

These Neonatal Service Quality Indicators are based on professional consensus about what defines a high quality neonatal service, and they aim to prompt voluntary self-review by neonatal services and to stimulate a move towards making quality the main driver for future development. The document does not aim to stigmatise units or to be a template for regulation.

How should the Service Quality Indicators be used?

Neonatal Units: These Service Quality Indicators are primarily intended as an aid to neonatal units, who can review themselves against their performance using the accompanying Quality Checklist to allow them to define improvement priorities in a Quality Strategy, and produce an outward-facing Annual Report using the Annual Report template.

Networks: Networks can use unit Annual Reports to review network level Quality Indicators and to oversee the performance of their units in order to assess and improve network patient pathways.

Parents: Parents should expect to have ready access to information on how their unit/network performs and is working towards fulfilling these Service Quality Indicators.

Commissioners: It is recommended that performance of neonatal services against these Service Quality Indicators, or a record of work towards attaining them, directly informs the commissioning process.

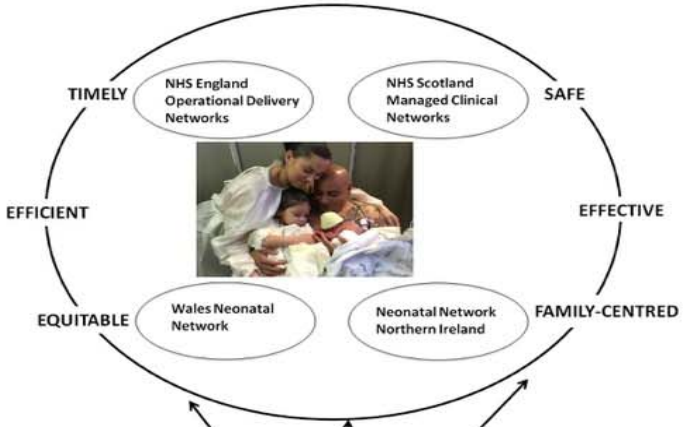
Benchmarking: We would encourage organisations responsible for benchmarking to consider publishing comparative data on some of the measures described here to enable transparency and impetus for improvement.

High Quality Neonatal Care in the UK

How do we achieve it?

BAPM Neonatal Service Quality Indicators (NSQI)

- Evidence-based care
- Team working and collaboration
- Family as partners in care
- Benchmarking
- Patient Safety
- Quality Improvement
- Training
- Research



NHS Improvement

Continuous Quality Improvement

Scottish Patient Safety Programme

Health professionals

Parents and carers

The NSQI Quality Report

Other Standards

- *BAPM Service Standards for Hospitals Providing Neonatal Care 2010*
- *BAPM Categories of Care 2011*
- *BAPM Optimal Arrangements for NICUs 2014*
- *NICE guidelines*
- *DoH Toolkit for high quality neonatal services 2009*
- *NHS Improvement publications*
- *NICE Quality Standard for Specialist Neonatal Care 2010*
- *Neonatal Care in Scotland: A Quality Framework 2013*
- *All Wales Neonatal Standards 2013*

The Service Quality Indicators

The Neonatal Service Quality Indicators presented here relate to the six domains of Quality defined by the Institute for Healthcare Improvement (10), namely Effectiveness, Safety, Patient (Family) experience, Efficiency, Timeliness and Equity. The Bliss Baby Charter (7) has defined elements of a neonatal service relating to Family Experience in more detail.

We have ordered the current Quality Indicators under headings signifying facets of the working of a neonatal service, grouped under broader subject headings, to make self-assessment and improvement planning easier for units.

EVIDENCE-BASED CARE

Evidence-based practice aims to provide the most effective care available for babies, and the best use of limited health resources (11).

NSQI 1 Care Guidelines supported by Audit

Quality Indicator

All neonatal units should have a set of readily accessible evidence-based guidelines relevant to all commonly-encountered clinical conditions and interventions seen in their practice. They should also have a rolling programme of guideline development and review informed by regular audit, aligned with the unit's quality improvement strategy.

Rationale

Having up to date, easily accessible guidelines is an integral part of an effective clinical service, particularly in the context of shift working, and a large number of relatively inexperienced and often non-permanent staff delivering care. There is some evidence that structures and processes of care and some outcomes can be improved with the use of evidence-based guidelines (12)(13).

Quality Measures

1. **A unit lead for guidelines and audit**

   Guidance on best practice: Units should have a lead for guidelines and audit with time commitment in their job plan appropriate to the size of the service.

   Oversight: Unit

2. **Neonatal-specific guidelines for common conditions and interventions (see list in Appendix)**

   Guidance on best practice: Guidelines should be neonatal-specific, multi-professional and where appropriate multidisciplinary and written following the RCPCH Standards for Clinical Guidelines.

   Oversight: Unit

3. **Shared guidelines across a network**

   Guidance on best practice: Clinical guidelines should be shared across a network, except where they need to reflect the details of a local service.

   Oversight: Network

4. **Clinical guidelines up to date**

   Guidance on best practice: Guidelines should be reviewed at multi-professional guideline meetings to which all relevant professional groups and parent representatives are invited.

   Each guideline should be reviewed at least every 3 years.

   Oversight: Unit

Quality Measures (contd.)

5. **A rolling programme of audit of practice and a mechanism for acting on results**

   Guidance on best practice: There should be continuous audit of care and of compliance with guidelines, and a clear record kept of the process and findings. Any shortfall in practice identified should be followed up with action and further audit carried out in a timely way.

   Oversight: Unit

Best practice (general)

Data relating to local audit should be displayed so that they can be viewed and understood by both parents and staff. All trainees should be directly involved in the clinical audit process and in the development of clinical guidelines.

TEAM WORKING AND COMMUNICATION

There is considerable evidence that team working within organisations leads to an improvement in productivity, both in quantity and quality (14).

NSQI 2 Team Communication

Quality Indicator

Neonatal services should have mechanisms of team communication in place to support patient safety.

Rationale

Neonatal staff work in a stressful environment and effective team working is key to delivering high quality care. Effective communication of threats to patient safety is an increasing challenge in the shift-based workplace, and a number of tools have been used to address this. Pre-task Safety Briefings in healthcare, also termed “pauses” or “huddles”, started in surgical settings. Morning briefings have been used to alert staff to current issues related to patient safety, and to help reinforce a team culture. Healthcare professionals have started to realise the importance of the quality of communication during patient handover. The WHO has made “Communication during patient handovers” one of its five patient safety initiatives (15) . Personnel in a team not feeling able to act outside a perceived hierarchy, particularly in acute situations, may lead to preventable harm (16). Debrief of the team involved in major incidents provides an opportunity to defuse stress, learn from team experiences and develop strategies for future events (17)(18).

Quality Measures

1. **Nursing and medical safety briefings**

   Guidance on best practice: Neonatal units should have a process at every handover for sharing safety issues with all medical and nursing staff in the form of a verbal group briefing, ideally with medical and nursing staff (and where necessary other staff) together.

   Oversight: Unit

2. **Structured handover**

   Guidance on best practice: Nursing and medical handover should be delivered in a structured format (such as SBAR).

   Oversight: Unit

Quality Measures (contd.)

3. **Mechanism for Team debrief following deaths and serious adverse events**

   Guidance on best practice: All members of staff involved should be given the chance of a debrief following a death or serious adverse event. This should allow discussion of emotional responses and team working.

   Oversight: Unit

4. **Escalation pathways and training**

   Guidance on best practice: There should be escalation pathways readily accessible to all staff, and training in escalation including a strategy for speaking up in emergency situations.

   Oversight: Unit

Best practice (general)

The elements of team communication in this Quality Indicator should form part of the assessment of training progress for paediatric trainees and appraisal for consultants.

NSQI 3 Staff Safety Culture

Quality Indicator

Neonatal services should regularly engage with staff about their experience in the workplace, and particularly the way in which it relates to patient safety.

Rationale

Assessing the Safety Culture of an organisation is considered a leading indicator of practice in relation to safety (as opposed to lagging indicators such as retrospective chart review) and many different tools have been developed to survey this (19). Interactive learning boards can help build shared values within a team by enabling clinical leaders to share organisational priorities and challenges and staff to feed back problems they face (20).

Quality Measures

1. **Regular Safety Culture Survey**

   Guidance on best practice: Safety Culture Surveys should be conducted at least every two years using a validated questionnaire, with feedback to staff.

   Oversight: Unit

2. **Action plan in response to last Safety Culture Survey**

   Guidance on best practice: There should be an action plan produced in response to each Safety Culture Survey which is followed through in a timely way.

   Oversight: Unit

3. **Interactive learning board or equivalent**

   Guidance on best practice: All neonatal units should have a mechanism such as a learning board for clinical leaders to learn about and respond to problems faced by staff and for staff to learn about the priorities of the service, what is going well and what is not.

   Oversight: Unit

NSQI 4 Pathways of Care and Referral for high risk babies

Quality Indicator

Networks should have oversight of the appropriateness of the care pathways for high risk babies, in particular those that involve in-utero and ex-utero transfers.

Rationale

There is good evidence that high risk babies have better outcomes when cared for in a neonatal unit of an appropriate level (2) (5).

Quality Measures

1. **Network guideline on care pathways for high risk pregnancies and babies**

   Guidance on best practice: There should be network guidelines on optimal location of delivery, neonatal care and referral and transfer for preterm babies born at different gestations of 23 weeks and above, babies with suspected perinatal hypoxia-ischaemia, babies with congenital abnormalities and other babies requiring specialist input.

   There should be guidelines shared with obstetrics about the approach to intra-uterine transfer of high risk pregnancies.

   Parents whose babies have to be transferred for care should be given written information about the transfer process and the unit to which their baby will be transferred. This should include information about the likely duration of the transfer, the hospital and ward to which the baby is being transferred, the name of the accepting consultant, and information about the receiving unit (see family experience). There should be a discussion with the parents about whether they can travel with the baby or alternatively, arrangements to meet them on arrival.

   Oversight: Network

2. **Care pathway exception reporting**

   Guidance on best practice: Networks should produce an annual exception report with a description of the plan to address exceptions to the appropriate pathway.

   Oversight: Network

NSQI 5 Collaborative multidisciplinary care for babies with complex conditions

Quality Indicator

There should be ready access to specialist input for babies with complex conditions, and planning and delivery of care should be shared by all relevant specialists.

Rationale

It is important that babies with complex conditions have their care supervised by the relevant specialists, and that parents have the opportunity to discuss their baby's care with them. This should not be affected by geography or local politics. An NHS England review of neonatal surgical services has described what is considered best practice in this area (21).

Quality Measures

1. **Network level guidelines on best practice in multidisciplinary care of complex babies, including the approach to planning of transfer and discharge**

   Guidance on best practice: There should be network guidelines covering pathways of referral, the approach to shared care when needed, and discharge planning.

   Oversight: Network

Quality Measures (contd.)

2. **Availability of specialist neonatal cover for 24 hours of the day in neonatal surgical units**

   Guidance on best practice: Neonatal surgical units, whether co-located with a NICU or not, should have round the clock specialist neonatal cover at the same level as specified for neonatal services.

   Oversight: Network

3. **Neonatal surgical unit compliance with the neonatal standards and guidelines of the local neonatal network**

   Guidance on best practice: Neonatal surgical units, whether co-located with a NICU or not, should deliver care compliant with the clinical guidelines of the local neonatal network.

   Oversight: Network

4. **24/7 availability of transport service between a neonatal surgical unit and NICU when they are not co-located**

   Guidance on best practice: There should be round the clock availability of a neonatal transfer service between neonatal surgical units and the regional NICU when they are not co-located.

   Oversight: Network

5. **Action plan for co-location of neonatal surgical units**

   Guidance on best practice: There should be an action plan for co-location of neonatal surgical units which are not on the same site as a NICU within 5 years.

6. **Arrangements for specialist advice and on-site review for complex babies on neonatal units**

   Guidance on best practice: There should be timely access to specialist advice and review for complex babies on neonatal units.

   Oversight: Network

7. **Multidisciplinary rounds or meetings including neonatal team and paediatric specialists**

   Guidance on best practice: In units caring for babies with complex conditions, there should be opportunities for the specialty teams commonly involved (including neonatology, surgery, neurology and gastroenterology) to discuss cases and learn in a multidisciplinary context other than at the time of clinical referral.

   Oversight: Network

8. **Local guidelines on multi-professional and multidisciplinary perinatal palliative care**

   Guidance on best practice: There should be a locally agreed multi-professional (including medical, nursing and where relevant hospice staff) and multidisciplinary (including where relevant maternity, neonatal, psychological and community services) approach to palliative care planning and delivery, with clear guidance available for staff. The approach should be based on the BAPM Framework for practice (30). (refer to the new Together for Short Lives Pathway)
   http://www.togetherforshortlives.org.uk/www_togetherforshortlives_org_uk/perinatalpathway

Oversight: Unit and Network

Best practice (general)

When a baby with a complex condition is ready for discharge or requires non-emergency transfer between a neonatal unit and another ward or hospital, there should be multidisciplinary planning.

The parents of babies requiring multidisciplinary planning of care should be able to speak directly and without undue delay with any specialists involved.

FAMILY PARTNERSHIP IN CARE

Understanding the needs of the family and supporting them during their time in the neonatal unit is an important part of delivering a neonatal service. This will require units to engage closely with parents as part of the care team and will involve applying the principles set out in the DH Toolkit (2009), Scottish Quality Framework and the Welsh Neonatal Quality Standards, POPPY Report (2009) and Bliss Baby Charter (7). It is recommended that units undertake accreditation with the Bliss Baby Charter.

NSQI 6 Family facilities

Quality Indicator

Neonatal units should provide family facilities to reduce the stress and financial burden on families visiting their baby.

Rationale

Fulfilling the parental role for a baby admitted to a neonatal unit is challenging because of (a) the simultaneous major life events of childbirth and health problems in their baby (b) the difficulty of dealing at the same time with other family responsibilities such as work and other children (c) travel needs when babies are cared for far from home (d) the prolonged stay of a baby.

Quality Measures

1. **Adequate parent facilities or a plan to address any shortfall**

   Guidance on best practice: All neonatal units should have family facilities as shown below (2), and where there is a shortfall units should have a clear plan to address these. The Bliss Baby Charter will assist you with this.

   - 24 hour access to nutritious food and drink without charge for the resident carer, and ideally for both parents
   - clean and adequate kitchen facilities with provision to prepare hot meals and drinks
   - access to an overnight bed for the partner to stay by the cot-side with the mother and baby, when appropriate
   - shower facilities for resident parents and appropriate storage
   - areas for siblings to be kept occupied, with consideration given to providing periods of supervision
   - a family room that is comfortably furnished and provides access to relevant hospital and local support information
   - financial support, including free parking for partners
   - An information stand for parents to learn about their baby's condition, the neonatal service and local support.

   Oversight: Unit / Network

NSQI 7 Family involvement in care planning and delivery

Quality Indicator

Parents should be enabled to take an active part in the care of their baby and in decision-making about their baby's care.

Rationale

Parents can feel disconnected from their baby in a neonatal unit because of their baby`s condition and separation from them, the stark surroundings, the alienating effect of medical equipment, and their lack of understanding of neonatal medicine and the implications for their baby. This can be overcome, to some extent, by reducing barriers and making them feel more like partners in care.

Quality Measures

1. **Decisions about changes in care where parents may express a preference should always involve them**

   Guidance on best practice: An attempt should be made to understand the particular information needs of each set of parents. Every effort should be made to involve parents in decisions about changes in care for which they are likely to express a preference. The intended change in care should be explained in plain language, and the parents should be allowed to ask questions and express their point of view. The discussion should be recorded in the baby's notes. The parents should also be signposted to appropriate information resources, which can help them understand their baby's condition, e.g. www.bliss.org.uk.

   Oversight: Unit

2. **Parents should be invited to be present on consultant ward rounds**

   Guidance on best practice: Parents should be actively encouraged to attend consultant ward rounds whilst their own baby is being discussed to enable them to understand the care their baby is receiving and contribute to discussions.

   Oversight: Unit

3. **The informed consent of parents is taken and recorded where appropriate**

   Guidance on best practice: For specialist treatments and procedures, informed consent should be obtained by a member of the specialty team and recorded in the baby's case notes. For surgical procedures and some non-surgical treatments (which are specific to a centre), a signed consent form should be completed and retained. Units should have a clear policy on the requirements for consent.

   Oversight: Unit

4. **Parents are encouraged and supported in taking part in their baby's care**

   Guidance on best practice: Every parent (including fathers) should be taught how to carry out basic care for their baby, and encouraged and supported in doing this. They should be encouraged to increase in their involvement in providing care during their baby's stay.

   Oversight: Unit

5. **Organised and consistent support for breast milk expression and breastfeeding**

   Guidance on best practice: There should be structures and processes in place for providing support to mothers to express breast milk and to breast feed their baby. These should be in line with either the UNICEF Baby Friendly Initiative standards for neonatal units (29) or the Bliss Baby Charter (7).

   Oversight: Unit

NSQI 8 Parent Information

Quality Indicator

Information should be provided for all parents of babies in a neonatal unit, describing the function and staffing of the unit and about common neonatal conditions and treatments.

Rationale

Neonatal care can be disempowering for families. Provision of basic information about the service, the staff involved, access and family facilities and the role of the parents can help minimise this.

Quality Measures

1. **Offer of antenatal visit to unit when admission is anticipated during pregnancy**

   Guidance on best practice: When admission to a neonatal unit soon after birth is anticipated during pregnancy, prospective parents should be given the offer of an antenatal visit to the neonatal unit.

   Oversight: Unit

2. **A "Welcome Pack" of information for parents of babies admitted to a neonatal unit**

   Guidance on best practice: All neonatal units should provide parents with a minimum of information in a "Welcome Pack" within 24 hours of their baby's admission. This should include information about:

   - the service offered
   - local unit information including
     - Accommodation
     - Parking
     - Public transport
     - Food for families
   - financial help
   - welfare and support
   - information about other services across the network
   - breastfeeding/expressing
   - hand-washing and infection control
   - How to be involved in your baby's daily cares

   Oversight: Unit

3. **"Meet the Staff" board with up to date staff photographs and an explanation of staff roles and dress code**

   Guidance on best practice: Neonatal units should have a "Meet the Staff" board with up to date photographs of individual staff members and an explanation of staff roles and dress code.

   Oversight: Unit

4. **Organised and sensitive approach to giving difficult news and to bereavement**

   Guidance on best practice: There should be appropriate facilities and a sensitive approach to giving difficult or bad news and dealing with bereavement. This should be in line with the Bliss Baby Charter (7).

   Oversight: Unit

5. **Early first communication from senior team member**

   Guidance on best practice: (This is benchmarked by the National Neonatal Audit Programme). There should be a documented consultation with parents by a senior member of the neonatal team within 24 hours of admission (this should be a consultant or second tier medical trainee, or a nurse practitioner operating in such a role).

   Oversight: Unit

Quality Measures (contd.)

6. **Information accessible to families with communication difficulties**

   Guidance on best practice: Written information for parents should be available in all languages commonly used in the population served. An interpretation service should be available round the clock, and used whenever information needs to be conveyed in medical or nursing contexts when any parent has difficulty communicating in English. When parents have communication difficulties because of neurosensory or learning problems, appropriate specialist help should be sought.

   Oversight: Unit

NSQI 9 Parent feedback

Quality Indicator

Networks should work to create surveys about the experience of parents drawing, for instance, on the National Parent Survey questions 2010 and 2014 conducted by Picker Institute (22). Neonatal units should use feedback from parents to inform quality improvement. For examples of these, refer to the Bliss Baby Charter best practice bank.

Rationale

Parents have a unique perspective on the care of their baby, and knowing about their experience and how it could be improved should form part of any review of quality of care.

Quality Measures

1. **A survey of parents conducted within the past 2 years**

   Guidance on best practice: A unit survey of parents' experience of care should be carried out at least every 2 years.

   Oversight: Unit

2. **An accessible mechanism for anonymous comments from parents**

   Guidance on best practice: There should be a mechanism in every unit, accessible to all parents, to enable them to provide anonymous comments and feedback at any time.

   Oversight: Unit

3. **A Communication Board with up to date information about the unit response to individual items of parent feedback**

   Guidance on best practice: All neonatal units should inform parents of what they have done in response to feedback in the form of a "You said, we did" Communication Board.

   Oversight: Unit

4. **A network parent advisory group**

   Guidance on best practice: All neonatal networks should have a parent advisory group which provides oversight of family considerations in the network.

   Oversight: Network

Guidance on Best practice (general)

Networks should work to create surveys about the experience of parents drawing, for instance, on the National Parent Survey questions 2010 and 2014 conducted by the Picker Institute (21). Neonatal units should use feedback from parents to inform quality improvement.

NSQI 10 Parent involvement in service development

Quality Indicator

Neonatal units and networks should have systems in place to involve parents in clinical and service developments aimed at improving the service.

Rationale

Parents, with their unique perspective on the care provided by neonatal units, can play a useful role in informing the process of quality improvement and service developments as a whole.

Quality Measures

1. **Parent involvement in developments aimed at improving service delivery**

   Guidance on best practice: There should be a process in every neonatal unit to involve parents in planning services, and in service developments including Quality Improvement.

   Oversight: Unit and Network

BENCHMARKING

Benchmarking is an important way that neonatal services can assess themselves against national and international standards (23).

NSQI 11 Other Neonatal Service Standards

Service Standards already exist in relation to the organization of neonatal services and optimal staffing. Adherence to these is essential to a neonatal service in delivering good outcomes.

- Service Standards for Hospitals providing Neonatal Care 2010 (1)
- Optimal Arrangements for Neonatal Intensive Care Units in the UK including guidance on their Medical Staffing 2014 (24)
- Neonatal Toolkit 2009 (2)
- Service Specification for Neonatal Critical Care 2012 (3)
- NICE Standards for Neonatal Specialist Care 2010 (for England) (4)
- Neonatal Care in Scotland: A Quality Framework 2013 (for Scotland) (5)
- All Wales Neonatal Standards 2013 (for Wales) (6)
- The Bliss Baby Charter (7)

Quality Indicator

Units and networks should be able to demonstrate that they fulfil the Service Standards laid out in the following documents, or be able to show how they are working towards them.

Rationale

These are basic standards relating to the provision of neonatal care, agreed to by professionals and by the governments of the UK nations.

Quality Measures

1. **Unit's performance reviewed against existing neonatal service standards**

   Guidance on best practice: Each unit should produce a summary of information relating to Service Standards in their Annual Report (see separate document "Annual Report Template").

   Oversight: Unit

Quality Measures (contd.)

2. **A plan to rectify shortfalls against service standards**

   Guidance on best practice: Each unit should have an annually documented plan to rectify any shortfalls against Service Standards.

   Oversight: Unit

3. **Regular review of contract for providing neonatal services with commissioners or equivalent**

   Guidance on best practice: Each network should have at least annual discussion of the contract for provision of neonatal services with commissioners or with the equivalent in the devolved nations, and this should include a plan for remedying any shortfall.

   Oversight: Network

4. **Services which need to be commissioned with a neonatal service**

   *Best practice***:** The following should be commissioned as part of the neonatal service:

   - Transfer services
   - Maternity bed and neonatal cot location services
   - Family-centred care, including psychological support for mothers and families
   - Follow-up services, including structured neurodevelopmental assessment of at-risk groups
   - Allied health professional support during and following neonatal care.

   Oversight: Network

5. **Babies <27 weeks gestation delivered on same site as NICU**

   Best practice: (This is benchmarked by the National Neonatal Audit Programme). Babies born at less than 27 weeks gestation should, where possible, be delivered in a maternity service on the same site as a network-designated NICU.

Oversight: Network

NSQI 12 Engagement in National and International Audit and Benchmarking

Quality Indicator

There are now rigorous processes for UK-wide neonatal audit and benchmarking, as well as international systems for this. All neonatal services should actively engage in the UK national processes and have systems in place to continuously review their performance for the relevant measures.

Rationale

Healthcare benchmarking, when linked to collaborative quality improvement initiatives, has the potential to add an extra dimension to approaches to improving care, as has been shown with the Vermont Oxford Network (17)(18).

Quality Measures

1. **Unit lead clinician for national audits**

   *Guidance on best practice***:** Neonatal units should have a lead clinician for national audits with designated time in their job plans for this.

   *Oversight***:** Unit

Quality Measures (contd.)

2. **Involvement in all mandatory national benchmarking processes**

   *Guidance on best practice***:** All neonatal services should be part of NNAP (the National Neonatal Audit Programme) and MBRRACE-UK (Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK) and any other mandatory national benchmarking processes.

   *Oversight***:** Unit

3. **Action plan to address outlier status**

   *Guidance on best practice***:** Units and networks should have documented evidence of action plan to address outlier status within 3 months of identification.

   *Oversight***:** Unit and Network

PATIENT SAFETY

NSQI 13 Adverse Event Review

Quality Indicator

Neonatal services should have a formalised approach for systematic review of every adverse event with selected escalation to serious adverse event review.

Rationale

The Francis inquiry highlighted the need for a patient-centred culture with collection, reporting and analysis of patient safety information (21). International reviews of patient records suggest that between 4 and 17% of hospital admissions are associated with an adverse event. A review in two London hospitals showed an overall incidence of adverse events in hospitalised patients of 10.8%, with half of these judged preventable, and one third leading to moderate-severe disability or death (22). There are many barriers to reporting adverse events including fear of the consequences and a well-founded lack of belief that reporting will lead to improvement (23).

Quality Measures

1. **Unit guidance on adverse event reporting, including triggers for reporting**

   Guidance on best practice: There should be clear guidance for staff on the approach to reporting of adverse events, and a list of potential triggers for reporting.

   Oversight: Unit

2. **Multi-professional adverse event review meetings**

   Guidance on best practice: There should be multi-professional meetings at least once a month to review adverse events, including senior and junior medical and nursing staff.

   Oversight: Unit

3. **Timely review of, and response to, adverse events**

   Guidance on best practice: Adverse events should be reviewed and any actions carried out within 1 month of reporting.

   Oversight: Unit

NSQI 14 Death and Serious Adverse Event Review

Quality Indicator

Neonatal services should have a formalised approach for systematic review of every perinatal death with selected escalation to serious adverse event review.

Rationale

Local review of deaths in hospital and serious adverse events is accepted as best practice in the NHS. The Healthcare Quality Improvement Partnership (HQIP) has commissioned the development of a tool for the review of perinatal deaths on behalf of the NHS in England, Scotland and Wales (24), and this has been acknowledged as important in the NHS England Maternity Services Review (25) and the Scottish Child Death Review (25). The key purposes of such reviews include (a) the identification and local dissemination of learning, whether or not considered to be avoidable contributors to death (b) involvement of and feedback of the outcomes to the family.

The local death review process can be conducted in parallel with the mandatory Child Death Overview Panel (CDOP) review of child deaths in England, the equivalent national system in Wales, and those being developed in Scotland and Northern Ireland.

Quality Measures

1. **A unit Neonatal Mortality Lead**

   Guidance on best practice: There should be a neonatal mortality clinical lead responsible for recording details of all deaths both as a basis for local death review and the MBRRACE national audit.

   Oversight: Unit

2. **Regular multi-professional and multidisciplinary mortality reviews**

   Guidance on best practice: Mortality reviews should be carried out with involvement of the medical and nursing team and other specialties including pathologists and other hospitals involved in care where relevant, as specified in the Perinatal Mortality Review Tool.

   Oversight: Unit

3. **Timely review of neonatal deaths**

   Guidance on best practice: Mortality reviews should be carried out in a timely way following a baby's death, as specified in the Perinatal Mortality Review Tool (currently under development).

   Oversight: Unit

4. **Death reviews carried out to standards of Perinatal Mortality Review Tool**

   Guidance on best practice: Mortality reviews should be carried out to the standards of the Perinatal Mortality Review Tool.

   Oversight: Unit

5. **Criteria for Serious Adverse Event Review**

   Guidance on best practice: There should be clear criteria for initiating a Serious Adverse Event Review.

   Oversight: Unit

Quality Measures (contd.)

6. **Regular multi-professional and multidisciplinary Serious Adverse Event reviews**

   Guidance on best practice: All neonatal services should hold Serious Adverse Event Reviews with representation from all relevant professional groups and specialties and other units in which the baby has spent time.

   Oversight: Unit

7. **Serious Adverse Event Reviews follow guidance**

   Guidance on best practice: Serious Adverse Event Reviews should fulfil the requirements in the NSQI guidance.

   Oversight: Unit

8. **Reports of Serious Adverse Event and Mortality review shared with family**

   Guidance on best practice: Serious adverse events and deaths should result in reports which are shared with the patient's family.

   Oversight: Unit

QUALITY IMPROVEMENT

NSQI 15 Structure and Resources for Quality Improvement

Quality Indicator

Neonatal units should have Medical and Nursing Quality Leads and a multi-professional Quality Group which takes the role of developing, publicising and overseeing the unit's Quality Strategy.

Rationale

It is only by focussing work through Quality Leads and a Quality Group involving all professional groups can audit (quality assurance), incident review, guidelines of practice and improvement work be coordinated and a meaningful quality strategy be developed and implemented (15)(16).

Quality Measures

1. **A multi-professional unit Quality Team**

   Guidance on best practice: Each unit should have a Quality Team, which includes medical and nursing members and at least one parent representative, and meets at least 4 times per year to consider the unit's performance against these Quality Standards, considers all aspects of the unit's Quality and Patient Safety work, and produces an annual Quality Report. This group should seek input from other professionals, including pharmacists and microbiologists, when relevant.

   Oversight: Unit

2. **Unit Medical Lead for Quality**

   Guidance on best practice: Each unit should have a medical lead for Quality and Patient Safety who has dedicated time in their job plan for this role proportionate to the size of the unit.

   Oversight: Unit

3. **Unit Nursing Lead for Quality**

   Guidance on best practice: Each unit should have a nursing lead for Quality and Patient Safety who has dedicated time for this role proportionate to size of unit.

   Oversight: Unit

NSQI 16 Annual Quality Strategy and Quality Report

Quality Indicator

Units should publish a Quality Strategy and a section in the Unit Annual Report describing how the unit is performing against these Quality Standards and also describing their Quality and Patient Safety work.

Rationale

The unit Quality Strategy and Annual Report will provide a focus for improvement and allow local review of progress.

Quality Measures

1. **A current unit Quality Strategy**

   Guidance on best practice: Each unit should have a Quality Strategy published within the last year, outlining the Quality initiatives planned for the year ahead, and how these priorities relate to the Neonatal Service Quality Indicators. Parent representatives should be involved in the development of the Quality Strategy, and families should have access to the unit's Quality Strategy and Annual Quality Reports.

   Oversight: Unit

2. **A Quality Report for the last year**

   Guidance on best practice: Each unit should have a Quality Strategy published within the last year, outlining the Quality initiatives planned for the year ahead, and how these priorities relate to the Neonatal Service Quality Indicators.

   Oversight: Unit

3. **A unit QI Programme**

   Guidance on best practice: Each unit should have a programme of Quality Improvement linked to local audit, national and international benchmarking, adverse event review and parent feedback. All trainees should be involved in quality work linked to the unit's Quality Strategy, and should be given access to the Quality Report. There should be opportunities for nursing involvement in Quality work.

   Oversight: Unit

EDUCATION AND TRAINING

NSQI 17 Training for Quality and Patient Safety

Quality Indicator

Units should have a culture that supports training, with regular training opportunities for medical and nursing staff both at the bedside and in the classroom. Appropriate training in Quality and Patient Safety should be undertaken by all staff.

Rationale

A knowledgeable and up to date workforce will improve quality and reduce risks to patient safety. Health Education England recently commissioned Imperial College London to carry out research into the role of Education and Training in Patient Safety (26). Most of the evidence relating to the benefits of training in this area relate to simulation training, teamwork training and the use of social media in training. The positive effects found related mainly to changes in delegate reaction to training, their level of knowledge and their behaviour following the training, with little if any evidence of effect on patient safety. Other promising approaches include self-audit, morbidity and

mortality conferences, team-based learning, crew resource management (taken from the airline industry), and inter-professional education.

Quality Measures

1. **Quality and Patient Safety in induction of new medical and nursing staff**

   Guidance on best practice: New members of medical and nursing staff should have an introduction to the unit's quality and patient safety culture and goals within the first two weeks of starting in a neonatal service.

   Oversight: Unit

2. **Training for junior medical and nursing staff in Quality Improvement**

   Guidance on best practice: Paediatric trainees and neonatal nurses in training should receive teaching and training in Quality and Patient Safety.

   Oversight: Unit

3. **Training for consultants in Quality Improvement**

   Guidance on best practice: Consultants should have training in Quality and Patient Safety and Quality Improvement methodology sufficient to lead the Quality work of the unit.

   Oversight: Unit

NSQI 18 Engagement in Shared Learning about Quality of Care

Quality Indicator

Neonatal professionals should be involved in shared learning about Quality and Patient Safety, involving medical and nursing staff and all components of a clinical network.

Rationale

It is generally agreed that multi-professional shared learning involving within an organisation is important in order to ensure a common understanding and set of values (27).

Quality Measures

1. **Multi-professional meetings on Quality and Patient Safety**

   Guidance on best practice: Units should have meetings providing an opportunity for medical, nursing and other staff to learn together about Quality and Patient Safety. Multi-professional meetings may include critical incident meetings, mortality and morbidity and other case review, presentations of audit, guidelines and quality improvement projects.

   Oversight: Unit

2. **Network meetings on Quality and Patient Safety**

   Guidance on best practice: Networks should hold periodic meetings to allow staff to learn about Quality and Patient Safety, and share good practice.

   Oversight: Network

RESEARCH

NSQI 19 Engagement in Research

Quality Statement

All neonatal services should engage in research activities appropriate to their size and activity.

Rationale

Involvement in research by healthcare providers improves the delivery and scrutiny of care (19) and may improve the outcomes of healthcare, even when the patient receives a placebo (20). Parents also perceive units that have a significant research programme as being more dedicated to the clinical care of their baby.

Quality Measures

1. **A named unit research lead**

   Guidance on best practice: All neonatal units should have an identified research lead, who link with the Neonatal Clinical Studies Group and local research networks.

   Oversight: Unit

2. **Record of research activity and research strategy**

   Guidance on best practice: Neonatal units should make every effort to recruit babies into clinical research. They should record the number of research studies recruited to the number of babies recruited in the past year, and a plan for the future including plans to improve research involvement.

   Oversight: Unit

Guidance on best practice (general)

All staff recruiting babies to research and having consent discussions with families should be trained in Good Clinical Practice for research.

Appendix

Minimum set of guidelines

- Resuscitation of term infants
- Resuscitation and stabilisation of preterm infants
- Respiratory support in term and preterm infants
- Stabilisation and care for a baby requiring intensive care until transfer
- Fluid management
- Feeding management
- Breast feeding support
- Approach to antisepsis
- Management of jaundice
- Management of hypoxic ischaemic encephalopathy
- Management of seizures
- Management of suspected sepsis
- Management of common surgical problems
- Management of hypoglycaemia
- Management of the cyanosed baby
- Referral pathways
- Screening and (if relevant) treatment for retinopathy of prematurity
- Transfusion of blood products
- Management of the infant with hypoxic ischaemic encephalopathy
- Management of common congenital abnormalities
- Palliative care
- Analgesia and sedation
- Oxygen targeting and management
- Home oxygen pathway
- Follow up of high risk infants
- Indications, insertion and use of peripheral and central lines

Additional list for NICUs and LNUs (where appropriate)

- Retinopathy treatment
- Care of babies following surgery
- Parenteral nutrition
- Management of complex congenital malformations
- Management of persistent pulmonary hypertension of the newborn
- Indications and referral pathway for ECMO
- Management of a baby requiring ECMO

Guidance on Quality Indicators

1. Adverse Event Reporting

Specific Neonatal Triggers for Datix reporting

- Neonatal death
- HIE grade 2 or 3 in infants > 34 weeks' gestation
- Meconium aspiration syndrome (typical CXR changes and FiO2>30%)

- Undiagnosed congenital anomaly
- Birth injury
- Unplanned term admission requiring any ventilatory support or volume resuscitation
- Bilirubin at or over exchange level
- Hypothermia <36C (Not therapeutic hypothermia)
- Hypoglycaemia <1mmol/l or symptomatic hypoglycaemia < 2 mmol/l
- Failure to take cord bloods for ongoing neonatal care (does not include cord pH)
- Refusal of in utero or ex utero transfer due to capacity/staffing
- Overcapacity
- Unexpected readmission to the neonatal unit
- Baby abduction
- Abandoned baby
- Missed/delayed blood spot screening
- Missed/delayed retinopathy screening
- Administration of the wrong maternal breast milk

Generic Triggers for Datix reporting

- MRSA colonisation or infection
- Discharge against medical advice
- Staff shortage
- Drug administration error
- Drug prescription error
- Adverse drug reaction
- Incident resulting in harm to staff
- Incidence of violence/aggression to staff
- Equipment failure

2. Team debriefs

The debrief of teams following critical incidents is important to learn from team experiences and develop strategies for future events (refs 7 and 10 from reference below). The following evidence-based recommendations can be considered when establishing a process for conducting team debriefs (28).

1) The service and organisations should create a supportive learning environment for debriefs.
2) Team leaders should be knowledgeable about best practice in leading a debrief, including tone setting, goal setting, facilitation of discussion, and guidance of the team in the process of reflection and learning.
3) All members of the team should be knowledgeable about factors affecting team performance for optimal analysis of team behaviour.
4) The debrief should take place as close as possible in time to the event to improve memory and facilitate learning for future events.
5) Team members should feel at ease during the debrief and have equal voice.
6) There should be a focus on key performance issues, including errors and examples of excellence.
7) Key team working processes that were exhibited during the team performance should be described, including planning, situation assessment, supporting behaviour, communication and leadership/initiative.

8) Feedback should be supported with objective indicators of performance and both individual and team-orientated feedback should be given.
9) The focus should primarily be about how well the team was working together rather than necessarily how well the team achieved its overall objective.
10) The conclusions of the debrief and any action points should be recorded to facilitate feedback in future debriefs.

Hospital leaders: should set an example of open support and encourage a climate of learning. Hospital leaders should provide training for clinicians in leading debriefs and for all staff in understanding team working processes.

Networks: should support the practice of team debrief in all neonatal units and support sharing of key learning points across the network where relevant

Parents: should expect that after a serious episode in their child's care, a debrief will be conducted to support the staff who are providing ongoing care to their child, during which the clinical team will learn from reflection on their performance.

3. Guidance for other agencies

- Recommendation to Royal Colleges (RCPCH and RCN): Quality and Patient Safety should be an integral part of training in paediatrics at all stages, and in QIS training for neonatal nurses.
- Recommendation to GMC: All consultants should receive accreditation in Quality and Patient Safety and Leadership and annual appraisal should include review of Quality and Patient Safety work.

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