

TOOLKIT FOR HIGH-QUALITY NEONATAL SERVICES

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TOOLKIT FOR HIGH-QUALITY NEONATAL SERVICES

Acknowledgements

The Neonatal Taskforce would like to thank the Royal College of Obstetricians and Gynaecologists for its kind permission to reproduce within this document the format used in *Standards for Maternity Care* (2008) and some of the standards, which relate to the newborn.

Standards for Maternity Care is the report of a Working Party. It is an intercollegiate document by the Royal College of Obstetricians and Gynaecologists, the Royal College of Midwives, the Royal College of Anaesthetists and the Royal College of Paediatrics and Child Health. The report can be found at:

www.rcog.org.uk/womens-health/clinical-guidance/standards-maternity-care

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* These resources are also available on the accompanying CD together with a **nursing workforce calculator**.

Preface



The majority of babies in England are born healthy and go on to grow and thrive. But a proportion need additional support from birth in the form of specialist neonatal care in order to achieve this. We know that, while the demand for specialist neonatal care has increased by 9% in the last three years, improvements in healthcare during pregnancy, advancing technologies and the availability of better treatments have all led to a decrease in the number of babies who don't survive, an increase in the number who survive and a decrease in the number of ongoing problems for these babies.

The level of neonatal care a baby may need will vary from minimal intervention for a few minutes or hours through to considerable support over many weeks, months or even years. Effective, good-quality neonatal services are essential to ensuring that babies and their families who need additional help get the best care possible at the right time, in the right place and by a team of practitioners who are skilled and competent to care for the range of needs they may have.

In 2007 the National Audit Office (NAO) undertook a review of network arrangements and found that, although many services and networks were working well, there were concerns over the number of nurse vacancies, the variation in transfer arrangements around the country, and the lack of clear commissioning and financial arrangements in some units and networks.

The Department of Health (DH) asked the NHS to respond to the NAO's concerns by establishing a taskforce to agree a set of measures that should make a significant difference to the quality of neonatal services. The Neonatal Taskforce was established in 2008, made up of members from across the NHS and Bliss (the special care baby charity), and supported by DH. This document sets out the quality measures in the form of principles, which should guide commissioners, service users and teams working across maternity and neonatal services to drive improvements. The principles are presented within a best practice toolkit to encourage them to become embedded in future service development.

Babies needing the support of neonatal services are our most vulnerable and we need to work together with their families to ensure that services are as good as they can be, and that we have adequate resources and a competent, skilled workforce that is able to meet this worthy challenge.

A handwritten signature in black ink, appearing to read 'Ann Keen', written in a cursive style.

Professor Ann Keen MP

Parliamentary Under-Secretary of State for Health Services

Foreword



One of the measures of a civilised society is how well it cares for its most sick and vulnerable members. Nowhere is this tested more than in neonatal services and, in particular, in neonatal intensive care. This is where cutting-edge science, medical technology, ethics and compassion forge complex alliances. These have a direct and long-lasting impact – not only on the future of each vulnerable baby, but also on the lives of those who care for them.

Over the years, neonatal teams in England have made a significant contribution to the international body of knowledge, and babies from right across the world have benefited. The rate of advancement of science and technology, and increasing professional and public expectations mean that maintaining excellence requires continuous reappraisal of our services. Consequently, the 2007 NAO report, which highlighted regional and local variations in services offered, was both timely and helpful.

In response, we assembled a taskforce of experts responsible for delivering neonatal services in England. This included Bliss, the special care baby charity, which represents families that have experienced both the anguish and the joy of our neonatal services. Through funding and research, Bliss has made a distinctive contribution to service improvement in England.

The Neonatal Taskforce conducted its deliberations through front-line staff, families and relevant NHS organisations. Its report draws together the best evidence and expert consensus on how we can significantly and realistically further improve our neonatal services.

This toolkit outlines the Neonatal Taskforce's professional view of high-quality neonatal care. It clarifies the responsibilities of those delivering and commissioning neonatal services. It is supplemented by additional resources in the form of appendices to assist commissioners and providers in defining and measuring the quality of the service they offer.

The toolkit is designed to stimulate the action needed to improve services. However, these improvements will not happen immediately but will evolve over the next few years, as staff will need to be recruited and trained. It is for commissioners to decide how best to respond to this guidance in the light of their local service needs and resources, including the pace of implementation, though in most areas implementation may be possible within five years. Over the next few months, the Taskforce will continue providing support to commissioners and keep an overview of progress. In providing this support, it will be able to help commissioners identify how these quality improvements could be resourced in some significant part through efficiencies across the maternity and neonatal pathways. Our goal must be to harness innovation, to optimise the health of newborn babies, so minimising the demand for neonatal care and to ensure that all neonatal services operate as efficiently and effectively as they can. In this way, we can ensure that NHS staff, working with families and carers, can offer these children the best possible start in life.

A handwritten signature in black ink that reads "Bruce Keogh". The signature is written in a cursive style with a long horizontal line extending from the end of the name.

Professor Sir Bruce Keogh KBE
NHS Medical Director

Executive summary

1. Well-organised, effective and sensitive neonatal care can make a lifelong difference to premature and sick newborn babies and their families. Getting this early care right is the responsibility of the NHS at all levels.
2. A **Neonatal Taskforce** was set up by the NHS Chief Executive and chaired by the NHS Medical Director. One of its key objectives was to respond to the issues raised within the National Audit Office report *Caring for Vulnerable Babies: The reorganisation of neonatal services in England* (NAO, 2007).
3. The Taskforce was formed from a broad professional and managerial group with input from many stakeholders, including Bliss (the special care baby charity), parents and representative groups.
4. The Taskforce has developed this **toolkit** to facilitate the delivery of equitable, transparent and auditable neonatal care. The aim of the toolkit is to ensure that premature and sick newborn babies receive the care necessary to produce the best long-term outcomes for them and for their families.
5. This **toolkit** includes a set of principles for quality neonatal services, a commissioning framework and a series of resources in the form of appendices – some of which and further resources are available electronically on the accompanying CD.
6. The **eight principles identified in this toolkit** cover the major areas of activity within the neonatal care pathway. They outline markers of good practice in the following areas:
 1. organisation of neonatal services;
 2. staffing;
 3. care of the baby and the family experience;
 4. transfers;
 5. professional competence, education and training;
 6. surgical services;
 7. clinical governance; and
 8. data requirements.

Appendix C contains further explanation of these principles, together with markers of good practice and audit indicators for use in benchmarking.

7. The **commissioning framework** outlined in this toolkit should ensure that the baby and family remain as the focus along the whole pathway of care. This pathway is interdependent with other clinical services such as maternity and childhood services, including both routine and specialist care.
8. **Resources** provided in the appendices are available as templates and are designed to aid commissioners and NHS trusts in providing high-quality neonatal services.

9. The **names of neonatal units** that make up a clinical network have been redefined so that they are more meaningful and less confusing:
 - **Special care units (SCUs)** provide special care for their own local population. Depending on arrangements within their neonatal network, they may also provide some high dependency services. In addition, SCUs provide a stabilisation facility for babies who need to be transferred to a neonatal intensive care unit (NICU) for intensive or high dependency care, and they also receive transfers from other network units for continuing special care.
 - **Local neonatal units (LNUs)** provide neonatal care for their own catchment population, except for the sickest babies. They provide all categories of neonatal care, but they transfer babies who require complex or longer-term intensive care to a NICU, as they are not staffed to provide longer-term intensive care. The majority of babies over 27 weeks of gestation will usually receive their full care, including short periods of intensive care, within their LNU. Some networks have agreed variations on this policy, due to local requirements. Some LNUs provide high dependency care and short periods of intensive care for their network population. LNUs may receive transfers from other neonatal services in the network, if these fall within their agreed work pattern.
 - **Neonatal intensive care units (NICUs)** are sited alongside specialist obstetric and feto-maternal medicine services, and provide the whole range of medical neonatal care for their local population, along with additional care for babies and their families referred from the neonatal network. Many NICUs in England are co-located with neonatal surgery services and other specialised services. Medical staff in a NICU should have no clinical responsibilities outside the neonatal and maternity services.
10. This toolkit is designed for use by NHS staff who commission, provide, quality assure and monitor neonatal services across England.
11. Within the current economic climate, commissioners and providers will need to work together to identify the financial impact of the toolkit and the initiatives required to provide cash-releasing savings and improve productivity in order to make improved, high-quality neonatal services a reality.

1. Introduction

The aim of the toolkit

- 1.1 This toolkit is designed to support the delivery of equitable, high-quality specialist neonatal services in England. It builds on existing policy and is a resource for commissioners and providers to plan, deliver and quality assure care for premature and sick newborn babies and their families.
- 1.2 Strategic health authorities (SHAs) can use this toolkit to benchmark the commissioning arrangements that support safe, efficient and effective neonatal services.
- 1.3 The toolkit supports commissioners and healthcare professionals by:
 - enabling development of quality indicators to support both commissioning and assessing services;
 - providing clinicians with the resources to audit their own practice and benchmark their performance against their peers;
 - providing audit indicators to contribute to a performance management framework;
 - prompting consideration of the workforce implications when commissioning services;
 - informing and influencing regional commissioning of education and training in order to ensure a supply of skilled, competent neonatal practitioners; and
 - providing commissioners and trusts with a reminder to assess proposed changes in terms of improving quality and productivity.

How the toolkit was developed

- 1.4 The NHS Neonatal Taskforce was established in response to the National Audit Office (NAO) report *Caring for Vulnerable Babies: The reorganisation of neonatal care in England* (NAO, 2007).
- 1.5 The Taskforce included members with experience from across the NHS and Bliss, the special care baby charity. Taskforce members drew on the help and support of a range of stakeholders, including Royal Colleges, professional bodies, researchers and parent representatives.
- 1.6 The Taskforce had four sub-groups focusing on the following:
 - workforce;
 - transport and transfer;
 - commissioning neonatal care and data collection; and
 - neonatal surgery.

Within each sub-group, members considered and reflected on family-centred care and communication.

1.7 Stakeholders made a major contribution by commenting on the work and a number of surveys were also undertaken to inform the Taskforce, including:

- a workforce survey with age profiling;
- a survey of recently qualified and recently employed nurses;
- a review of acuity workforce planning tools;
- a survey of post-registration education programmes for nurses;
- a survey of transfer services by network; and
- a joint surgical survey with the British Association of Paediatric Surgeons.

This toolkit includes a comprehensive commissioning framework and a set of eight principles which can be used to measure and evaluate the quality of neonatal services. These principles are supported by audit indicators which can be used to benchmark services, directly or indirectly measure compliance and monitor improvement. A number of appendices provide practical templates and further information to support commissioners and service providers.

Making the links

1.8 This toolkit complements other published standards and guidance including the *Standards for Maternity Care* (Royal College of Obstetricians and Gynaecologists, 2008) and *Standards for Hospitals Providing Neonatal Intensive and High Dependency Care* (British Association of Perinatal Medicine, 2001 – under review).

Using this toolkit

1.9 Commissioners, service providers and clinicians should use this toolkit to support their local processes. The commissioning framework sets out the essential elements that should be considered within a managed clinical network, including needs assessment and workforce planning.

1.10 The eight principles for quality neonatal services should be reflected in commissioning intentions and service specifications by April 2010.

Definitions

1.11 Throughout the document we have defined any terms that we feel may be cause for concern. These will be denoted by a capital letter in superscript (e.g. definition^X) and the corresponding definition can be found in Appendix M.

2. The case for change in neonatal care

- 2.1 Neonatal care is highly technical and has developed rapidly over the past 30 years, resulting in improved outcomes for sick and very premature babies. The demand for specialist neonatal care has increased by 9% in the last three years (2006/07–2008/09). In 2007, 68,000 babies born in England were admitted for neonatal care and, of these, 19,500 were admitted for intensive care.
- 2.2 More babies need neonatal care because of:
- increases in fertility rates for all age groups, but particularly for women aged over 40 and under 20;
 - the availability of assisted conception; and
 - a 30% increase in women admitted at 25 weeks of gestation or less whose babies need specialist care (reference 145).
- 2.3 At the same time as the absolute increase in the numbers of babies needing specialist care, there have been marked improvements in technology and treatment, so that there has been an increase in the number of vulnerable babies who survive after being admitted for neonatal care. Between 1995 and 2006 there was an 8–10% increase in gestation-specific survival in England at gestations below 26 weeks (reference 145). Intervention is now available for babies born after birth asphyxia at full term, which reduces mortality and long-term morbidity (reference 146). These technical advances have led to increasing demand for highly technical neonatal intensive care services.
- 2.4 Despite this, 2,127 babies died within the first 28 days of life (not including stillbirths) in England in 2007, which is equivalent to 41 deaths per week, or six deaths per day.
- 2.5 Approximately 60% of infant deaths occur during the neonatal period. There is significant evidence to show that maternal age, maternal health, multiple births, ethnicity and deprivation are primary risk factors for neonatal death. Initiatives are being set up and are running currently to address some of these issues, including maternity matters, teenage pregnancy, obesity and domestic abuse. Information about these initiatives can be found at:
- www.dh.gov.uk
 - www.dh.gov.uk
 - www.nice.org.uk
 - www.nhs.uk

2,127 babies born alive died in the neonatal period in 2007. That is 41 a week, six a day. CMACE 2009

This is almost 50% more than the number of children in the UK diagnosed with cancer in 2007 (1,500). Cancer Research UK

This is 50% more than the number of people who died from MRSA in 2007 (1,593). ONS 2007

This is eight times the number of people who were fatally stabbed in England and Wales in 2007/08 (270). Home Office

- 2.6 These important demographic shifts mean that we must continually reappraise the capacity of neonatal services, so that we can meet parents' needs and aspirations and produce optimal outcomes for their child.

Clinical networks and units: the current position

- 2.7 In 2001, the Department of Health recommended that neonatal services be organised into managed clinical networks,^A with hospitals working as teams to ensure that babies were cared for in appropriate settings.

- 2.8 The NAO review of the network in 2007 concluded that the development of networks had led to improvements in co-ordination and consistency of services. However, there were still capacity and staffing problems and a lack of clear data on outcomes and deficiencies in financial management that made it difficult to determine the efficiency of services.

- 2.9 In February 2008, the Public Accounts Committee also reviewed neonatal care and made recommendations about improvements in communication between neonatal networks, primary care trusts (PCTs) and SHAs. It proposed that a set of performance measures be agreed for neonatal networks. The Public Accounts Committee also recommended that: there should be harmonisation of costs and charges for neonatal units across England; neonatal nurse shortages should be addressed; and recruitment and retention initiatives should be developed, based on good practice.

- 2.10 The NAO and Public Accounts Committee reports made a number of recommendations to improve the capability of networks and units to provide high-quality, accessible and safe services. These recommendations covered seven key areas:

- transfer services;
- outcomes of neonatal care;
- capacity;
- workforce;
- parent satisfaction;
- commissioning; and
- costs.

- 2.11 This toolkit is designed to support commissioners and service providers in meeting the challenges of improving neonatal services, by providing:

- a vision for the future of neonatal services based on effective clinical networks;
- a consistent definition of three categories of neonatal care and the three types of unit;
- a joined-up approach to commissioning;
- a coherent set of principles for quality neonatal services;
- a set of quality metrics to monitor neonatal services; and
- examples of how to address the quality and productivity challenges (quality, innovation, productivity and prevention).

Neonatal services are based upon SHA populations and organised as 23 managed clinical networks^A across England, although several are managed together in consortia relating to specialist commissioning groups (SCGs).

Each network has, or is developing, its own care pathways, guidelines and clinical audit programmes. Specific arrangements have been identified and managed locally; as a result, there is variation in network funding, in assumed roles and in stakeholder representation.

3. The vision for neonatal services

- 3.1 Neonatal services should deliver the best quality care in order to achieve the highest quality outcomes for premature and sick newborn babies and their families.
- 3.2 This will best be achieved by:
- a managed clinical network^A in which
 - constituent neonatal and allied services work together;
 - decision-making for each family is made in their best interest and following clear communication;
 - there is strong clinical leadership and engagement within each unit and across the network; and
 - family-centred care is provided by an expert and highly skilled workforce;
 - a partnership between commissioners and providers supporting neonatal care on a 'whole pathway' basis integrated with other pathways, including those for maternity care, specialist obstetric and feto-maternal medicine and children's care;
 - a system where care is provided as close to home as possible;
 - well-audited services that can measure and publish clinical outcomes; and
 - clinical managed strategies which are underpinned by research, supported research through engagement with the National Institute for Health Research (NIHR) portfolio.

Objectives of a managed neonatal network

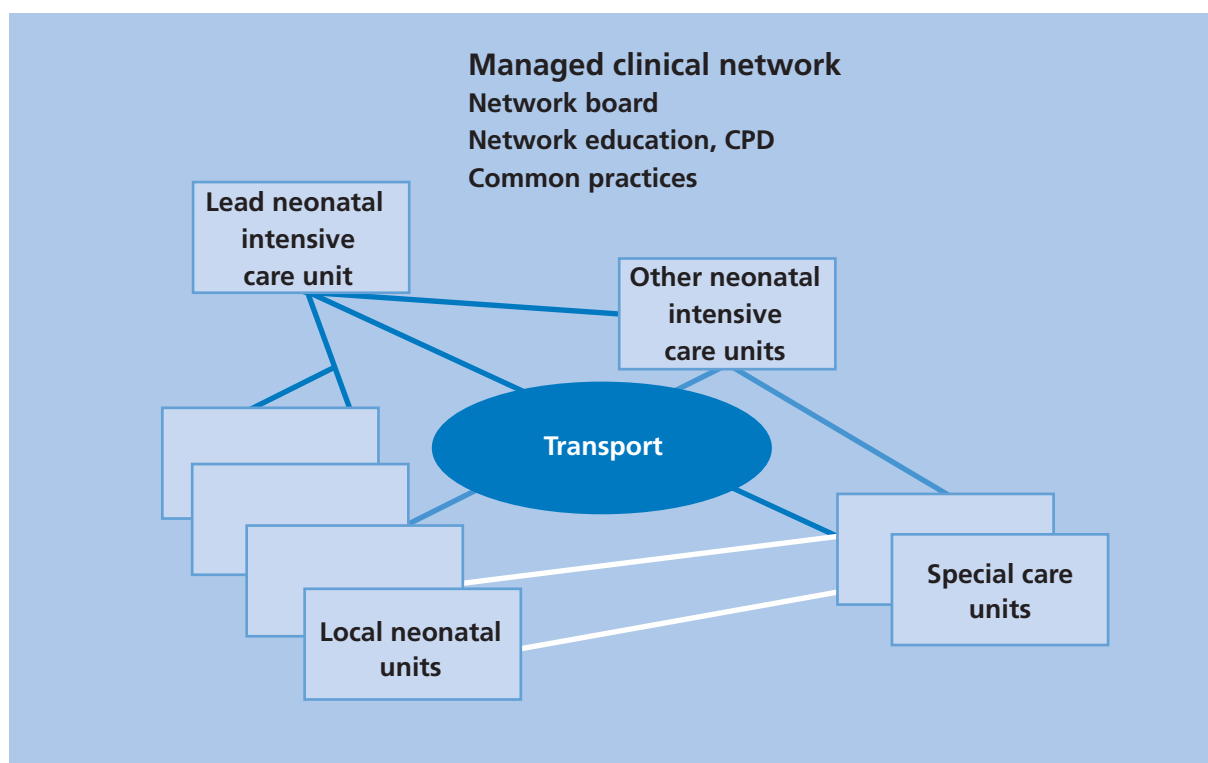
- 3.3 Neonatal networks should lead the provision of neonatal care throughout the population they serve. Their key objectives are to:
- a. ensure that babies and their families receive the highest quality of care, as close to home as possible;
 - b. help hospitals providing maternity and neonatal care to work together effectively to plan patient care and optimise resources;
 - c. ensure that advances in clinical care and technology are available to babies and mothers in need;
 - d. work with commissioners to assess need and ensure that there is sufficient capacity and an appropriate infrastructure to support services;
 - e. create new clinically-effective pathways of care, covering all aspects of care and treatment including prevention;
 - f. support the development of shared information systems, standardised activity reporting and follow-up data;
 - g. lead strategic planning of services to implement government policy, national guidance and National Institute for Health and Clinical Excellence (NICE) recommendations;
 - h. ensure that providers undertake workforce planning and inform commissioning of education and training programmes;

- i. develop operational frameworks and implement robust value-for-money financial plans;
- j. ensure that both staff and the families of patients become involved in creating, developing and reviewing the neonatal service;
- k. establish tools to gain regular user and patient feedback;
- l. assess clinical governance risks and work with providers to address areas of concern;
- m. provide data to benchmark services regionally, nationally and internationally;
- n. support the performance management function of commissioners; and
- o. facilitate research studies carried out as part of the NIHR portfolio.

Co-ordinated neonatal care

3.4. Effective co-ordinated neonatal care can be organised into managed clinical networks^A of providers delivering the different levels and types of care. The managed neonatal network has a dual role within the commissioner–provider relationship, both advising commissioners and supporting co-ordination and benchmarking/audit throughout the patient pathway (reference 40). Networks may vary depending on local considerations but a typical network structure is shown in Figure 1.

Figure 1: Example of a neonatal network organisational structure, showing clinical referral links



3.5 The objectives of neonatal services within a network are to:

- a. work in partnership with other network neonatal services to deliver care in the most appropriate setting as close to home as possible;
- b. deliver care that is responsive to the medical and psychosocial needs of both babies and parents;

- c. encourage an environment in which parents can make informed decisions about treatment and be closely involved in the care of their babies;
- d. ensure robust clinical governance and audit in neonatology, across the network and in dependencies (maternity services) to ensure high-quality care that conforms to national and network professional standards and published clinical guidelines;
- e. respond to the complex care needs of premature and sick newborn babies by establishing appropriate multi-disciplinary healthcare systems; and
- f. monitor and report short- and long-term outcomes for children who meet the criteria for assessment within the unit/network, commencing with two-year outcomes.

Definition of categories of neonatal care

- 3.6 Neonatal care may be categorised into patterns of care dependent upon the need for nursing and medical support. The most intensive care demands highly expert technical and nursing support and cannot be sustained in all neonatal services; hence, services are designated into one of three types of neonatal unit (see page 18). In the past, categories of care and neonatal services were given numerical labels, which did not reflect the same pattern and often led to confusion. We have recommended new descriptions of the levels of care and types of neonatal units that we feel reflect better the activity that takes place in the unit.
- 3.7 Neonatal care includes three categories of care which are defined in greater detail in professional publications (reference 39):
- **Special care (SC)** is that provided for all other babies who could not reasonably be looked after at home by their mother. Babies receiving special care may need to have their breathing and heart rate monitored, be fed through a tube, supplied with extra oxygen or treated for jaundice; this category also includes babies who are recovering from more specialist treatment before they can be discharged. Special care which occurs alongside the mother is often called '**transitional care**' but takes place outside a neonatal unit, in a ward setting. Transitional care is not specifically addressed within this toolkit.
 - **High dependency care (HDC)** takes place in a neonatal unit and involves care for babies who need continuous monitoring, for example those who weigh less than 1,000g (2lbs 3oz), or are receiving help with their breathing via continuous positive airway pressure (CPAP) or intravenous feeding, but who do not fulfil any of the requirements for intensive care.
 - **Intensive care (IC)** is care provided for babies with the most complex problems who require constant supervision and monitoring and, usually, mechanical ventilation. Due to the possibility of acute deterioration, a doctor must always be available. Extremely immature infants all require intensive care and monitoring over the first weeks, but the range of intensive care work extends throughout the whole gestation period.

Types of neonatal unit

3.8 Neonatal care takes place in three types of unit:

- **Special care units (SCUs)** provide special care for their own local population. Depending on arrangements within their neonatal network, they may also provide some high dependency services. In addition, SCUs provide a stabilisation facility for babies who need to be transferred to a neonatal intensive care unit (NICU) for intensive or high dependency care, and they also receive transfers from other network units for continuing special care.
- **Local neonatal units (LNUs)** provide neonatal care for their own catchment population, except for the sickest babies. They provide all categories of neonatal care, but they transfer babies who require complex or longer-term intensive care to a NICU, as they are not staffed to provide longer-term intensive care. The majority of babies over 27 weeks of gestation will usually receive their full care, including short periods of intensive care, within their LNU. Some networks have agreed variations on this policy, due to local requirements. Some LNUs provide high dependency care and short periods of intensive care for their network population. LNUs may receive transfers from other neonatal services in the network, if these fall within their agreed work pattern.
- **Neonatal intensive care units (NICUs)** are sited alongside specialist obstetric and feto-maternal medicine services, and provide the whole range of medical neonatal care for their local population, along with additional care for babies and their families referred from the neonatal network. Many NICUs in England are co-located with neonatal surgery^B services and other specialised services. Medical staff in a NICU should have no clinical responsibilities outside the neonatal and maternity services.

3.9 Each unit within a network should also have access to 24-hour transfer services to ensure that babies receive care in appropriate settings timed to maximise clinical outcomes.

3.10 Babies requiring surgical care should receive the same level of care, support, resource and specialist input as a baby receiving care in a medical neonatal unit.

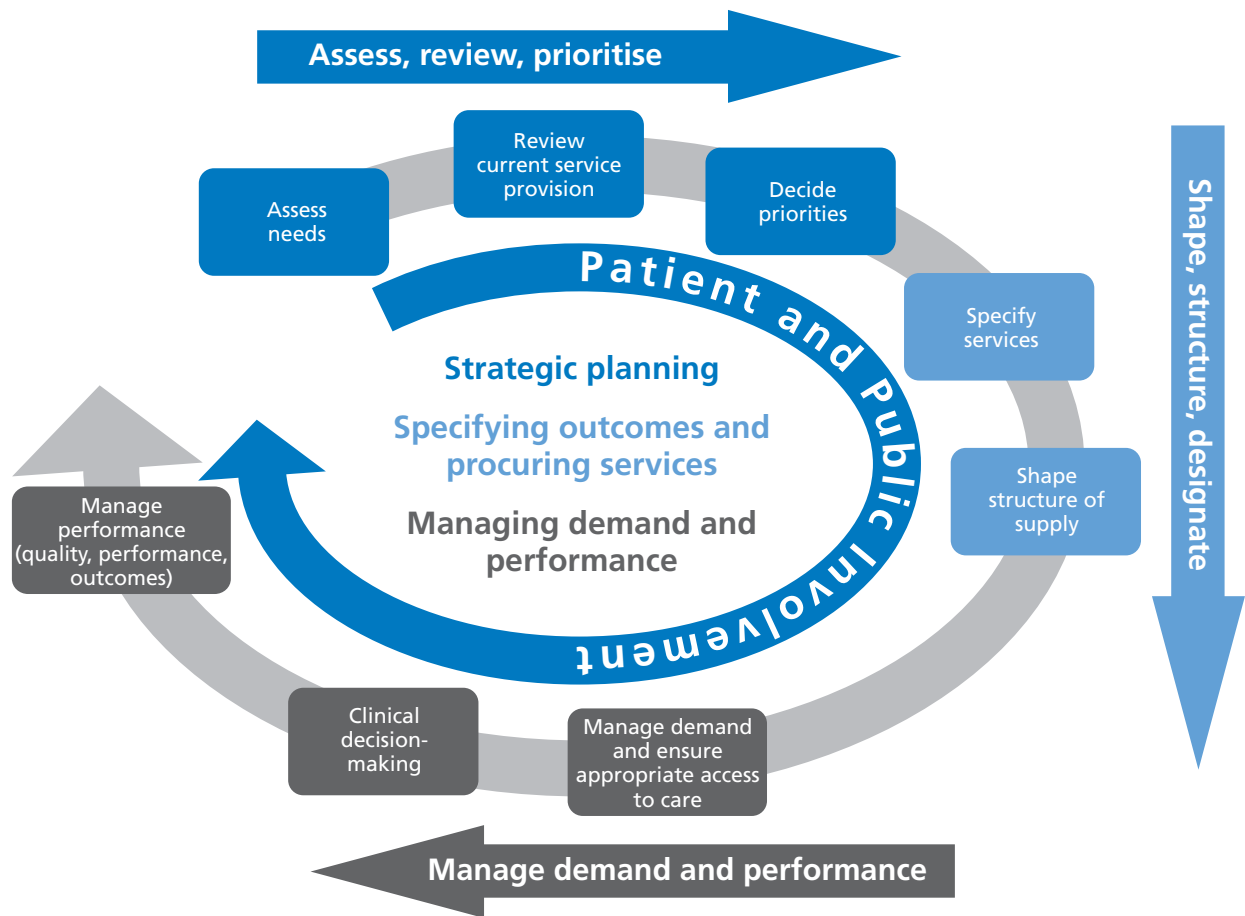
Joined-up approach to commissioning

3.11 Neonatal care needs a whole-systems approach to ensure that babies, families and staff all share a positive experience. Neonatal care should therefore be commissioned on a network basis and should be considered alongside both maternity and feto-maternal medicine services. Because of differences in population size, some commissioners may commission more than one network. It is vital that neonatal networks communicate and co-ordinate their activities effectively.

3.12. A high quality of care for premature and sick newborn babies and their families is most likely to be achieved if all the elements of specialist neonatal care – including intensive, high dependency, special care, transfer services and neonatal surgical care – are commissioned together with all maternity and neonatal services across a managed clinical network.^A

- 3.13 Neonatal care is interdependent with obstetric and feto-maternal medicine. This whole perinatal pathway of care should be commissioned, either by the relevant SCG or collaboratively by PCTs (referred to collectively as 'commissioners' in this toolkit).
- 3.14 The following services should be commissioned as an integral part of neonatal care:
- 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; and
 - allied health professional support during and following neonatal care.
- 3.15 As well as commissioning the neonatal care pathway, commissioners should ensure that services on which the neonatal service relies are commissioned as part of that pathway. This includes services such as:
- feto-maternal services;
 - neonatal surgery^B and other supra-regional services;
 - ophthalmology/retinopathy of prematurity (ROP) screening and treatment;
 - discharge and community care;
 - longer-term follow-up (2, 6 and 10 years);
 - end-of-life care;
 - palliative care;
 - access to universal newborn screening;
 - immunisation programmes;
 - safeguarding children; and
 - perinatal pathology.
- 3.16 Commissioning is a cyclical process that is carried out strategically across primary care populations and, for specialised services, across more than one PCT population. In very special circumstances, planning may need to be undertaken for an individual patient or family, e.g. on discharge from hospital.
- 3.17 Figure 2 describes the commissioning cycle. It has three distinct phases. Phase 1 covers reviewing and prioritising, while Phase 2 covers the shape, structure and designation of future providers within a network and Phase 3 focuses on managing the ongoing demand for services and monitoring performance of both the individual units and the network of care. Guidance on undertaking these phases can be found at Appendix A and sources of data to assist with the capacity assessment can be found at Appendix B.

Figure 2: Commissioning cycle



4. Principles for quality neonatal services

- 4.1 To achieve high-quality neonatal care, networks and their constituent services will need to meet a range of markers of quality of care. The following eight principles cover the major areas of activity within the neonatal care pathway and should be read with other professional standards.
- 4.2 These principles are supported by markers of good practice that define the characteristics of high-quality services and are based, where possible, on evidence or consensus of opinion (see Appendix C). They highlight the importance of clinical research in the evolution and development of neonatal care.
- 4.3 Each principle is supported by measurable indicators for use in benchmarking.

Principle 1: Organisation of neonatal services

Neonatal care is organised in managed clinical networks^A to ensure appropriate expert treatment and provide equity of access to care of the highest standard producing optimal outcomes.

Principle 2: Staffing of neonatal services

An adequate and appropriate workforce with the leadership, skill mix and competencies to provide excellent care at the point of delivery is available in neonatal services, including those providing neonatal surgery.^B

Principle 3: Care of the baby and family experience

Neonatal care adopts a family-centred philosophy of care that helps families whose baby is in hospital to cope with the stress, anxiety and altered parenting roles that accompany their baby's condition. It puts the physical, psychological and social needs of both the baby and their family at the heart of all care given. Ultimately, family-centred care may enhance attachment between a baby and the family and result in improved long-term outcomes for both.

Principle 4: Transfers

A service is available at all times and to all units within a network, providing safe and effective transfers for newborn babies. This service is additional to the delivery of in-patient care, recognises the importance of family circumstances and provides arrangements to undertake or facilitate transfers in all categories (Appendix J) as part of its baseline provision.

Principle 5: Professional competence, education and training

Access to education and training is available to enable members of the multi-disciplinary neonatal team to be trained to the level of competence necessary to enable the delivery of high-quality care.

Principle 6: Surgical services

Babies requiring surgical care receive the same level of care, support, resource and specialist input as they would receive in a medical neonatal service.

Principle 7: Clinical governance

A network clinical governance framework monitors the quality of care provided to babies and their families, enables continuous service improvement, encourages clinical excellence and innovation and ensures clear accountability, while maintaining high levels of safety. Research is central to good patient care in neonatology.

Principle 8: Data requirements

High-quality data are required, offering the opportunity to provide accurate information to all clinicians, researchers and patients to improve the outcomes of care.

5. Measuring the quality of neonatal services

Overarching quality outcomes

- 5.1 To enable the NHS to meet the vision for neonatal services, commissioners and providers need to assure themselves, using appropriate local indicators, that networks are meeting, or making progress towards meeting, the following overarching quality outcomes:
- Babies are delivered at a unit appropriate for the care of the mother and the baby.
 - Babies are cared for at the appropriate type of unit for their needs.
 - Mothers and babies remain in the same hospital for their care.
 - Neonatal units are staffed and skilled to the appropriate levels to optimise care of babies.
 - Families report positive experiences in neonatal services.
 - Parents and babies are supported on discharge.
 - Robust data are collected and collated to inform the commissioning processes.
- 5.2 Metrics for indicator development can be found on page 24 onwards. Commissioners and networks should review these quality outcomes annually.

Managing demand and performance

- 5.3 Year-on-year demand for neonatal services is usually predictable, providing that demographic and socioeconomic changes in the population are considered, and can be effectively managed by the commissioning processes as set out in Appendix A. However, day-to-day demand for neonatal care is less predictable and the variable nature of the demand can mean that even well-designed networks may be unable to cope with the need for cots. Commissioners should monitor these episodes and develop strategies to cope with them, in partnership with the providers and other local neonatal networks. They should also ensure that any episodes of inappropriate transfer are investigated.
- 5.4 Monitoring and evaluation arrangements will be agreed between the service provider and the local commissioner as part of the contract with the provider organisation.

5.5 We recommend the following approach to monitoring neonatal services (the principles for quality neonatal services are listed in Appendix C of this toolkit):

- Quality metrics appropriate for monitoring by networks and commissioners are suggested below. Networks and commissioners may wish to agree specific quality indicators and targets – these will need to be updated periodically, as clinical care evolves. NICE will develop a quality standard for specialist neonatal care by April 2010 (www.nice.org.uk).
- Networks should regularly review services' compliance with the principles for quality neonatal services.
- A network provides neonatal care and access to 24-hour transfer capability for the whole of its population based on the principles for quality neonatal services. There should be agreed arrangements for investigating and reviewing situations where care in an appropriate service is not available within the network.
- Services should be paid for the work they are contracted to do based on the highest care level received in a 24-hour period.
- Delivery of intensive care in an inappropriate setting should not normally be reimbursed unless
 - a) this activity is agreed beforehand with commissioners; or
 - b) subsequent review identifies that the action taken was in the best interests of the baby and family and with the support of the lead NICU.
- Data collection is an essential part of the expected service. Each trust should ensure that data collection systems are HL7 compliant (meet NHS specifications) and that sufficient support is available to the clinical team to allow robust and verifiable data collection. Each neonatal service should have a system for following up babies who meet the criteria for assessment and an outcome data collection system, which links these data to patient records. This will be best delivered and co-ordinated on a network-wide basis.

Quality metrics

5.6 The following quality metrics should be monitored at least once a year. (An example dashboard can be found at Appendix D.)

Key

- T** Tracking long-term performance of the network
- O** Monitoring operational activity
- Q** Monitoring service patient focus and governance
- SO** Service outcomes
- N** Network indicators

5.7 Service structure

- Cot closures of greater than 48 hours. (T)
- Nursing staff training levels. (T)
- Monitoring of nursing and medical staff vacancy levels and the use of bank (NHS professionals) or locum services. (T)
- Sickness levels. (T)
- Report of refusals of transfer requests (*in utero* and postnatal), including reasons for refusal. (T)

5.8 Service process

- Median and 95th percentile activity levels at each category of care. (O)
- Summary of shift-by-shift analysis of nursing numbers against activity and the number of shifts per annum, when staffing levels fall below those recommended. (O)
- Evidence of compliance with family-centred care (Principle 3), parent support group activity and clinical psychology support. (Q)
- Evidence of satisfactory parental feedback and details of actions on issues raised from parental feedback forums and questionnaires, and action plans. (Q)
- Evidence of working in partnership with NIHR and its research networks to optimise public and parental involvement in research. (Q)
- Summary of audit reports (and their action plans) prepared over the past 12 months and evidence of regular liaison meetings/mortality and morbidity meetings within the unit and across the whole system. (O)
- Report of the numbers and nature of complaints, incidents, near misses and sudden untoward incidents. (Q)

5.9 Health outcomes

- Adjusted perinatal mortality and review of deaths for preventable factors. (SO)
- Network-determined annual report (British Association of Perinatal Medicine (BAPM) data set, 2003) (SO/Q), including:¹
 - incidence of blood stream infection,² related to patient days, stratified by gestational age and including reportable infections (SO/Q); and
 - incidence of neonatal encephalopathy,³ networks will collect outcome data by unit and provide a network annual report. (SO/Q)
- Report of National Neonatal Audit Programme return/other benchmarking activity. (Q)
- Report of two-year outcomes for agreed target groups, including follow-up rate and prevalence of disability. (SO/Q)

5.10 Network outcomes

- Network-based transfer audit to include incoming babies and transfers out, inappropriate transfers, delayed transfers and inappropriate intensive care activity. (N and T)
- Network-wide reporting of above outcomes (by PCT, foundation and acute trusts) specifically including activity levels. (N and all)
- Inappropriate care delivered outside the network-defined care pathway.
- Risk-adjusted mortality.
- Confidential Enquiry into Maternal and Child Health/Centre for Maternal and Child Enquiries outcomes.
- BAPM minimum data set.
- National Neonatal Audit Programme outcomes.

1 Note that professional definitions for these two additional outcomes are required; we recommend that national collation of network data is undertaken to support a national benchmarking process.

2 Modi *et al.* *Archives of Disease in Childhood – Fetal and Neonatal Edition* (2009); 94:F8–F12.

3 For a definition, see www.npeu.ox.ac.uk/tobyregister

- Two-year outcomes for agreed target groups.
- Neonatal encephalopathy rates.
- Individual network-agreed indicators of neonatal outcomes.
- Nationally agreed outcome measures for the future.
- Surgical episodes.
- Number of research studies open to recruitment at each neonatal unit, number of patients recruited and number of patients followed up as part of a research study by centre.

Quality and productivity (quality, innovation, productivity and prevention)

- 5.11 The Taskforce recognises that there will be different challenges between regions, networks and units within a network in implementing this toolkit. Overall, it is likely that areas will need to invest to continue to improve their commissioning capability and the quality of services. The resources required to support this investment will vary, based on the gap analysis identified through designation processes and strategic reviews.
- 5.12 Implementation of the toolkit will need to be achieved in the context of a changing economic climate for the NHS. Improving quality and value for money go hand in hand. With no increase in NHS funding, coupled with increasing demand for care from our rising birth rate, adjustments will need to be made.
- 5.13 In implementing the toolkit locally, commissioners and service providers should question proposed changes and ensure that they focus squarely on improving quality and productivity.
- Does the proposal improve **quality**? How can this be measured, what outcomes will be achieved and how will this be demonstrated?
 - Are there **innovative** ways to achieve what is needed? Can it be done in a different way, without compromising quality and by increasing productivity?
 - Will **productivity** improve? Can you make a process more efficient, by saving time or improving quality elsewhere in the system or service?
 - What can be done to increase **preventative** measures – prevention of admission, prevention of undesirable outcomes, prevention of user dissatisfaction?
- 5.14 Examples of assessing proposed changes in terms of quality and productivity can be found at Appendix E. For transfer services, there are examples of challenges which may need to be met and a matrix has been devised for assessing workforce challenges.

Appendices

Appendix A: World-class commissioning of neonatal care

The World Class Commissioning (WCC) programme aims to transform the way health and social care is commissioned. WCC competencies provide the knowledge, skills, behaviours and characteristics that underpin effective commissioning and are shown below.

Effective commissioning of specialised services ensures that:

- the **right** patient (selected using clear criteria and referral guidelines) is offered
- the **right** treatment (evidence-based, clinically appropriate and cost-effective treatment in the appropriate setting), by
- the **right** provider (monitored against agreed service/clinical quality standards), in
- the **right** place (making use of local facilities where possible but avoiding unnecessary duplication of provision), at
- the **right** cost (using robust costing and information systems and showing demonstrable value for money)
- **with the full involvement of the patient** or parent/carer (providing adequate information to enable supported choice).

By using this framework and the principles for quality neonatal services, commissioners can build the capacity and quality of neonatal services needed for their local populations. They will be able to monitor the performance of current services, use a range of mechanisms to improve quality and efficiency and, if necessary, decommission services, review new market entrants and build new capacity.

This commissioning framework will need periodic updating as clinical practice changes and as more evidence of effectiveness becomes available.

WCC defines 11 competencies relevant to all partners within neonatal networks. The following section shows the behaviours and skills required of networks to deliver the WCC competencies with partners.

WCC competencies	Neonatal networks
<p>1. Locally lead the NHS</p>	<p>Neonatal networks, comprising the NHS and partners locally, are the lead bodies that drive up quality. Networks ensure that commissioners, parents and providers have the opportunity proactively to manage and improve the whole patient pathway, including prevention as well as delivery of care.</p> <p>The network is the forum for strategic development and long-term planning based on local needs. It is responsible for using resources wisely and makes decisions which take the longer-term needs of babies and families into account.</p>
<p>2. Work with community partners</p>	<p>Neonatal care is interdependent with services for women, children, young people and their families. Networks need to develop relationships with the wider NHS, specifically children’s trusts and other agencies.</p> <p>Neonatal care pathways should deliver measurable health outcomes and contribute to the wider health agenda for women, children and families.</p> <p>Neonatal pathways should link with universal pathways of care and pathways for complex care if ongoing care is required.</p>
<p>3. Engage with public and patients</p>	<p>Neonatal networks ensure that families and voluntary/community organisations are involved in the design and delivery of services, including supporting families and professionals throughout the care pathway.</p> <p>On behalf of constituent PCTs, networks may interface directly with LINKs (health and social care local involvement networks) and overview and scrutiny committees in relation to neonatal services.</p>
<p>4. Collaborate with clinicians</p>	<p>The collaboration of clinicians is fundamental to neonatal networks. Networks ensure that the expertise of clinicians and other professionals is integral to the design and development of services. Networks support workforce planning and development.</p> <p>Networks also support commissioners in ‘horizon scanning’ and ensure clinical evidence is used to commission the pathway of care.</p>

WCC competencies	Neonatal networks
<p>5. Manage knowledge and assess needs</p>	<p>Neonatal networks ensure that services are responsive to the needs of the local population, through liaison with local partner organisations in relation to joint strategic needs assessment.</p> <p>Networks gather quantitative and qualitative information about the needs of local populations, services currently provided, and about inequalities in access to and provision of services.</p> <p>World-class commissioning of neonatal services will need to include a robust assessment of both the current needs and any predicted growth. This is best achieved by ensuring an integrated approach to maternity and newborn services and the longer-term impact on children and young people’s services.</p>
<p>6. Prioritise investment</p>	<p>Neonatal networks work with commissioners and providers to review existing investment and prioritise allocation of new or released resources.</p> <p>Neonatal networks should ensure that costs for neonatal services are appropriate to the levels of care provided, and are benchmarked across networks to achieve a uniform per diem price.</p> <p>Networks need to ensure that resources are achieving the best possible outcomes for babies and families. The wider community should be informed of any investments with a clear indication of outcomes expected.</p>
<p>7. Stimulate the market</p>	<p>Neonatal networks support commissioners in reviewing future requirements and making assessment of current and future demand.</p> <p>Commissioners need to show that they have considered testing the market for neonatal services. There may be limited opportunities in relation to some specialised services but others, for example, transfer and community services, may be procured from a variety of providers, including third sector organisations. Commissioners need to be able to set out their strategy for market management, including which services they plan to open to competition, which they don’t, and why.</p> <p>Networks need to support commissioners in building and creating capacity where required and decommissioning where appropriate.</p>
<p>8. Promote improvement and innovation</p>	<p>Neonatal networks provide a forum for promoting improvement and innovation along the patient pathway, including discharge and ongoing support.</p> <p>Providers, commissioners and families work together to encourage improvement and innovation to optimise outcomes, particularly for high-risk groups of women and babies. Good practice should be shared both within the network and nationally.</p>

WCC competencies	Neonatal networks
9. Secure procurement skills	<p>Commissioners develop their procurement and contracting skills, supported by the neonatal network.</p> <p>Networks ensure that commissioners have the expertise and advice needed to deliver outcome-based contracts with quality measures that are relevant to babies and families.</p>
10. Manage the local health system	<p>Neonatal networks champion the local vision and strategy for neonatal services. Partners within the network are able to articulate and explain this vision within their own organisations. Partners also bring to the network an understanding of wider health issues and pressures on the local health system.</p> <p>Networks support providers in managing change and improving outcomes and efficiency. They have an understanding of the links between services and those services that are most effectively commissioned or provided regionally and nationally.</p> <p>Workforce planning is an integral element of commissioning and networks need to link with SHAs, workforce deanaries and higher education institutions (HEIs) to support the strategic direction of the network.</p>
11. Make sound financial investments	<p>Neonatal networks work with commissioners and providers to review existing investment and prioritise allocation of new or released resources.</p> <p>Neonatal networks should ensure that costs for neonatal services are appropriate to the levels of care provided, and are benchmarked across networks to achieve a uniform per diem price.</p> <p>Networks need to ensure that resources are achieving the best possible outcomes for babies and families. The wider community should be informed of any investments with a clear indication of outcomes expected.</p>

Commissioning framework for neonatal services

This framework provides a resource for commissioners and providers of neonatal services to help them deliver high-quality care for premature and sick newborn babies and their families. It describes three types of neonatal services, which work together with commissioners and families as a network. The principles section (Appendix C) describes the quality expected from neonatal services and provides details of transfer and surgical services for premature and sick newborn babies.

This framework aims to:

- ensure that commissioners and providers work closely with parents to achieve high-quality neonatal services;

- inform neonatal care providers of the service quality expected by their commissioners; and
- inform parents and other partners about the scope and quality of neonatal services that should be provided by the NHS.

This framework has been developed in accordance with the principles of WCC. It describes a strategic vision of an auditable model of neonatal care, which will enable the best possible outcomes for premature and sick newborn babies and their families in the modern NHS.

This framework has been developed by the Neonatal Taskforce with commissioners, neonatal network managers, clinicians, nurses and Bliss. The information concerning data, transfers, surgery and workforce was contributed by focused subgroups. A formal stakeholder event to discuss the draft framework and principles was held on 4 March 2009. Comments received were taken into consideration in the final version.

Using the framework

This framework supports commissioning by:

- advising on assessing the need for neonatal care in the population within a neonatal network;
- providing a model of service provision within care networks that ensures the baby and family remain the focus throughout the care pathway;
- providing an example specification (Appendix F) for neonatal care which links the principles for quality neonatal services and templates for local adaptation (please see the accompanying CD);
- suggesting metrics that commissioners can use to monitor the quality and outcomes of their current services and identify areas for improvement; and
- providing examples of good practice in engaging with parents and families to support babies in neonatal services and on their discharge (Appendix G).

Assessing, reviewing and prioritising

Neonatal care is a complex service that should be planned on a population base of 1 million or more, taking into account demographic trends and changes. Needs assessment should be informed by:

- the birth rate and demographic projections;
- the prematurity rate for a population – this is dependent on a range of population indicators which increase the risk of very preterm birth (those who most predictably need access to neonatal care), including:
 - multiple birth rate;
 - teenage pregnancy rate;
 - indices of deprivation or social disadvantage; and
 - increased immigration/changes in ethnicity;
- congenital abnormality rates – babies with abnormalities are likely to require specialist neonatal care and ongoing paediatric care;
- referrals into the network for supra-specialist care (e.g. neonatal cardiology, neurosurgery, ear, nose and throat);
- reconfiguration plans which may change patient flows, especially any plans for changes to maternity and paediatric services;

- the geography of the area, especially travelling distances and times;
- the overall network neonatal care activity:
 - current activity levels;
 - transfers out of network (*in utero* and *ex utero*);
 - transfers into network (*in utero* and *ex utero*); and
 - the volume of intensive care activity in 'inappropriate' settings (e.g. intensive care for more than 48 hours without following care pathways and network transfer protocols occurring in a unit that is not staffed to provide long-term intensive care); and
- compliance with the principles for quality neonatal services across the network.

The impact of social deprivation is felt in many neonatal units. Teenage mothers and mothers who have significant mental or physical health problems are at higher risk for premature delivery, low birth weight and infant mortality. The incidence of low birth weight could be reduced by 30% if the poorest people in a society enjoyed the same health as the most affluent. Developing effective support in pregnancy for these mothers is an important preventative health measure both for themselves and their babies.

It is vital that information about the whole neonatal economy (including the total numbers of *in utero* and *ex utero* transfers) is collected at a network level to establish whether the network is meeting the needs of its local population. Each neonatal network should be capable of meeting the needs of its population in all eventualities, and in networks where this is not possible, the problems should be identified and appropriate action taken.

Appendix B shows the sources of information that can help commissioners in assessing need and planning neonatal services for their population.

Determining capacity required

Robust evidence on which commissioners can base their assessments of the capacity required for their local population is not yet available. A neonatal capacity planning tool is in development to support commissioners in this work, building on the Department of Health Neonatal Capacity Toolkit (www.healthcareworkforce.nhs.uk/index.php?option=com_docman&task=doc_download&gid=208). Commissioners are advised to consider the following issues when planning neonatal capacity:

- Current levels of and trends in neonatal care activity and supply factors (for example, whether over- or under-capacity have influenced historical activity levels).
- The impact of demographic changes, especially those affecting the number of low-birth-weight and very preterm babies.
- The linear relationship between the number of nurses per cot and mortality. Planned capacity should not exceed an average occupancy of 80%, as the increase in mortality becomes statistically significantly worse above this level (reference 60).
- Each network should have the capacity to provide all levels of neonatal care for at least 95% of babies born to women booked for delivery in the network (i.e. no more than 5% of babies born to booked women should be transferred out of network for inappropriate reasons).

Commissioners will need to balance efficiency of service against the proportion of babies and their families who may need to travel outside the network for their care. In general, neonatal services running at less than 70% average occupancy are a less efficient way of organising care. Commissioners may, however, decide to commission such services and pay the associated premium in order to improve local access and prevent families having to travel long distances.

Transfer services are an essential component of neonatal care – thus robust transfer services should also be commissioned.

Surgical care provision should be considered separately to the medical care needs of the population, in order to ensure that care for babies in surgical care does not compromise the ability of the service to care for babies within its defined catchment area.

Shape, structure and designation

Each commissioner should evaluate its neonatal network against the specifications within this framework and the principles for quality neonatal services. Individual services should then be designated as one of the three types of neonatal care provider (see page 18). Designation may be carried out provisionally if the service cannot yet meet the principles for quality neonatal services. Within the overall unit designation, individual networks may agree gestational age or other criteria for admission.

The extent of any gap between current resources and those required to meet the principles for quality neonatal services should be identified and an action plan agreed and documented by the provider and commissioner.

Commissioners undertake designation of each local neonatal care provider and should review designation on a five-yearly basis, or sooner if the principles for quality neonatal services are not met or the monitoring of quality metrics indicates a problem with the quality of service.

Neonatal services will contribute to the periodic reviews as part of NHS trusts and may also be subject to thematic reviews specific to neonatal care, to be carried out by the Care Quality Commission.

More detailed commissioning work to support these objectives may include agreeing on:

- the service model;
- service standards;
- the impact of new technology and/or techniques;
- latest evidence of best practice and most effective treatments;
- the patient access and egress criteria;
- the currency and classification system;
- the costing basis; and
- the monitoring and reporting requirements.

These elements do not necessarily need to be reviewed annually.

Possible outcomes of the designation process are:

- no significant change to service configuration or delivery;
- a new service (although neonatal intensive care is well established in most areas);

- a review of current capacity in intensive, high dependency, special and transitional care;
- for some current providers, a need to improve services or provide more appropriate service to meet the quality principles;
- an increase in the number of providers to meet increasing need; or
- a reduction in the number of providers for some elements of the pathway.

Coding and payments

At present, neonatal intensive care falls outside Payment by Results. This is because of the difficulties with robust data collection. As a consequence, commissioning and funding practices vary considerably, with many services still being funded through different arrangements for intensive care, high dependency (usually through SCGs) and special care via PCTs.

Not all commissioners are currently using cost and volume contracts based on local tariffs. In many cases, a unit will receive its income via a combination of a block contract with the PCT for providing special care and on a per case basis with the SCG for providing high dependency and intensive care.

The National Audit Office (reference 86) recognised that this could lead to confusion and lack of clarity over the resources available for trusts, and recommended that there should be a single contract with each provider with clear definition of activity within the three care levels. This should include transitional care activity to ensure a common policy.

Commissioners should ensure that providers collect the Neonatal Critical Care Minimum Data Set, and move towards commissioning services on a per diem cot basis across the care levels.

Commissioners will only pay once in 24 hours for the highest episode of care. When the 24-hour period starts (e.g. at 00.00 hours, or 24 hours after admission time) can also vary, but should be consistently applied within a commissioning area.

Payment for any neonatal services will depend on the provider delivering adequate and accurate data as stipulated in the contract. If these data are not forthcoming, the commissioner can retain the right to withhold payment for activity relating to the missing/disputed data, until issues have been resolved to the satisfaction of both the commissioner and provider.

In agreeing local tariffs, there should be transparency between the commissioner and provider on all income and a move towards reviewing costs at a patient level, to ensure that any developmental needs are agreed.

Suggested additional contract clauses for neonatal care

The contract provides an important tool for assuring accountability between providers and PCTs and for improving performance.

All providers and PCTs are obliged under the contract to have regard to the NHS principles, published in *The NHS Plan 2000* (Department of Health), and subject to amendment by the Secretary of State from time to time. Subject to the outcome of

the consultation exercise and the passage of legislation, all providers will be obliged to have regard to the requirements of the NHS Constitution.

The following clauses may be inserted in the schedules that are in the standard NHS contract:

- Schedule 2, Part 2 (steps after discharge):
 - Post-discharge referral to universal services^H should be determined.
 - 24-hour telephone contact point and any community support should be defined.
 - Out-patient consultation requirement should be determined.
 - The provider will inform any referring clinician and the baby's GP (in writing) that they consider that services have been completed to the patient and provide:
 - ◆ discharge medication;
 - ◆ information to relevant parties of all aspects of the discharge plan; and
 - ◆ all required documentation pertaining to the baby's and family's care.
- Schedule 4 Quality Assurance (neonatal care):
 - Should include specific quality standards and performance indicators related to local services.
- Schedule 5, Part 3 (local requirements):
 - Accurate and timely information is essential for effective commissioning, and for the management of robust business processes. All providers are required to provide the information set out in **Schedule 5**, to the specified standards for quality and timeliness. This includes information required to monitor and assess payments relating to tariff flexibilities.
 - Failure to comply with the information requirements in terms of:
 - ◆ accuracy;
 - ◆ completeness; or
 - ◆ timeliness,
 can result in Main body, Clause 29 being enacted, which can result in funds being withheld.
 - In respect of the supply of neonatal care services, providers should ensure information systems used can collect the National Critical Care Minimum Data Set and National Neonatal Audit Project data.
- Schedule 20 (clinical networks and screening programmes):
 - Links to Main body, Clause 12:
 - ◆ Clinical networks and screening programmes need to be listed here so that the provider will be required, where appropriate, to participate in them.
 - ◆ The provider is not obliged to participate in clinical networks and screening programmes that are not listed here.

For further information see *Guidance on the Standard NHS Contract for Acute Hospital Services*: www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_091451

Appendix B: Data and information for assessing need for neonatal care

Topic	Information needed	Potential sources of data/information
Occurrence	<p>The live birth rate by PCT within a network</p> <p>The anticipated demographic growth/fertility rate by PCT</p> <p>The number of days of care purchased by commissioners from within and outside the network by PCT</p>	<p>Local health observatories and ChiMat</p> <p>www.apho.org.uk/default.aspx?QN=CHIMAT_HOME</p> <p>ONS maternal data</p> <p>CEMACH data (CMACE)</p> <p>Local denominator data</p>
	<p>Population profile, including the following:</p> <ul style="list-style-type: none"> • age; • ethnicity/immigration changes; • adults, children and young people; • women of reproductive age, including: <ul style="list-style-type: none"> – women in prison; – women with special needs; – women with learning disabilities; and • travelling families. 	<p>Local health observatories</p> <p>JSNA</p>
Risk factors	<p>Low birth weight population by PCT</p> <p>Review of maternal risk factors that contribute to premature births and sick babies</p> <p>Number of babies born at less than 27 weeks at each unit</p> <p>Caesarean section rate</p> <p>Smoking, drugs and alcohol</p>	<p>ChiMat</p> <p>JSNA</p> <p>ONS data network data</p> <p>Maternity data</p>

Topic	Information needed	Potential sources of data/information
Health inequalities	<p>Levels of deprivation within area</p> <p>Health inequalities between different groups within the population</p> <p>Transport links and public transport between hospitals</p> <p>How does the local area compare nationally in terms of its demographic, ethnic and material deprivation make-up?</p>	<p>Deprivation index</p> <p>Local health equity audit (including asylum seekers, ethnic groups, transient groups)</p>
Local health burden	Early and late neonatal deaths by network	CEMACH/CMACE Network data
	Network neonatal unit admissions against inborn delivery populations as a percentage	Network data
Cost	Total expenditure on neonatal services by network PCTs	Local audit NAO 2007
	How this breaks down into: <ul style="list-style-type: none"> existing total service costs (per patient); staff costs; capital costs; drug costs; and community costs 	Local audit National reference costs
	Committed service developments or changes to the model of care which may have cost pressures and will need to be considered	Maternity strategy Paediatric strategy
	Review of how the current service is commissioned and which currency is used	National reference costs
Local trends	Changing maternal flows	ONS
	Maternal growth	Local health intelligence Network information
	Length of stay by care level	Unit annual reports
	Capacity at each unit and cot occupancy	Network annual report
	<i>In utero</i> and <i>ex utero</i> refusal data by network and unit	Local audit
	Gestational age at discharge	Local audit National comparison

Where are we now?

What is the effectiveness and cost-effectiveness of local neonatal services? Do you know your local market for neonatal services?

Topic	Information needed	Potential sources of data/information
Neonatal services currently provided within the network and how they are used	Number of units	Network annual report
	Size of unit (admission and maternity size)	HES data
	Level of care provided by gestation and weight	ONS data Local maternity data
	Current workforce profile in terms of: <ul style="list-style-type: none"> • number; • skill mix; • competencies; and • training needs 	Network annual report
	Community support on discharge	Local audit
Screening	Percentage of patients requiring ROP screening	Local audit
Long-term outcomes	Percentage of patients followed up at two years	Local audit
Parent satisfaction	Parents' satisfaction with the current level of service	Independent national, network and unit satisfaction Surveys Bliss surveys Discovery interviews Parent group views Focus and reference groups
	Parent support available	Local audit
	Family accommodation available	Review of resources
Benchmarking	Service provision compared with similar areas	Care quality reviews? Local audit NNAP

Appendix C: Principles (characteristics of a quality service)

Principle 1: Organisation of neonatal services

Neonatal care is a high-cost, low-throughput service in which expertise is a key determinant of the quality of outcome for the patient and the family. In order to provide equity of access to care of the highest standard, which produces the optimal outcomes, neonatal care must be organised in a managed clinical network^A to ensure appropriate expert treatment.

Markers of good practice

	References
1.1 Neonatal care is provided as part of a managed clinical network ^A based on defined populations. (There is an example of a network structure on page 16.)	53, 54
1.2 Managed neonatal networks have an agreed governance framework including network structure, accountability, reporting and performance management arrangements.	62, 63
1.3 Managed neonatal networks produce an annual report covering, as a minimum, neonatal activity for the network's population, monitoring of quality markers and progress with addressing any concerns identified.	62, 63
1.4 Managed neonatal networks have mechanisms for involvement of all stakeholders, including parents, clinicians, commissioners, provider management, ambulance services and other partners.	62, 63
1.5 Managed neonatal networks actively encourage research activity in all units: <ul style="list-style-type: none"> • Each network has a link person for the extended neonatal network, the comprehensive local research network and, where appropriate, the medicines for children local research network. • Each network supports study-related handovers during transfers. 	

Audit indicators

Documentary evidence of:

- a functioning network structure;
- network board meetings;
- a governance framework and accountability arrangements; and
- network annual reports.

Principle 2: Staffing of neonatal services

High-quality neonatal services, including those providing neonatal surgery,^B rely on having an adequate and appropriate workforce with the leadership, skill mix and competencies to provide excellent care at the point of delivery.

Markers of good practice

References

2.1	Each neonatal service works with strategic partners to develop recruitment and retention strategies for all professional groups across a network. (An example of a nursing strategy is at Appendix H.)	
2.2	Nursing and midwifery (An example of a neonatal nursing career pathway is at Appendix I.)	
2.2.1	A designated lead nurse/midwife is responsible for the clinical and professional leadership and management of the service, working with the lead consultant (see 2.3.1).	39, 88
2.2.2	A minimum of 70% (special care) and 80% (high dependency and intensive care) of the workforce establishment hold a current Nursing and Midwifery Council (NMC) registration. ^C	2, 3
2.2.3	A minimum of 70% of the registered nursing and midwifery workforce establishment hold an accredited post-registration qualification in specialised neonatal care (qualified in specialty (QIS) ^D) (see 5.2.1).	57
2.2.4	Units have a minimum of two registered nurses/midwives on duty at all times, of which at least one is QIS. ^D	100
2.2.5	Babies requiring special care are looked after with a minimum of 1:4 staff-to-baby ratio at all times by either a registered nurse/midwife or non-registered staff (e.g. an assistant practitioner or nursery nurse who has undertaken accredited training to a minimum of National Vocational Qualification (NVQ) 3/Foundation Degree), working under the supervision of a registered nurse/midwife (QIS). ^D	2, 3, 78
2.2.6	Babies requiring high dependency care are cared for by staff who have completed accredited training in specialised neonatal care or who, while undertaking this training, are working under the supervision of a registered nurse/midwife (QIS). ^D A minimum of a 1:2 staff-to-baby ratio is provided at all times (some babies may require a higher staff-to-baby ratio for a period of time).	2, 3, 78

2.2.7	Babies requiring intensive care are cared for by staff who have completed accredited training in specialised neonatal care or who, while undertaking this training, are working under the supervision of a registered nurse/midwife (QIS). ^D A minimum of a 1:1 staff-to-baby ratio is provided at all times (some babies may require a higher staff-to-baby ratio for a period of time).	2, 3, 78
2.2.8	Neonatal nursing establishments in each unit are calculated against commissioned activity with an uplift of 25% to accommodate expected leave (annual, sick, maternity, paternity, mandatory training and continuous professional development (CPD)), based on an 80% occupancy level. (An Excel template for calculating this can be found on the accompanying CD.)	57, 60
2.2.9	There is a nursing co-ordinator on every shift in addition to those providing direct clinical care.	1, 4, 5, 57
2.2.10	Neonatal units providing surgical services have a nurse/midwife with neonatal surgical experience who has clinical leadership responsibility for nursing care of babies needing surgery.	46, 84
2.2.11	Neonatal units providing surgical services have at least one nurse/midwife with neonatal surgical experience who has responsibility for co-ordinating transfer and discharge of babies pre- and post-surgery, liaising with primary and community services, and supporting parents and referring teams.	46, 84
2.3	Neonatologists and paediatricians	
2.3.1	A designated lead consultant is responsible for the clinical and professional leadership and management of the service, working with the lead nurse (see 2.2.1).	88
2.3.2	A duty neonatal intensive care unit consultant is available at all times to provide advice and support by telephone to paediatricians delivering neonatal care at other network units. For networks with more than one neonatal intensive care unit, an agreed system for designating the daily availability of this clinical advice is in place. (This consultant may also be the consultant responsible for neonatal transfers (see 4.5).)	98
2.3.3	Where it is necessary for a consultant to be resident on call, another consultant is available for telephone advice and/or attendance if necessary. Medical workforce planning takes account of the European Working Time Directive (EWTD) in job planning.	98

<p>2.3.4 Three tiers of staff will be available to provide medical care:</p> <ul style="list-style-type: none"> • tier 1 – direct care (specialist trainee (ST)1–3/advanced neonatal nurse practitioner (ANNP)); • tier 2 – resident experienced support (ST4 and above; ANNP); and • tier 3 – consultant. <p>The availability and experience of tier 2 and tier 3 staff are different between the three categories of neonatal services.</p>	<p>39, 98, 103</p>
<p>2.3.5 Special care units have:</p> <ul style="list-style-type: none"> • 24-hour availability from a consultant paediatrician (or equivalent non-consultant career grade doctor); out-of-hours cover is provided as part of a general paediatric service; • 24-hour cover of resident experienced support (ST4 and above or ANNP); out-of-hours cover is usually as part of a general paediatric service; and • 24-hour cover for provision of direct care (ST1–3 or ANNP); out-of-hours cover is usually provided as part of a general paediatric service. 	<p>39, 98</p>
<p>2.3.6 Units providing short-term intensive care have:</p> <ul style="list-style-type: none"> • 24-hour availability of consultant paediatrician (or equivalent non-consultant career grade doctor) with experience and training in neonatal care; out-of-hours cover is usually provided as part of a general paediatric service; • 24-hour cover of resident experienced support with ability to respond immediately to neonatal emergencies (ST4 and above or ANNP); although out-of-hours cover is usually provided as part of a general paediatric service, where a busy general service co-exists a separate rota is provided for the neonatal service; and • 24-hour cover for provision of direct care with sole responsibility for the neonatal service (ST1–3 or ANNP). 	<p>39, 98</p>
<p>2.3.7 Intensive care units have:</p> <ul style="list-style-type: none"> • 24-hour availability of a consultant neonatologist whose principal duties, including out-of-hours cover, are to the neonatal unit; • 24-hour cover of resident experienced support for sole cover of the neonatal service and associated emergencies (ST4 and above or ANNP); and • 24-hour cover for provision of direct care with sole responsibility to the neonatal service (ST1–3 or ANNP). 	<p>39, 98</p>

2.3.8	Providers demonstrate that they are working towards increased direct consultant presence during intensive care, including a strategy to move to 24-hour cover for neonatal intensive care units.	
2.3.9	All services providing surgery to newborn babies have access to a consultant neonatologist, who should be available to give advice at all times.	129
2.4	Specialist paediatric surgeons	
2.4.1	Neonatal surgical services have a lead specialist paediatric surgeon who is responsible for the direction and management of the surgical aspects of the service, with responsibility for the appropriate training of medical staff, in conjunction with the consultant neonatologist.	46
2.4.2	A specialist paediatric surgeon is on call for the neonatal surgical service to provide advice to referring centres at all times (see 2.3.9).	129
2.5	Allied health professionals	
2.5.1	Dietetics	
2.5.1.1	All units have access to a neonatal dietician, or a paediatric dietician competent in neonatal nutrition. Dieticians in units providing surgical services have expertise in the care of babies needing surgery. Dietetic support is available for support after discharge to babies identified at nutritional risk (see 5.5.1).	31–33, 45, 79
2.5.1.2	All dieticians caring for neonates have access to a specialist neonatal dietician whose job plan contains identified capacity for providing advice and support across the network.	31–33, 45, 79
2.5.2	Physiotherapy	
2.5.2.1	All units caring for babies requiring intensive care and providing a chest clearance ^F service have access to a paediatric respiratory physiotherapist with experience in assessing and treating premature and sick newborn babies.	27–29, 130
2.5.2.2	Specialist neonatal physiotherapy services should be available across a network and accessible to all units for neurodevelopmental assessment and intervention, and for follow-up after discharge.	
2.5.3	Speech and language therapy	
2.5.3.1	All units have access to a neonatal speech and language therapist competent in the assessment and management of infants with feeding difficulties, including those with impaired swallowing.	19–23
2.5.3.2	All speech and language therapists caring for neonates have access to a specialist neonatal speech and language therapist whose job plan contains identified capacity for providing advice and support across the network.	19–23

2.5.4	Occupational therapy	
2.5.4.1	Specialist neonatal occupational therapy services are available across a network and accessible to all units for neurodevelopmental assessment and intervention, and for follow-up after discharge.	111, 112
2.5.5	Neurodevelopment	
2.5.5.1	Staff competent in neurodevelopmental assessment are available to follow up babies identified as being at high risk of neurodevelopmental problems, including babies with a birth weight of less than 1,000g and/or babies born at less than 31 weeks' gestation.	29, 41–44, 61
2.6	Pharmacy	
2.6.1	All units have access to a pharmacist whose job plan contains identified and protected capacity for providing advice and support in neonatal pharmacy (see 5.7.1).	56, 107
2.6.2	All units have access to a pharmacist competent in the provision of neonatal parenteral nutrition.	56, 107
2.7	Discharge/community	
2.7.1	All units have access to staff competent in care following neonatal intensive care and available to provide support in the community after discharge.	34–36, 102
2.8	General	
2.8.1	Each network has a designated lead clinician, lead nurse and manager whose job plans contain identified capacity for their roles within the network.	63
2.8.2	Each network has a clinical educator to co-ordinate education, training and professional development for all non-medical staff.	7–14
2.8.3	Each network has a designated lead clinician to ensure appropriate education, training and professional development for all medical staff.	39, 86
2.8.4	Each network has a developmental care lead whose job plan contains identified capacity for providing co-ordination, training and education across the network.	37, 110, 131–134
2.8.5	Each unit has an identified lead professional (see 5.1.4) for: <ul style="list-style-type: none"> • breastfeeding; • developmental needs and care of the baby; • emotional and psychological support to families; • safeguarding children; • palliative care; • bereavement support; and • education and training. 	91, 97, 141

2.8.6	Each unit has arrangements for:	39
	<ul style="list-style-type: none">• data entry and validation;• administration;• business management;• housekeeping; and• technical support.	
2.9	Imaging	
2.9.1	Diagnostic imaging services are provided by professionals with expertise in paediatric and neonatal imaging.	50

Audit indicators

Documentary evidence of:

- skill mix levels;
- workforce establishments and profile; and
- evidence of access to support services.

Principle 3: Care of the baby and family experience

Family-centred care is a philosophy of care that helps families whose baby is in hospital to cope with the stress, anxiety and altered parenting roles that accompany their baby's condition. It puts the physical, psychological and social needs of both the baby and their family at the heart of all care given. Ultimately family-centred care may enhance attachment between a baby and the family and result in an improved long-term outcome for both.

Markers of good practice

		References
3.1	Where admission to a neonatal unit is predicted, a pre-natal opportunity to visit the neonatal unit and meet key personnel is offered to the family.	52, 65
3.2	All parents are introduced to facilities, routines, staff and equipment on admission to a neonatal unit.	52
3.3	Every parent has unrestricted access to his or her baby, unless individual restrictions can be justified in the baby's best interest.	52, 46
3.4	Parents are encouraged and supported to participate in decision-making about the care and treatment of their baby. Written and regularly updated care plans are shared with parents. Clinical care decisions, including end-of-life decisions, are made by experienced staff in partnership with the parents and discussions held in an appropriate setting.	52, 46, 92, 95, 124, 125, 135–137
3.5	Parents are encouraged and supported to participate in their baby's care at the earliest opportunity, including: <ul style="list-style-type: none"> • regular skin-to-skin care; • providing comforting touch and comfort holding, particularly during painful procedures; • feeding; and • day-to-day care, such as nappy changing. 	52, 67–77, 91, 110, 113, 114, 141
3.6	Every baby is treated with dignity and respect: <ul style="list-style-type: none"> • Appropriate positioning is promoted and encouraged. • Clinical interventions are managed to minimise stress, avoid pain and conserve energy. • Noise and light levels are managed to minimise stress. • Appropriate clothing is used at all times, taking into account parents' choice. • Privacy is respected and promoted as appropriate to the baby's condition. 	52, 64, 37, 110, 113

3.7	Every parent will have the opportunity to discuss their baby's diagnoses and care with a senior clinician ^F within 24 hours following admission or a significant change in condition.	52
3.8	Written information is accessible (in languages and formats appropriate to the local community) to all users of the service to permit early and effective communication with parents covering at least: <ul style="list-style-type: none"> • admission to hospital, including travel, parking and information on local amenities; • transfer service and repatriation;^G • discharge service and arrangements for going home; • national and local support groups available; • who to contact in the hospital with queries or for advice; • where to go for further information and support, including sources of financial support and useful websites; and • services to which a baby is being transferred, including a named contact and telephone number. 	46, 52, 56, 103, 126
3.9	Written information is available (in languages and formats appropriate to the local community) to all users of the service on medical and surgical treatments, to permit early and effective communication with parents covering at least: <ul style="list-style-type: none"> • condition/diagnosis; • treatment options available; • likely outcomes/ benefits of treatment; • possible complications/risks; • possible tests and investigations; • who to contact with queries or for advice; • where to go for further information, including useful websites; and • circumstances requiring consent (written and verbal). 	52, 46, 56, 126

3.10	<p>Maternity and neonatal services encourage breastfeeding and the expression of milk through the provision of information and dedicated support, including:</p> <ul style="list-style-type: none"> • whenever possible, initiation of breastfeeding as soon as possible after birth; • when necessary, support to start expression as soon after delivery as the mother’s condition allows to maximise the benefit of colostrum; • the availability of a comfortable, dedicated and discreet area; • the facility to express discreetly at the cot-side; • the availability of breast pumps and associated equipment for every mother who requires them; • supporting breastfeeding as part of the discharge process; • promotion of safe and hygienic handling and storage of breast milk; and • access to donor breast milk as clinically indicated. 	52, 66, 86, 91, 114, 127, 141
3.11	<p>Dedicated facilities are available for parents and families of babies receiving neonatal care. As a minimum there is:</p> <ul style="list-style-type: none"> • overnight accommodation for parents: <ul style="list-style-type: none"> – One room per intensive care cot located within 10–15 minutes’ walking distance (dressing gown distance) of the unit. – Two rooms within or adjacent to the unit (with gas and air supply points to be available) for ‘rooming in’ prior to discharge. – All rooms should be free of charge and with bathroom facilities. • arrangements for secure and readily accessible storage of parents’ personal items; • cot-side, non-secure storage for personal items (e.g. baby clothes); • a parent sitting room; • a kitchen with hot drink and snack-making facilities, including provision of a microwave; • a toilet and washing area; • a changing area for other young children; • a play area for siblings of infants receiving care; • access to a telephone and internet connection within the hospital; • a room set aside and furnished appropriately for counselling and to provide distressed parents with privacy and quiet. 	52, 65, 86, 91

3.12	Families (including the baby's siblings) are able to easily access psychological and social support and parents are given written information (in languages and formats appropriate to the local community) about relevant services covering at least:	35, 39, 80, 81, 95, 101, 128, 135–137
	<ul style="list-style-type: none"> • local and national support groups; • palliative care services; • bereavement support; • social services; • spiritual support; • counselling; • benefits advice; and • availability of other support services (for example, help with care of other children). 	
3.13	Every effort is made to keep a mother and her baby/babies in the same hospital during their respective admissions.	35, 52, 128
3.14	Trusts have policies to provide financial support for families during long-term admission and/or long-distance transfer away from their local unit. Information about this financial support is made available to families.	65
3.15	Health and social care plans are co-ordinated to enable the safe and effective discharge of a baby:	34–38, 96
	<ul style="list-style-type: none"> • Parents are involved in multi-disciplinary discharge planning from the point of admission and plans are continually reviewed. • Families have appropriate information and training (for example in infant resuscitation) before being discharged home. • The baby and family have their ongoing needs at home co-ordinated and met by health professionals appropriately skilled in delivering neonatal care and support in the community. • Parents have access to accommodation so they can be with their baby and develop confidence in day-to-day care prior to discharge. • Parents meet with the team providing community care prior to discharge. • A named member of staff is responsible for co-ordinating a multi-agency discharge process for each baby and family. • Plans include support and monitoring for vulnerable families to safeguard and promote the welfare of the baby. 	

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|------|---|----------------------|
| 3.16 | The ongoing care of babies and families discharged from neonatal services is provided according to the needs of the baby and in a manner that facilitates a smooth transition home: | 102, 109,
135–137 |
| | <ul style="list-style-type: none">• Where there is no continuing specialist neonatal care requirement, the responsibility for ongoing health monitoring is transferred to universal services.^H• Where there is a need for continuing care or palliative care, the responsibility for meeting those additional needs will rest with a workforce skilled in delivering neonatal care in the community. | |
| 3.17 | All efforts are made to include families and their baby in clinical research activity: | |
| | <ul style="list-style-type: none">• Families and carers are informed about all research that their baby is eligible to participate in by using appropriate leaflets, inserts in maternity notes and inserts in unit induction packs.• When a baby becomes eligible for a research study during their admission parents and carers are informed about this.• Each unit supports families and carers during the research process by providing regular updates after a baby has been recruited to a study.• Families and carers are informed that they can withdraw from research trials at any time without compromising the care of their baby. | |

Audit indicators

Documentary evidence of:

- appropriate policies;
- care pathways;
- information leaflets;
- documentation showing provision of leaflets;
- parent facilities;
- parent feedback; and
- independent national parent surveys.

Principle 4: Transfers

A service is available at all times and to all units within a network, providing safe and effective transfers for newborn babies (reference 92). This service should be additional to the delivery of in-patient care (reference 87), should recognise the importance of family circumstances and should provide arrangements to undertake or facilitate transfers in all categories (Appendix J) as part of its baseline provision.

Markers of good practice

		References
4.1	Stakeholders (including clinical personnel from network units, the ambulance service, parents and commissioners) have input into the planning, development and monitoring of the transfer service.	106, 119–121
4.2	Commissioners and providers are responsible for transfer capacity and undertake needs assessment and gap analysis on a regular basis to ensure adequate provision to enable delivery of a service at all times.	85, 88, 119–121
4.3	The transfer service is responsible for the organisation of any neonatal transfer which lies within its service specification.	106, 119–121
4.4	There are network guidelines for <i>ex utero</i> and <i>in utero</i> transfers (IUT), including: <ul style="list-style-type: none"> • referral processes; • indications and contraindications for transfer; • requirements to document discussions between healthcare staff and women/parents/families undergoing transfer; • requirements to document discussions between receiving and sending units; • management prior to and during <i>ex utero</i> transfers; • management prior to and during IUT, including use of fibronectin screening,¹ administration of steroids and tocolysis;¹ and • parental travel arrangements. 	18, 88, 103, 106, 119–121, 123
4.5	There is a single point of telephone contact through a dedicated line on which clinical advice, cot/maternal bed availability and the transfer service can be accessed and activated at all times. Teleconferencing and call-handling functionality are available.	104, 106, 119–121
4.6	All transfers require clinical observation and record-keeping. These are of at least the same standard as would be expected throughout clinical care, reflecting the additional challenges of the transfer environment.	90, 104, 119–121

4.7	For those emergency (unplanned) transfers which are deemed time critical, ^k the transfer team departs from base within one hour from the start of the referring call.	119–121
4.8	For all other referrals, the transfer service, including ambulance provider, provides appropriately staffed and equipped transport within locally agreed time frames.	90, 104
4.9	All transport vehicle providers comply with the contracted service specification and operate to the standards applied to NHS ambulance services.	115, 116, 119–122
4.10	Clinical need and safety will determine the choice of vehicle (e.g. air or road) and ‘manner of passage’. ^l The rationale for this decision will be clearly documented and based on locally agreed guidelines.	90, 104
4.11	The transfer service has a guideline covering parental travel arrangements. Parents are given the opportunity to accompany their baby and, where this is not possible, alternative transport arrangements are made and parents are offered the opportunity to see their baby prior to transfer.	90, 103

An example of an operational specification for transfer services can be found at Appendix J.

Audit indicators

Documentary evidence of:

- protocols showing referral processes;
- clinical records;
- incident reporting records;
- service level agreement/contract;
- guidelines and records for IUT;
- operational specification of service;
- audit of departure times; and
- annual reports.

Principle 5: Professional competence, education and training

Access to provision for education and training should be available to enable members of the multi-disciplinary neonatal team to be trained to a level of competence to enable the delivery of high-quality care.

Markers of good practice

	References
5.1 All staff	
5.1.1 All staff involved with the clinical care of the newborn immediately following delivery are competent in newborn life support. Trusts ensure that members of staff hold an accredited certification in newborn life support.	15–18, 46, 95, 103
5.1.2 All staff caring for babies within neonatal services are competent in neonatal resuscitation.	15–18, 46
5.1.3 Consultant obstetrician-led maternity services ensure that a professional who is competent in advanced newborn airway skills is immediately available (within five minutes).	15–17, 95, 103
5.1.4 All staff have undertaken training appropriate to their role (see 2.8.5) in: <ul style="list-style-type: none"> • supporting mothers to feed their infant appropriately and promote the use of breast milk and breastfeeding; • preparation of babies and families for discharge; • supporting families in acquiring the knowledge and skills they will need to care for their baby at home; • assessing developmental needs; • providing emotional and psychological support to families; • safeguarding children; and • supporting families during bereavement. 	36–38, 46, 91, 97, 99, 100
5.2 Nursing and midwifery	
5.2.1 Staff providing direct nursing care are competent to the level they need to fulfil their role and responsibilities, in line with the knowledge and skills framework. <ul style="list-style-type: none"> • All staff providing direct nursing care undertake a foundation^M education module in the care of newborn babies. • Registered nurses/midwives undertake accredited training in intensive care, high dependency care, special care, neonatal surgery^B and neonatal transfer (QIS)^D appropriate to their role and responsibilities. • Non-registered staff providing direct nursing care undertake accredited training appropriate to their role and responsibilities. 	89, 90, 101

5.2.2	All staff providing direct nursing care are supported to undertake continuing professional development of relevance to their role on the neonatal unit.	89
5.2.3	Nurses providing care for babies requiring surgery are competent in both neonatal and surgical care.	46
5.3	Medical staff	
5.3.1	Paediatricians	
5.3.1.1	Consultants who supervise neonatal care demonstrate continuing professional development in neonatal care as part of their job planning and appraisal process.	99
5.3.1.2	New consultant appointments to neonatal intensive care units will have a Certificate of Completion of Training (CCT) in Paediatrics (Neonatal Medicine) or equivalent.	87
5.3.2	Paediatric surgeons	
5.3.2.1	Specialist paediatric surgeons are appropriately skilled and trained to care for babies and must maintain continuing professional development to facilitate this.	46
5.3.2.2	New consultant specialist paediatric surgeon appointments hold a CCT in Paediatric Surgery or equivalent.	46
5.3.3	Anaesthetists	
5.3.3.1	Anaesthetists who are expected to undertake neonatal anaesthesia and resuscitation are appropriately trained as recommended by the Royal College of Anaesthetists' competency-based higher and advanced training documents (ST 5, 6, 7) or equivalent.	46, 47
5.3.3.2	Units providing neonatal surgery ^B have a consultant anaesthetist designated to provide anaesthesia for newborn babies available at all times. Each of these consultant anaesthetists has regular involvement in emergency and elective neonatal surgery. ^B	46, 47, 48
5.4	Transfer staff	
5.4.1	Staff undertaking transfers are competent to provide the level of care required, including training in aspects of equipment, safety and infection control.	90
5.5	Dieticians	
5.5.1	Dieticians providing neonatal care are experienced paediatric dieticians who, as a minimum, have completed the paediatric group of the British Dietetic Association Paediatric module 2 or have equivalent levels of knowledge and skills (see 2.5.1.1).	31–33, 45, 79

5.5.2	Specialist neonatal dieticians (see 5.5.1) must be experienced neonatal dieticians who are appropriately skilled and trained to provide network support in complex neonatal and surgical dietetics and have completed the British Dietetic Association Paediatric module 5 neonatal nutrition training course or have equivalent levels of knowledge and skills.	31–33, 45, 79
5.6	Speech and language therapists	
5.6.1	Speech and language therapists providing neonatal care undergo accredited post-registration training and are supported to undertake continuing professional development relevant to their role and responsibilities.	19, 142–144
5.7	Pharmacists	
5.7.1	Pharmacists providing neonatal care are experienced and as a minimum, have successfully completed the Centre of Postgraduate Pharmacy Education paediatric distance learning pack or have equivalent levels of skills and knowledge (see 2.6.1).	108

Audit indicators

Documentary evidence of:

- neonatal life support training records;
- records of audit of neonatal resuscitations;
- staff rotas;
- training plans and programmes; and
- records of training and qualifications.

Principle 6: Surgical services

Babies requiring surgical care should receive the same level of care, support, resource and specialist input as they would receive in a medical neonatal service.

Markers of good practice

	References
6.1 In the future specialist neonatal surgery ^B services are located in the same hospital site as specialist paediatric (including surgery and anaesthesia), maternity and neonatal intensive care services.	46, 53
6.2 Existing specialist surgical services which are not co-located with appropriate services (see 6.1) ensure that formal service agreements exist between these services. In such cases, trusts work towards centralising the care of babies requiring surgery onto a combined medical and surgical neonatal unit.	46, 53
6.3 Support services are readily accessible for advice, information and review as required including: <ul style="list-style-type: none"> • paediatric neurosurgery/neurology; • paediatric nephrology; • paediatric cardiology; • paediatric gastroenterology; • paediatric ear, nose and throat; and • clinical genetics. 	39, 84, 53
6.4 An emergency theatre is available at all times as close to the neonatal unit as possible. This theatre has equipment appropriate for very small babies and appropriately competent operating theatre staff are available. Future builds ensure this theatre is adjacent to the neonatal unit.	
6.5 The neonatal surgery ^B service has service agreements with each of its main referring units, which include details of the process for follow-up.	53
6.6 Units providing neonatal surgical services have systems in place for assessment and management of procedural and post-operative pain in babies.	58, 82, 83, 46, 102

An example of a surgical care pathway can be found at Appendix K.

Audit indicators

Documentary evidence of:

- service level agreements/contracts;
- protocols and procedures;
- staff rotas;
- job plans;
- pathways to access support services;
- theatre timetables;
- theatre staffing details;
- parental surveys;
- delayed and refused admissions of babies requiring surgery; and
- an annual report of surgical services activity.

Principle 7: Clinical governance

A network clinical governance framework will monitor the quality of care provided to babies and their families, enable continuous service improvement, encourage clinical excellence and innovation and ensure clear accountability while maintaining high levels of safety. Research is central to good patient care in neonatology. Changes in the NHS research infrastructure mean that increasing numbers of babies have the opportunity to be recruited to high-quality research studies.

Markers of good practice

		References
7.1	Each network agrees and regularly reviews a clinical quality indicators dashboard to monitor the quality outcomes of services within that network.	140
7.2	Managed neonatal networks hold a multi-disciplinary meeting involving members of all aspects of perinatal care and relevant specialist services at least annually in order to monitor trends in dashboard indicators (including mortality and morbidity).	139
7.3	The principles explained in principle 3 (Care of the baby and family experience) are met.	46, 52, 56, 95
7.4	Care pathways are in use covering antenatal diagnosis of neonatal conditions. These cover: <ul style="list-style-type: none"> • involvement of specialist teams relevant to the condition; • agreement of preferred place of delivery; • arrangements for transfer of care (if applicable); and • conditions for which delivery in a perinatal centre is expected. 	88, 95
7.5	Protocols are in use including: <ul style="list-style-type: none"> • postnatal diagnosis of neonatal conditions; • transfer and admission criteria to specialist services; • criteria for admission to a perinatal centre; and • process for obtaining consent. 	85, 93, 96, 138
7.6	Documented records of information provided to parents are made available.	95, 96
7.7	Clear, accurate and retrievable records of communications must be kept.	90, 95

7.8	Wherever neonatal care takes place the service has an agreed programme of audit of activity covering at least: <ul style="list-style-type: none"> • medical/surgical management; • healthcare-associated infections; • process of care; • outcomes of care; • deaths and major complications, including deaths following discharge from hospital; • adverse events; • pain management; and • transfer processes and activity. 	105
7.9	A network annual report is produced and all units providing services to the neonatal network submit information to inform this as defined in the commissioning framework.	39, 88
7.10	Induction ^N to the service, training and continuing professional development requirements are planned and structured for all transfer staff and records kept.	96
7.11	There is a lead clinician for audit and an annual audit plan is developed.	18, 88
7.12	All health professionals must have a clear understanding of the concept of risk assessment and management to improve the quality of care and safety for mothers and babies, while reducing preventable adverse clinical incidents.	18, 54, 94
7.13	Where an incident has occurred, every unit and network follows a clear mechanism for managing the situation including investigation, learning, communication and, where necessary, implementing changes to existing systems, training or staffing levels.	18, 54, 88, 94
7.14	There is documented evidence that appropriately trained and experienced professionals obtain informed consent for interventions and investigations.	18, 93, 96
7.15	Where appropriate, staff participate in any relevant confidential enquiries.	18, 96
7.16	Babies who, due to the nature of their condition, require endotracheal intubation and ventilation for longer than 48 hours, need to be cared for in a neonatal unit where staff have sole responsibility for the provision of neonatal care, supervised by a neonatologist.	39
7.17	Each unit is able to demonstrate a commitment to engage in research and interact with research networks by having appropriate links and mechanisms for engagement with NIHR and its networks.	

Audit indicators

Documentary evidence of:

- staff involvement in risk management; for example, percentage who have completed incident forms and had feedback (staff questionnaire);
- staff knowledge and availability of up-to-date clinical guidelines;
- compliance with guidelines (notes review, obstetric review meeting records);
- appropriate professionals obtaining consent (notes review);
- clinical audit with topics, action plans, re-audit and documentation to show improvement in outcome or care;
- confirmation of referrals to the Confidential Enquiry into Maternal and Child Health and National Patient Safety Agency;
- parent satisfaction surveys;
- number of NIHR portfolio studies open to recruitment on a unit compared with the number of studies that the unit could be expected to participate in;
- presence of relevant information in maternity notes and unit induction^N packs; and
- 80% of parents of babies eligible for recruitment to each study at a centre should be approached about that study and given appropriate verbal and written information.

Principle 8: Data requirements

High-quality data offer the opportunity to provide accurate information to all clinicians, researchers and patients to improve the outcomes of care.

Markers of good practice

	References
8.1 Data systems need to be compliant with the approved data standards and data collection as found in the NHS data model and dictionary.	51
8.2 All units and trusts ensure that they respond to changes in data collection requirements as notified by Data Set Change Notices (DSCNs).	51
8.3 The service provider shall ensure that they maintain a data set and collate qualitative and quantitative data in relation to key performance indicators.	117
8.4 All units will contribute to the Neonatal Critical Care Minimum Data Set (NCCMDS) as mandated for all NHS acute and foundation trusts.	86
8.5 A data collection system is in use to monitor workload and the results of practice throughout neonatal medical and surgery services.	46
8.6 All units have systems in place to enable contribution to network and national audit collections; examples include: <ul style="list-style-type: none"> • NNAP; • the BAPM neonatal data set; and • the Centre for Maternal and Child Enquiries (CMACE). 	86
8.7 A record is kept of all refused requests for admission to any neonatal service, together with the reasons for refusal.	
8.8 A documented process for data validation to ensure quality will be achieved for completeness and accuracy by systematic computerised checks and review of patient records.	
8.9 All services ensure that processes are in place to enable the collection of standardised two-year health outcomes for all babies who meet the criteria for these assessments.	118
8.10 Health outcomes at age two will be linked with neonatal information through approved data systems.	86
8.11 The service provider will comply with all reasonable requests for information and provide performance reporting information in the manner and format agreed with service commissioners.	121

Audit indicators

Documentary evidence of:

- records of refusal for admission;
- participation in national audits; and
- data collection systems and reporting.

Appendix D: Example of a neonatal clinical dashboard

Form for units to complete

Activity	Number
Number of live births	
IC cots days	
HDU cots days	
SCU cots days	
TC cots days	

Number of critical incidents reported	Number
Number of incidents graded 'no impact/minor'	
Number of incidents graded 'moderate'	
Number of incidents graded 'severe/major'	
Number of 'NEVER' incidents	
SUIs as reported to SHA	

Feedback	Number
Complaints (formal via PALS system)	
Concerns (resolved through informal discussions)	
Compliments	

Infection control	Number
MRSA isolates	
MRSA bacteraemia	
Clostridium difficile cases	
Other significant isolates	
Other significant bacteraemias	

Transfers	Number
Number of IUTs for clinical reasons	
Number of IUTs for non-clinical reasons	
<i>Ex utero</i> out of network for non-clinical reasons	
Delay in emergency transfer due to service unavailability	
Delayed back transfers – no service available (cot days)	
Delayed back transfers – no cots (cot days)	
Delayed back transfers – no staff (cot days)	

Refusals	Number
Number of <i>in utero</i> refusals from own network	
Number of <i>in utero</i> refusals from other networks	
Number of <i>ex utero</i> refusals from own network	
Number of <i>ex utero</i> refusals from other networks	
Surgical babies unable to be transferred/delayed transfer	

NLS training (3-year Resuscitation Council (UK) approved)	Number
WTE staff NLS trained	
WTE requiring NLS training	
% staff in date	
Number of NLS places required for 100% compliance	

Staffing	Number
% sickness rate	
% turnover	
% maternity leave	

Incidents classification

No impact/minor = no immediate actions, trend monitoring only.

Moderate = local review and actions at service level.

Severe/major = trust action and review.

Please note: An Excel version of this form and a network dashboard are available on the accompanying CD.

Appendix E: Examples of assessing proposed changes in terms of quality and productivity (quality, innovation, productivity and prevention)

Within each unit, network and region, quality and productivity assessments will need to be applied to proposed changes.

Two examples are shown below; one is articulated as a narrative and one as a table.

Transfer services

While the aim is to ensure that every unit in England has access to a service capable of transferring a baby between units 24 hours a day, we need to be mindful that *ex utero* transfers have an impact on safety and care.

There needs to be close liaison with maternity services within and across networks to try and find a balance for *in utero* and *ex utero* transfers. Equally, early access to maternity services will help to identify those women who may need to be delivered at an alternative unit, due to needs of the baby, which may help to reduce transfers. This may also have a positive effect on keeping the mother and baby within the same hospital.

By meeting the challenges of delivering babies in the right unit for their needs, we can release clinical staff from the often prolonged time taken in finding maternity beds, cots or both. If transfer services were to take on this role, this may release further clinical time when a transfer is necessary.

Example of applying the challenges for workforce (quality, innovation, productivity and prevention)

	WORKFORCE	Quality	Innovation	Productivity	Prevention
1	Good recruitment and retention				
	reduces cost of recruitment	✓		✓	
	reduces sickness levels and cost of agency and bank staff	✓		✓	✓
	reduces staff turnover costs to services and individuals	✓	✓	✓	✓
	enables career progression		✓	✓	
	enhances skill pool in networks	✓	✓	✓	
2	Competent, skilled workforce				
	enhances decision-making and pathway compliance	✓		✓	✓
	reduces delayed discharges and repatriation ^G	✓	✓	✓	✓
	avoids duplication			✓	
3	The right skill mix				
	the skills of the carer meet the needs of the baby	✓	✓	✓	✓
	ensures the right level of supervision	✓	✓	✓	✓
	strengthens clinical leadership	✓	✓		
4	Education and training				
	enhances clinical effectiveness	✓		✓	✓
	enhances team working through team training	✓	✓		✓
	avoids duplication		✓	✓	
	maximises economies of scale			✓	
	contributes to CNST standards and the overall trust compliance with standards linked to regulation and premiums	✓		✓	✓

Appendix F: Example contents of service specification



Neonatal care

SERVICE SPECIFICATION

[Insert name of trust]

**Neonatal intensive care unit/local neonatal unit/
special care unit**

[Insert date]

Produced by	
Version no.	
Date	
Review date	

(Full versions are available on the accompanying CD.)

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1. Introduction

- 1.1 Summary
- 1.2 Publications
- 1.3 Commissioning arrangements
- 1.4 The nature and scope of the service required
- 1.5 Detailed description of specialised service
- 1.6 Overall purpose and aims of the service
- 1.7 Geographical catchment area
- 1.8 National professional standards and related targets

2. Description of the service to be provided

- 2.1 Client groups covered
- 2.2 Referral/entry routes and eligibility
- 2.3 Discharge/exit routes
- 2.4 Interventions and specific treatments
- 2.5 Community and in-patient interface

3. Specific professional standards and objectives of the service

- 3.1 Evidence-based service objectives
- 3.2 Management, leadership and supervision
- 3.3 Local or national service principles and guidance
- 3.4 Assurance of safety, consistency and quality
- 3.5 Involvement of users and carers
- 3.6 Provider involvement in the review of services
- 3.7 Provider procedures for incidents, complaints and feedback

4. Monitoring arrangements

5. Scope of service specification

- 5.1 Roles of the service

6. Child and family focus

7. Specification of the service to be provided

- 7.1 Environment
- 7.2 Medical staffing
- 7.3 Nurse staffing
- 7.4 Support from other professionals
- 7.5 Access to specialised therapy services

8. Clinical governance

9. Exclusions

10. High-cost drugs (relevant to neonatal care)

Appendices**Page**

Appendix 1: Neonatal Critical Care Minimum Data Set

Appendix 2: Neonatal health outcome and performance measures

Appendix 3: Care pathway

Appendix 4: BAPM standards, 2001

Appendix G: Examples of good practice in engaging with parents and families in supporting babies while cared for by neonatal services and on discharge

Examples provided by Bliss

Developmental care ward rounds and developmental care plans

A number of units (e.g. the Jessop Wing, Sheffield) do weekly developmental care ward rounds. Those participating include the developmental care team (including the developmental care nurse specialist, an occupational therapist and a physiotherapist) and the parents.

The basis of discussions is the developmental care plan, which is drawn up for all babies born at less than 30 weeks or with a birth weight of less than 1.5kg.

Plans address issues such as developmental goals and include care-giving suggestions; these plans are always drawn up in conjunction with the parents.

Arrowe Park and Liverpool Women's Hospital also use developmental care plans and both have developed their own templates.

All agree that involving the parents in drawing up the plans is of the utmost importance.

Kangaroo care guidelines

Southern West Midlands Newborn Network has developed a set of guidelines for kangaroo care. These have been approved by their network and are now being used network-wide, thus ensuring some level of consistency of practice across the network.

The guidelines are being promoted by the network's developmental care co-ordinator and are helping to increase the amount of kangaroo care being done by all parents, but especially those with extremely premature/very low birth weight babies and those whose babies are on ventilation. Additionally, this is helping by providing evidence of the benefits of kangaroo care and of its safety, regardless of the size or condition of the baby.

Neonatal family support workers

Through consultation with parents Cheshire and Merseyside Network identified that parents, while very satisfied with the care their babies received, felt they suffered from a lack of psychological support, both while they were on the unit and after discharge.

The network, together with local children's centres is now piloting collaboration by:

- recognising that all families with a baby in neonatal care are vulnerable families;
- providing early intervention mechanisms by having Neonatal Family Support workers visible on each unit; and
- referring families to local children's centres where they can access a range of support (including emotional/psychological and financial support and signposting to other agencies).

Staffordshire, Shropshire and Black Country (SSBC) Newborn Network

Helping Hands

Prior to Helping Hands there was little support for parents of premature babies following discharge from the neonatal unit at the University Hospital of North Staffordshire.

A parent representative on the SSBC Newborn Network, herself a mother of a surviving twin born at 24 weeks, drew together a multi-agency team from health, education and play and learning to establish a much-needed service for parents and families; and Helping Hands was born.

Following discharge from the neonatal unit parents of babies less than 32 weeks or weighing below 1.25kg at birth, and other babies referred by a health professional, are invited to the monthly group.

While their babies play or sleep, parents can enjoy a 'cuppa' and some social time with other parents.

The team is on hand to give advice on all aspects of child development and parenting and can refer babies on appropriately for early intervention.

Each month the group invites a specialist (e.g. a baby masseur or stress counsellor) for added interest and support.

The multi-agency team is currently supporting this project around its other commitments and therefore by working smarter within existing resources a valuable support for families has been established at no additional cost.

Following positive feedback from parents and the team the group will continue to run after the first six meetings and this will inform the roll-out of similar groups across the Network.

Ashford and St Peter's Hospitals NHS Trust

Neonatal bereavement support sister

This role has been developed from scratch by the postholder through her own drive and determination, and has transformed the way the neonatal intensive care unit at St Peter's Hospital deals with death and bereavement. As a senior sister the post-holder supports families and staff following a neonatal death.

As well as counselling and supporting families, she provides advice and training for staff within the unit, student nurses, community health visitors and other staff, including ambulance drivers. The sister works closely with the chaplaincy team to make sure the right support is offered to families of different faiths and cultures, and introduced the policy that a nurse carries the baby to the mortuary in their arms, wrapped in a shawl, to ensure they receive the dignified and respectful ending they deserve.

She also organises wooden memory boxes, which are given to bereaved parents to keep their baby's mementoes.

"The unit is now much better equipped to deal with bereavement, helping parents take those first critical steps in their personal grieving process."

Frimley Park Hospital NHS Foundation Trust

Neonatal community outreach sister

A neonatal outreach service was established at Frimley Park Hospital two years ago, to facilitate the safe transition of the most vulnerable new babies from hospital to home. Support is provided to parents as they prepare for their babies to leave hospital; home visits are available to all families with premature babies. There is also a home oxygen service if required and these babies will be reviewed and visited regularly.

A vaccination database has also been established and a vaccination clinic is run throughout the winter months to reduce the risk of vulnerable babies catching bronchiolitis.

Resuscitation training evenings are offered, targeting training for parents of very premature babies and babies with long-term medical conditions.

Students and other members of staff are given the opportunity to go out on visits with the outreach sister and she works very closely with nursery nurses, health visitors and community midwives, doing joint visits when it is time to hand the families back to them for continuing care.

Southern West Midlands Newborn Network (SWMNN)

Parents are extremely proactive within the SWMNN, assisting the network in supporting parents and ensuring that the network stays focused on the real issues around care.

Parent representatives lead parents' meetings. These groups will continue to be held on a Saturday morning once a month and the network uses this forum to get views from several parents with different experiences on different units. The aim is to establish a second group in the south of the network.

Parent representatives attended the national parents' conference on user involvement in networks in London, and one parent was an invited speaker.

The network continues to invest in and utilise the parent representatives on the network in all their work. Some of the projects that parents have inputted to this year have included:

- attending transport team ambulance purchase tender meetings;
- meeting with commissioners in London;
- meeting with the surgical project manager to begin links between Birmingham Women's Hospital and Birmingham Children's Hospital surgical services;
- attending the Women's Council at Birmingham Women's Hospital; and
- attending the Bliss Parental Advisory Panel.

The monthly Bliss Birmingham Family Group, which is strongly supported by the SWMNN, continues, with new members joining all the time. A number of fathers regularly come to the group and find it fun and beneficial.

The biggest event so far this year for the parent representatives and Bliss Birmingham Group was the Family Day, which was supported by the network. The day involved a number of speakers giving advice and running Q&A sessions, a baby massage workshop and the opportunity to meet new families who have been through similar experiences. The day also offered parents the opportunity to find out about support locally once they have left the unit from members of the family group.

The work of the SWMNN parent representatives was also recently acknowledged by the innovations project officer at Bliss, who says:

"At the SWMNN they have trust in their parents and value the work they do. Parent reps have a high level of input which has come through the dedication of the entire network team. They have formed relationships beyond the remit of the role, giving parents more empowerment to their voice. It's great to see that these partnerships can be achieved in neonatal services."

Bliss family support services

A large majority of parents of premature babies are unprepared and ill-equipped to deal with the trauma of having their baby in neonatal care. The *Bliss Parent Information Guide* is available free of charge to all parents of sick or premature babies, and it can often be the first written information they receive on the issues surrounding prematurity. It covers a wide range of topics, from what the main equipment on a unit does to advice about breastfeeding. A printed version is available in English and Polish and the guide can also be downloaded from the Bliss website (www.bliss.org.uk) in French, Urdu, Portuguese and Bengali.

United Lincolnshire Hospitals NHS Trust

In Lincolnshire a service improvement project was commissioned and undertaken in collaboration with the Trent Perinatal Network, with the aim of improving neonatal care within Lincolnshire.

As a result of this project, a transitional care and home care service was set up in September 2008 to increase the capacity in the intensive care areas and improve the parent/patient experience.

The inception of these services has reduced transfers to other neonatal units within the network and ensured that babies are cared for closer to home unless they require specialist care. There has also been a noticeable reduction in re-admission rates to the paediatric wards due to feeding problems and weight loss following discharge.

Breastfeeding initiation and continuation of breastfeeding has increased. Parent and staff feedback for the service has been extremely positive and collaboration with the midwifery, paediatric and health visiting services has increased.

Intensive care capacity within the unit has increased, allowing admission of more premature infants than had previously been possible.

In total the team has so far saved 1,164 neonatal days and prevented unnecessary admissions to the neonatal unit.

Another positive effect has been to enable Lincoln Hospital to maintain its current status as a local neonatal unit within the network.

Salford Royal NHS Foundation Trust

Social ward round

There is a weekly meeting attended by a consultant, the unit social worker, parent counsellor, nursing staff and members of the outreach team. Social concerns for both in-patients and community patients are discussed. These include things such as housing concerns, travelling issues, family or financial worries. Our social worker is very active on our unit and has an invaluable role in supporting our families. We have also had a counsellor who has been important in providing emotional support.

Appendix H: Example of a strategy for recruitment and retention of nurses

A1.1 The profile of neonatal nursing as a specialty and career opportunity should be promoted by NHS Employers, NHS Careers and universities in collaboration with networks and service providers:

- a. The NMC should set standards for pre-registration neonatal education (theory and practice).
- b. All children's nursing and midwifery students should be exposed to neonatal care, with a proportion offered neonatal clinical placements during pre-registration education.
- c. Accurate advice regarding access to the specialty should be readily available and accessible.
- d. Campaigns promoting nursing as a career choice should include neonatal nursing.
- e. Recruitment and re-deployment initiatives should be advertised widely within the NHS, e.g. talent pools, NHE Employers, NHS Careers, NHS Jobs.

Action required by: NMC, NHS Employers, NHS trusts

A1.2 Services should provide induction^N and preceptorship^O programmes for all newly qualified and newly appointed neonatal nursing staff and should be tailored to the needs of the neonatal service and individual.

Action required by: NHS trusts

A1.3 Opportunities for staff rotation within the network should be available for both newly qualified and more experienced staff to enable them to gain different levels of experience and be exposed to varying levels of activity.

- a. The use of the electronic staff record should be used as an enabling tool to build a comprehensive portfolio of portable information about individuals' competencies and their training and development needs, which can be utilised to support local workforce planning and rotation programmes.
- b. Opportunities for rotation to children's services should be an option.
- c. Neonatal services should take account of HR initiatives that promote work/life balance and improve the quality of working life.

Action required by: NHS Skills/Employers, NHS trusts and networks

A1.4 A career progression framework should be developed across a network using the Agenda for Change Knowledge and Skills Framework supported by a training budget. Based on service requirements and individual development needs, this should include:

- a. support for continuing professional development (CPD);
- b. CPD, to include management and leadership; and
- c. personal development, review and appraisal systems.

Action required by: networks with NHS trusts

A1.5 PCT commissioners and service providers should work together to identify the workforce requirements in neonatal services.

Providers should:

- ensure that effective and efficient workforce and neonatal plans are developed; and
- work with commissioners to ensure that sufficient clinical placements are available to support the plans.

Commissioners should:

- ensure that workforce requirements are reflected within service specifications; and
- inform educational commissioning at a regional level that reflects the provider workforce plans.

SHAs should:

- link investment plans to workforce and neonatal planning;
- work with HEIs and providers to ensure that investment and workforce plans reflect service needs for neonatal services and are flexible enough to adapt to service demand;
- ensure that sufficient neonatal education and development programmes are commissioned to meet local workforce requirements; and
- ensure that sufficient clinical placements are available to support these programmes.

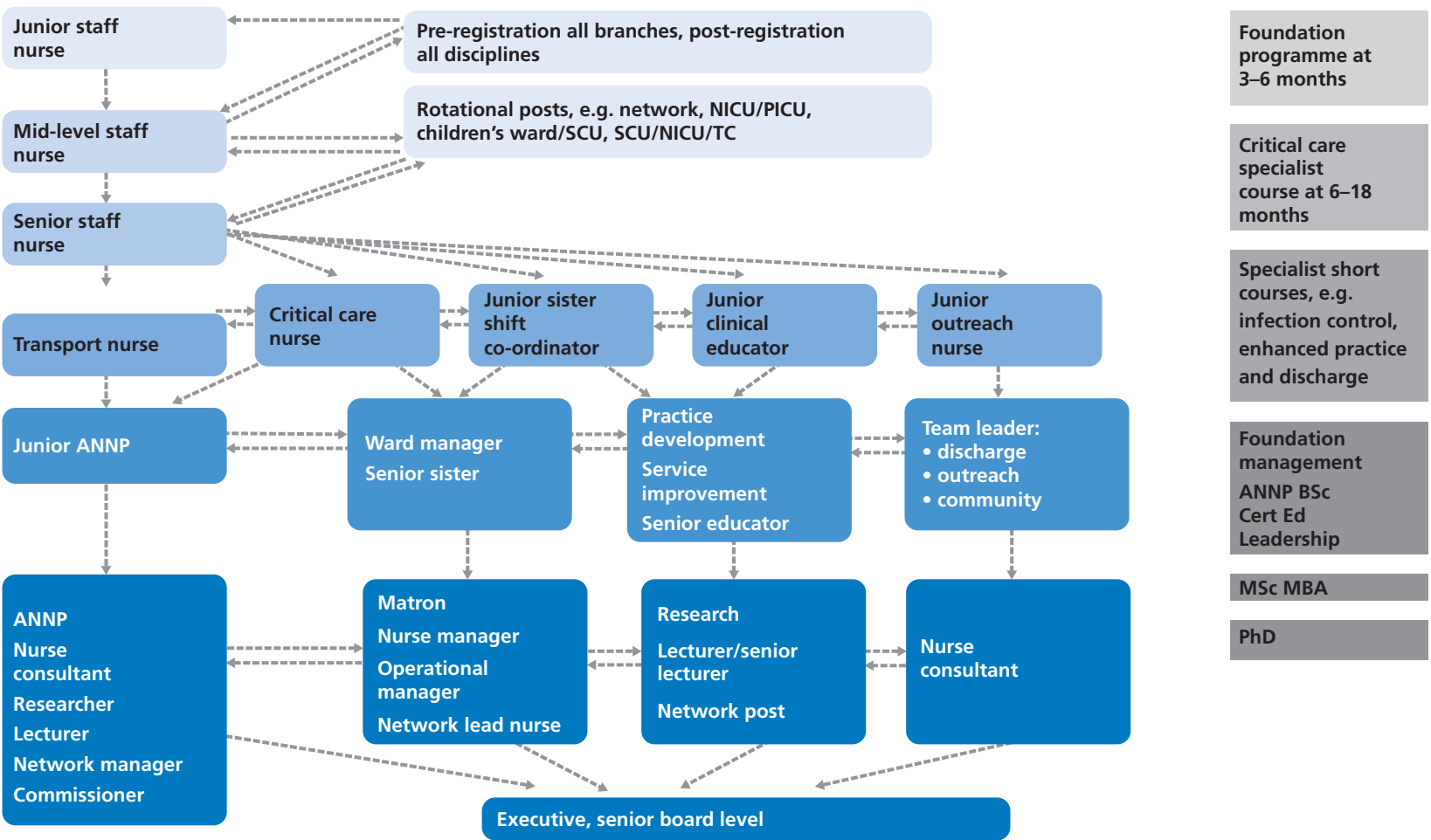
Neonatal workforce plans should take account of any additional impact of neonatal working, planning and delivery and support staff to undertake the necessary training and development.

Action required by: SHAs

A1.6 Neonatal workforce plans should be incorporated and agreed as part of the overall strategic commissioning plan for each network.

Action required by: networks, PCTs and SHAs

Appendix I: Example of neonatal nursing career pathway



Appendix J: Outline operational specification for a neonatal transfer service

1. Introduction

This document is an outline of the appropriate output specification to which a neonatal transfer service should operate. It should be read in conjunction with the principles for quality neonatal services which relate to transfer services (principles 1, 2, 3, 4, 5, 7 and 8). This specification should form a schedule to the acute and ambulance provider contracts, and should define geographical area and commissioners if different from the main contract.

2. Definition of 'transfer service'

A transfer service is concerned with organising and implementing the transfer of babies and/or mothers from within a defined geographical area (network). It encompasses both users and providers, and transfers may be *ex utero* or *in utero*.

3. Clinical service – specifications

a. Provider staffing

- The transfer service should have adequate numbers of staff with the appropriate skills to provide a safe service for babies. In addition, it should provide liaison with maternity services and perinatal centres to facilitate *in utero* transfers. Staff may be employed by various trusts across a defined area, but should all work towards the same skill set (principle 5.4.1).
- Where staff are provided from outside of the network transfer service, any service level agreement (SLA) or contract should stipulate that staff are trained to meet these standards.

b. User responsibilities

- Users of the transfer service should ensure that all referral requests are made in a timely manner.
- All referrals must be made with clinical and logistical information available.
- Users must acknowledge the priorities stipulated by the transfer service when continuing to deliver care.

4. *Ex utero* transfers

a. Classification of transfers (based on clinical and operational patient priority)*

- Unplanned (time-critical) transfer^k of babies from units in the network in order to access intensive care or specialist services, either to other units in the network or to units outside the network (e.g. another designated specialist centre).
- Unplanned (emergency/urgent) transfer of babies from units in the network in order to access intensive care or specialist services.
- Planned (next few days) transfer of babies from units in the network – for investigation and treatment or continuing intensive care, either to other units in the network or to units outside the network (e.g. another designated specialist centre).

- Planned (next few days) transfer of babies to local units (repatriation⁶) following intensive care, either to other units in the network or to units outside the network.**

*Note that the definition used is not the same as that used by the ambulance service to denote vehicle priority.

**If babies are resident out of the network area then the transfer service acts on behalf of another network.

b. Transfer service responsibility

The transfer service's responsibility is to ensure the provision of appropriately equipped and staffed transfers for babies born within the defined catchment area (network or other defined geographical area), in all categories of transfer.

- Time-critical transfers^k carry priority and take precedence over any other transfers. Clinical priority will determine the time factor of any other transfer.
- Planned moves for the purposes of intensive or augmented care will take precedence over any transfer back to local units (repatriation⁶).
- The transfer service is responsible for the transfer back into the network of babies whose mothers reside within the defined network catchment area.
- The transfer service will undertake transfers unless circumstances demand/ suggest an appropriate alternative, such as if:
 - the transfer service is already committed to other transfers and clinical need dictates that a move take place before the transfer service is able to respond; or
 - after discussion with the transfer service it is felt clinically and logistically appropriate for another service to undertake the transfer.

5. *In utero* transfers

a. Classification of transfers (based on clinical priority)*

- Unplanned acute transfers of mothers for specialist maternal or anticipated neonatal care which cannot be provided locally, either to other units in the network or to units outside the network (e.g. other designated tertiary centre).

*Note that the definition used is not the same as that used by the ambulance service to denote vehicle priority.

b. Transfer service responsibility

The transfer service's responsibility is to provide liaison to ensure that *in utero* transfers are directed to a unit with appropriate perinatal facilities.

6. Transfer service infrastructure

a. Service provision

- The service will operate or have cover arrangements to permit emergency transfers on a 24/7 basis for a defined catchment area.
- The ability to respond is subject to the other demands on the transfer service at the time, and should be prioritised by the transfer service based upon clinical need.

- Transfers should not compromise the standard of care provided to other babies. Where such an eventuality arises, alternative agencies should be found to undertake the transfer.
- Where the local transfer service is unable to undertake a transfer, clear documented arrangements should be in place for alternative agencies to support the transfer if requested.

b. Governance

Structures should be in place to provide ongoing training for those involved with transport, and to demonstrate relevant competencies for all grades of nursing and medical staff undertaking transfers.

- There should be clear mechanisms for quality assurance and incident review, including submission to agreed national bodies.
- Reports of transfer service activity should be available for review by the network or other agencies and produced on an annual or more frequent basis if required. These should conform to any agreed local or national format (principle 7.9).
- Mechanisms should exist to ensure that all stakeholders involved in transfer services have an active input into the delivery of the service (principle 4.1).

c. Safety and insurance

- The transfer service should have a documented policy for the safety of staff, patients and attendants during the transfer, including issues surrounding:
 - the use of seatbelts;
 - speed and use of lights and sirens;
 - the stowage of equipment;
 - patient restraints;
 - personal protective equipment; and
 - manual handling policies and practices.
- The transfer service needs to ensure that there is adequate provision of insurance for transfer service personnel against loss of life or injury.
- Arrangements for insurance of attendant persons needs to be identified and specified within the SLA or contract.

d. Organisational role

- The transfer service should be contacted in any situation where a transfer may be required.
- The transfer service is responsible for the organisation of any transfer should it be necessary.
- Transfer services need to have clear documented referral processes for all categories of transfer.

e. Communication

- The transfer service should have clearly determined and documented means of communication with other organisations and identified link personnel, the details of which should have been circulated to all involved agencies.

- There should be a single point of contact through which the transfer service can be contacted and activated at all times.
- Clear, accurate and retrievable records of communications must be kept, in accordance with any agreed standards.*

*The use of conference calling and voice recording should be considered best practice.

f. Remuneration

- Contracts should outline the responsibility for the remuneration of transfer services – particularly where transfers are likely to cross network, strategic health authority, national and/or international boundaries.

g. Equipment

- Equipment must be able to effectively support the transfer of neonates of varying maturity and dependency.
- Equipment should comply with and be maintained and cleaned to agreed, published standards.
- There should be documented arrangements for backup or reserve should primary systems fail.

h. Documentation

- Clinical observation and record-keeping during the transfer should be to the same standard as that provided at any other time (reflecting the transport environment).
- Documentation should include all components of any defined mandatory data set.

i. Information

- The transfer service should make information leaflets available for users (professionals and parents) of the service, with consideration given to multilingual output and the means of providing information.
- Information should be accessible to all users of the service, in order to permit early and effective communication with parents when a transfer is required.
- The transfer service should also make records available of what information has been provided.

j. Parents

- The transfer service should have a guideline for parental travel arrangements.
- Where possible, parents should be given the opportunity to accompany their baby.
- Where it is not possible for parents to accompany their baby, alternative transport arrangements will be made and parents should be offered the opportunity to see their baby prior to transfer.

k. Ambulance providers

- As part of the SLA or contract, the provision of staff and equipment will have agreed timescales against the defined categories (principles 4.7 and 4.8).

- Vehicles should be appropriately specified to allow emergency priority to be applied during outward transit and transfer if required. Drivers should be appropriately qualified for such journeys.
- Facilities should be in place to permit unhindered communication between the clinical team and the ambulance crew, and between the clinical team and their base unit.
- Clear and achievable strategies should be in place to provide for cases of vehicle failure. Ideally, facilities should be available so that the progress of the vehicle and clinical team can be tracked remotely by the base unit.
- The transport provider should operate to the standards laid down by the NHS for ambulance services (principle 4.8).

7. Equipment specifications

a. Baseline ambulance cabin specification

(Excludes detailed specification for specialised ambulance construction.)

Essential	Desirable
Ability to load and secure one incubator with ancillary equipment mounted on a stretcher platform compliant with standard ambulance fittings.	Ability to mount two incubators to the same standard. Ability to accommodate non-standard platforms to the same level of security.
	Transverse bulkhead mounting.
Mains inverter-based power supply able to support the incubator and all ancillary equipment (or adequate 12V DC-regulated power supply to support external mains inverter supplying the incubator and ancillary equipment) for the duration of the transportation. All standard connections to be available.	Backup in case of primary power source failure.
Provision of Schraeder valve connection gas supply. Air and oxygen sufficient for the duration of the trip and reserve (typically same again). Illustrative capacity: 2F sized oxygen, 1F sized air.	Potential for nitric oxide cylinder storage.
Adequate lighting for any nursing/medical care to be carried out.	Lighting controlled from rear cabin.
Adequate heating and ventilation to maintain cabin temperature.	Heating and ventilation controlled from rear cabin.
Seating provision for two attendants and one trainee in a suitable position to allow their observation of the incubator and access to compartment.	Further seating for extra trainee/attendant/parent.
Adequate safe stowage space for all ancillary equipment/bags, etc.	

Essential	Desirable
Available means of hands-free communication (e.g. a mobile phone) with ambulance crew or remote teams.	Video-based options.
<p>All fixation and construction secure to appropriate BSI/CEN standards:</p> <p>BS EN 13976–2:2003 Rescue systems. Transportation of incubators. System requirements.</p> <p>BSI BS EN 1865:2000 Specifications for stretchers and other patient-handling equipment used in road ambulances (CEN10).</p> <p>BSI EN 1789:2007 Medical vehicles and their equipment – road ambulances.</p> <p>MDD 92/43 (Medical Devices Directive) relating to construction standard.</p> <p>IEC 60101:1 Electrical standard for medical devices.</p>	

b. Baseline incubator specification

The incubator, platform and ancillary equipment must conform to current published standards:

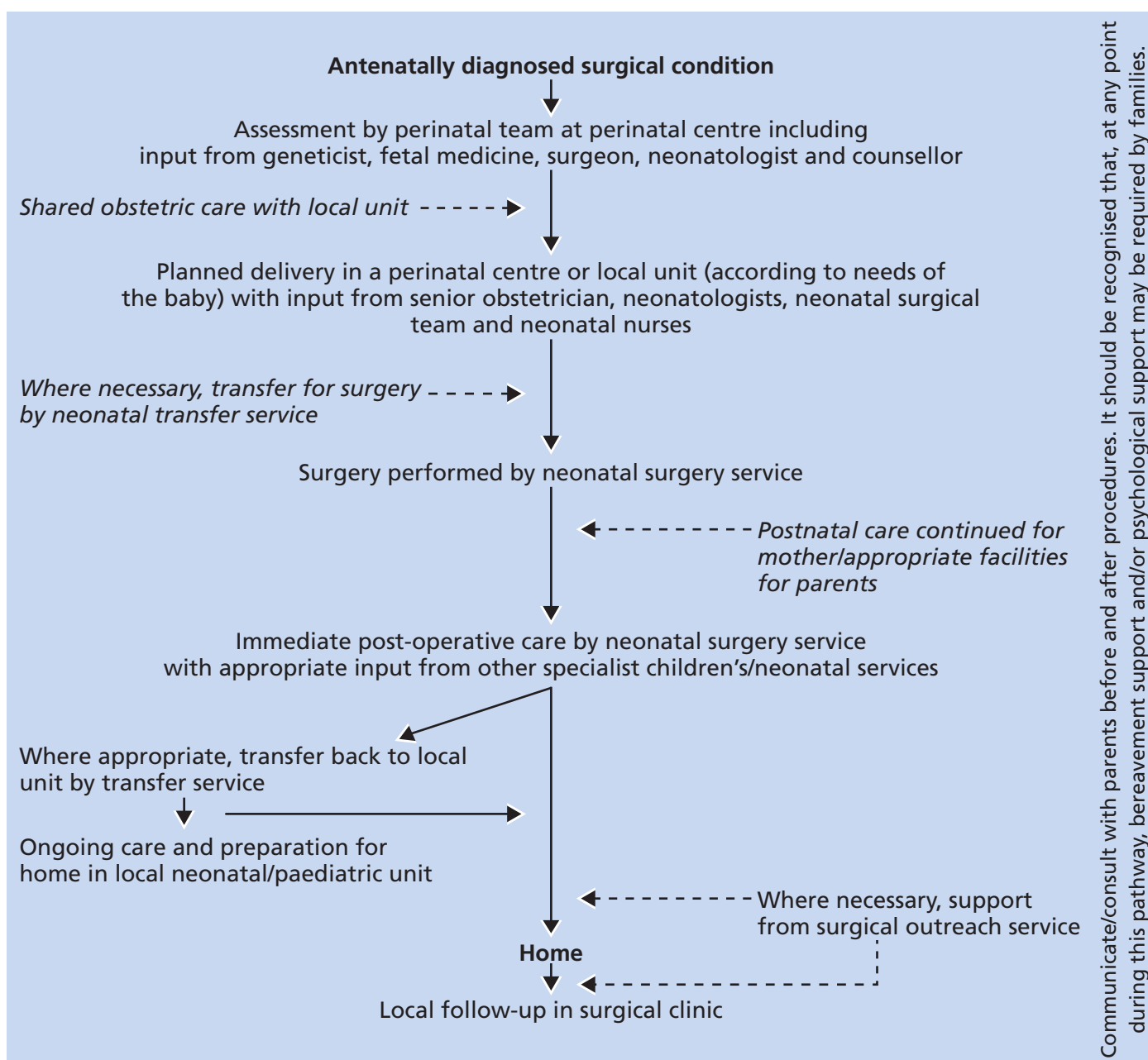
- BS EN 13976–2:2003
Rescue systems. Transportation of incubators. System requirements.
- BSI BS EN 1865:2000
Specifications for stretchers and other patient-handling equipment used in road ambulances (CEN10).
- BSI EN 1789:2007
Medical vehicles and their equipment – road ambulances.
- MDD 92/43 (Medical Devices Directive) relating to construction standard.
- IEC 60101:1
Electrical standard for medical devices.

c. *In utero* transfers

Recent standards have been published for the management of *in utero* transfers (British Association of Perinatal Medicine (2008) *Management of acute in-utero transfers: a framework for practice*).

Appendix K: Example of surgical care pathways

An antenatally diagnosed surgical condition



Notes:

1. In some cases, a surgical opinion only may be sought, without progression to an operative procedure.
2. Some women may choose to deliver in the perinatal centre, but this is not considered necessary for this pathway.
3. Some women may choose to deliver in their local obstetric unit, but this may impede mother/baby contact in the immediate postnatal period.
4. Some babies may go straight home from the neonatal surgical service and will not require care in their local neonatal/paediatric unit.
5. Some babies may be transferred to their local neonatal unit prior to discharge. This should not occur unless specialist neonatal surgery input (medical and nursing) is either no longer required or can be provided by an outreach service.

Further examples for local adaptation can be found on the accompanying CD.

Appendix L: Royal College of Obstetricians and Gynaecologists (RCOG) standards for maternity care (relating to the newborn)

STANDARD 13

Neonatal care and assessment

Rationale

Most babies are, and remain, healthy. The newborn infant physical examination is a key element of the child health surveillance programme. Early recognition and treatment of some problems can have a significant impact on the health of the child.

Standards

The personal child health record should be given to all women as soon as possible (if it has not been received antenatally) and its use explained.
All consultant-led obstetric units should have a named consultant paediatrician who has responsibility and a special interest in neonatology.
All examinations of the baby should be performed by a suitably qualified healthcare professional who has up-to-date training in neonatal examination techniques.
All newborn infants should have a complete clinical examination within 72 hours of birth. Appropriate recommendations by the National Screening Committee should be followed.
Both parents should be encouraged to be present at the first examination.
Prompt referral for further medical investigation or treatment should be provided through agreed clinical care pathways.
Professionals should be skilled in sharing concerns and choices with parents if any abnormal condition is diagnosed.
Wherever possible, separation of mothers and babies should be avoided by nursing babies who require additional care with appropriately trained staff on the postnatal wards.
Babies at high risk of hypoglycaemia (e.g. small for dates or born to women with diabetes) should be closely monitored in the postnatal period. Clear guidelines should be in place.
Guidelines should be in place to minimise the number of infants who require rewarming or avoidable admission to special care baby unit (SCBU).
The newborn blood spot screening (heel prick) tests for phenylketonuria, congenital hypothyroidism, cystic fibrosis, MCADD (medium chain acyl CoA dehydrogenase deficiency) should be offered and discussed with all women and their partners following the birth of the baby.

Audit indicators

Documentary evidence of:

- named consultant paediatrician with responsibility for neonatal care;
- implementation of policies to avoid separation of mothers and babies;
- guideline for management of babies at high risk of hypoglycaemia;
- audit of avoidable admissions to SCBU;
- percentage of women receiving personal child record antenatally;
- percentage of maternity staff who have had training in neonatal examination techniques;
- percentage of baby examinations carried out by midwives;
- percentage of babies who have received the newborn infant and physical examination within 72 hours of birth;
- percentage of recorded postnatal plan of care including details of care for the baby;
- percentage of bloodspot tests taken at 5–8 days; and
- percentage of blood spot tests taken that were of high enough quality for testing.

STANDARD 15

Supporting infant feeding

Rationale

Mothers need to be effectively supported in the feeding method of their choice and to be fully informed that breastfeeding has many positive long-term healthcare benefits and provides the optimal nutrition for the baby.

Standards

Maternity services should adhere to the principles and work toward the recommendations of UNICEF/WHO Baby Friendly ^(vii) status.
Attention should be paid to facilitating an environment that supports skin-to-skin contact where possible. Skin-to-skin should last until after the first breastfeed or until the mother chooses to end it. Babies should remain with their mothers unless there is a medical indication not to.
All healthcare providers (hospitals and community) should have a written breastfeeding policy that is communicated to all staff and parents.
Each provider should identify a lead healthcare professional responsible for implementing the breastfeeding policy.
Maternity services should promote breastfeeding and support the mother to initiate and sustain breastfeeding regardless of the location of care.
A woman who wishes to feed her baby formula milk should be taught how to make feeds using correct, measured quantities of formula, as based on the manufacturer's instructions, and how to cleanse and sterilise feeding bottles and teats and how to store formula milk.
Where postnatal care is provided in hospital, attention should be paid to facilitating an environment conducive to breastfeeding.

Mothers should have access to [nutritious] food and drink on demand.
Women who are taking medicines should receive specialist advice, based on best available evidence, in relation to breastfeeding.
Women should be provided with readily accessible information (including helpline numbers) and support in their chosen method of feeding, including access to peer support groups and voluntary organisations.

(vii) The Baby Friendly Initiative is a worldwide programme of the World Health Organization and United Nations Children's Fund.

Audit indicators

Documentary evidence of:

- audit against UNICEF/WHO Baby Friendly recommendations;
- written breastfeeding policy;
- appointment of a designated breastfeeding co-ordinator;
- annual percentage increase in women initiating breastfeeding;
- arrangements for 24-hour access to advice for support in infant feeding;
- re-admission rate of neonates with a diagnosis of dehydration or hypoglycaemia;
- percentage of mothers intending to breastfeed at birth, initiating breastfeeding and still breastfeeding at 6–8 weeks postpartum;
- percentage of women achieving skin-to-skin contact within the birthing environment; and
- percentage of women reporting good advice, help and support on infant feeding.

STANDARD 16

Care of babies requiring additional support

Rationale

Some babies may have or can develop problems, for which timely and appropriate treatment is essential. The effective use of networks will ensure the best possible outcome.

Standards

All newborn infants should have a clinical examination by a competent healthcare professional to detect preclinical abnormalities within the first week of life for full-term babies or prior to discharge home from neonatal care.
A documented, individualised postnatal plan of care should be developed with the woman, ideally in the antenatal period or as soon as possible after birth. This should take into account: <ul style="list-style-type: none">• relevant factors from the antenatal, intrapartum and immediate postnatal period;• details of the healthcare professionals involved in her care and that of her baby, including roles and contact details;• plans for the postnatal period including choice of place of care; and• This should be reviewed at each postnatal contact.

Any concerns expressed by the parents as to the well-being of the baby, or identified through clinical observations, should be assessed.
Health professionals should ensure that parents are offered newborn screening for their babies and that appropriate follow-up care is commissioned if necessary.
Particular support in breastfeeding should be provided for mothers who have had a multiple birth or have a premature or sick baby (see also RCOG Standard 15).
Care of the baby should ensure there is ongoing assessment, including recognition of group B streptococcal infection and jaundice.
Babies born to women with diabetes and others at high risk of hypoglycaemia (e.g. small for dates, preterm) should be closely monitored. They should remain with their mothers during this time unless there is a specific medical indication for admission to a neonatal intensive care unit.
Maternity services should have agreed arrangements for the transfer of a recently delivered mother and her newborn baby to a linked secondary or tertiary unit should problems arise.
Parents of babies with identifiable medical or physical problems should receive timely and appropriate care and support in an appropriate environment.

Audit indicators

Documentary evidence of:

- policies to avoid separation of mothers and babies;
- guidelines for postnatal care, including surveillance for infection and jaundice;
- guidelines for diagnosis and management of hypoglycaemia and sepsis in babies;
- admission rates to neonatal care for symptomatic hypoglycaemia;
- re-admission rates for poor feeding and dehydration;
- re-admission rates for hypernatraemic dehydration; and
- re-admission rates for neonatal jaundice.

STANDARD 17

Care of babies born prematurely

Rationale

Preterm birth is a distressing event for parents and families and can have lifelong consequences. Timely access to an appropriate level of neonatal care and expertise results in the best possible outcome.

Standards

Formal arrangements must exist for women and their babies to access a network of specialist services; commissioners and providers should collaborate to establish a strategy to ensure appropriate capacity.

Managed maternity and neonatal care networks should include effective arrangements for managing the prompt transfer and treatment of women and their babies experiencing problems or complications.

Because extremely premature births may take place rapidly when no senior members of the team are available, advance liaison should take place whenever possible between the consultant obstetrician, consultant paediatrician and senior midwife to ensure that there is prospective understanding on the management and on who will try to be present at the delivery.

Special care baby unit facilities should be available on site in all level II and level III consultant-led units and there should be a defined rapid access route to neonatal intensive care in all level II and level III consultant-led units.

All maternity services must have systems in place for identifying high-risk women, informing plans of care for women admitted with threatened preterm delivery, and for transporting preterm babies in a warmed transport incubator.

Prompt referral to an obstetrician with appropriate expertise should be made in all cases of threatened preterm labour to assess the need for a tocolytic and to avoid delay in the administration of corticosteroids.

Recommendations for the care of babies born at the threshold of viability, such as those produced by BAPM, should inform local guidelines.

Audit indicators

Documentary evidence of:

- number of inappropriate *in utero* or neonatal transfers, such as level III to level III transfers;
- number of transfers out of an agreed network;
- percentage of preterm babies (born at less than 35 weeks of gestation) whose mothers received antenatal steroids;
- percentage of babies born at less than 30 weeks of gestation whose temperature on admission was less than 36°C;
- percentage of babies born at less than 30 weeks of gestation who required artificial ventilation who were not offered surfactant; and
- percentage of babies born at 34–37 weeks of gestation who are admitted to the neonatal unit rather than being cared for in an appropriately staffed area of the maternity unit.

STANDARD 27

Maternity and neonatal networks

Rationale

Good maternity care relies upon inter-agency collaboration, with a full range of services for all pre-existing or developing health or social needs of the mother or baby. This requires links between health and social care and provision within maternity and neonatal care networks that have the capacity to meet demand.

Standards

Commissioners and providers must develop maternity and neonatal care networks. This is achieved through a multi-disciplinary and multi-agency approach requiring agreement with all those likely to be involved in providing care, including service managers and all relevant health and social care professionals and service user representatives.
Multi-disciplinary care, provided through well-understood clinical and local social services networks, should be available for all women with pre-existing medical, psychological or social problems that may require specialist advice in pregnancy.
Within a locally managed maternity network, there should be clear pathways of care and standardised protocols and guidelines, including rapid and effective communication between specialties, services and health professionals.
Units that do not have adult intensive care facilities, advanced imaging and cardiology on site must have protocols in place for the care of women with significant medical or obstetric illness to ensure that they are delivered in a unit that can provide these resources on site.
Maternity services should agree arrangements for both <i>in utero</i> transfer and the transfer of a recently delivered mother and/or her newborn baby to a linked secondary or tertiary unit.

Audit indicators

Documentary evidence of:

- the existence of a maternity and neonatal clinical network;
- multi-disciplinary input and appropriate referral in complex cases, such as a retrospective case note review;
- a record of all transfers and transfer requests;
- agreed pathways of care and standardised protocols and guidelines;
- records of time from decision to transfer to time transfer takes place and reasons for delay if appropriate;
- number of transfers out of an agreed network;
- number of inappropriate *in utero* or neonatal transfers, such as level III to level III transfers; and
- percentage of women transferred in labour or after delivery to a different service within or outside the network.

Appendix M: Definitions

			Page
A	Managed clinical network	Linked groups of health professionals and organisations from primary, secondary and tertiary care, working in a co-ordinated manner, unconstrained by existing professional and health board boundaries, to ensure equitable provision of high-quality, clinically effective services (reference 63).	14
B	Neonatal surgery	Neonatal surgery as defined within this document excludes cardiac and neurosurgery.	18
C	NMC registration	Nurse or midwife with a registration entry code of RM, RNA or RNC.	40
D	Qualified in specialty (QIS)	A course of specialised training undertaken after initial or post-registration training (applies to any staff member who undertakes additional focused accredited training).	40
E	Chest clearance	Chest clearance indicates that on some units chest physiotherapy may be carried out by nursing staff.	43
F	Senior clinician	ST4 and above, ANNP or nurse consultant.	47
G	Repatriation	Transfer of a baby to a unit which is suitable to their clinical condition and closer to home following a period of intensive care.	47
H	Universal services	Services available to all children to monitor and promote growth and development including screening, developmental assessment and immunisations.	35
I	Fibronectin screening	<p>Fibronectin is produced in the decidua (lining of the womb) in pregnancy. In the normal course of events it is present until 22 weeks' gestation. Prior to the onset of labour it is not detectable until 37 weeks' gestation. Its appearance at any other time is due to production in the decidua and may indicate preterm labour.</p> <p>Studies have shown reasonable positive predictive values, but importantly a 97% negative predictive value. Thus in the absence of detectable fetal fibronectin (fFN) in the vagina, < 1% of women will deliver within 14 days.</p>	51
J	Tocolysis	A drug given with the aim of delaying delivery in order to improve perinatal mortality and morbidity.	51

			Page
K	Time-critical transfer	One where any delay incurs significant health risks to the baby.	52
L	Manner of passage	Refers to the use of blue lights and sirens.	52
M	Foundation	Provision of basic experience, ideas and attitudes to provide 'grounding'.	53
N	Induction	A period of familiarisation with processes, policies, procedures and training related to the new job or work environment.	59
O	Preceptorship	Preceptorship is about providing support and guidance enabling new registrants to make the transition from student to accountable practitioner (NMC Circular 21/2006).	74

Appendix N: The Taskforce and Working Groups – membership

TASKFORCE	Job title	Organisation
Bruce Keogh (Chair)	NHS Medical Director	Department of Health (DH)
Christine Beasley	Chief Nursing Officer	DH
Sheila Shribman	National Clinical Director, Children, Young People and Maternity Services	DH
Andy Cole	Chief Executive	Bliss
Jim Easton	Chief Executive	NHS South Central
Jean Hawkins	Strategic Lead, Children and Families	NHS Yorkshire and the Humber
Andrea Holder	Strategy Manager, Children and Maternity Services	Care Quality Commission
Maria Howard	Network Manager	Cheshire and Merseyside Neonatal Network
Jacque Kemp	Director	London Perinatal Network
Ron Kerr	Chief Executive	Guy's and St Thomas' NHS Foundation Trust
Neil Marlow	Professor of Neonatal Medicine	Institute for Women's Health, University College London
Sally Miller	Head of Joint Children's Commissioning	NHS Hampshire and Hampshire County Council
Tina Pollard	Clinical Services Manager (Neonatal)	Cambridge University Hospitals NHS Foundation Trust
Richard Barker	Senior Policy Manager – Workforce	DH
Allison Binns	Neonatal Taskforce Project Manager	DH
Jean-Armand Clark	Critical Care PbR development manager	DH
Paul Hughes	Policy Officer, Maternity and the Newborn	DH
Liz Morgan	Professional Advisor, Children and Young People – Nursing	DH
Janet Perry	NHS Financial Controller	DH
Donna Sidonio	Head of Workforce Development	DH
Lyn Simpson	Director of NHS Operations	DH

TASKFORCE	Job title	Organisation
Jane Verity	Head of Maternity, First Years and Families	DH
Edward Wozniak	Professional Advisor, Paediatrics	DH
Tim Young	Deputy Director NHS Finance, Performance and Operations	DH

WORKFORCE	Job title	Organisation
Jean Hawkins (Chair)	Strategic Lead, Children and Families	NHS Yorkshire and the Humber
Jag Ahluwalia	Consultant Neonatologist	Cambridge University Hospitals NHS Foundation Trust
Richard Barker	Senior Policy Manager – Workforce	DH
Allison Binns	Neonatal Taskforce Project Manager	DH
Jane Emson	Workforce Development Specialist for Women and Children	NHS West Midlands
Alison Gibbs	Matron – Childrens Services, LCH and Lead Nurse	Trent Perinatal Network
Alan Gibson	Director Neonatal Services	Sheffield Teaching Hospital NHS Foundation Trust
	Lead Clinician	North Trent Neonatal Network
Brenda Hardcastle	Workforce	DH
Nina James	Neonatal Network Manager	Greater Manchester Children, Young People and Families' Network
Olga Kurtianyk	Lead Nurse	London Perinatal Network
David Milligan	Consultant Neonatal Paediatrician	Newcastle Hospitals NHS Foundation Trust
Liz Morgan	Professional Advisor, Children and Young People – Nursing	DH
Bob Phillipson	Campaigns and Policy Manager	Bliss
Maggie Redshaw	Social Scientist	National Perinatal Epidemiology Unit

WORKFORCE	Job title	Organisation
Sandie Skinner	Consultant Nurse (Neonates)	Winchester and Eastleigh Healthcare NHS Trust
	Lead Nurse	South Central (South) Newborn Network
Fiona Smith	Advisor in Children and Young People's Nursing	Royal College of Nursing
Teresa Warr	Head of Commissioning (Children's Specialised Services)	South Central Specialised Services Commissioning Group

WORKFORCE – SUB-GROUPS	Job title	Organisation
Claire Alexander	Matron, Neonatal Unit	St Thomas' Hospital, Guy's and St Thomas' NHS Foundation Trust
Annie Aloysius	Speech and Language Therapist	Queen Charlotte's and Chelsea Hospital
	Advisor	Royal College of Speech and Language Therapy
Jeanette Appleton	Neonatal Supervisor – Research	College of Occupational Therapy
Chris Ashworth	Neonatal Unit Education Team Lead	Central Manchester University Hospitals NHS Foundation Trust
Chris Beattie	Senior Nurse Neonatal Services	Doncaster and Bassetlaw NHS Foundation Trust
Adare Brady	Lead Clinical Specialist Physiotherapist (Neonates)	Association of Paediatric Chartered Physiotherapists
Tracey Budding	Neonatal Sister	Birmingham Women's NHS Foundation Trust
Fiona Cramb	Advanced Neonatal Nurse Practitioner	Poole Hospital Foundation Trust
Doreen Crawford	Senior Lecturer, Division of Family Centred Care	De Montfort University, Leicester
	Neonatal and Paediatric Intensive Care Forum	RCN
Michele Emery	Head of Neonatal Nursing	Birmingham Women's NHS Foundation Trust
Mike Hall	Consultant Neonatologist	Southampton University Hospitals NHS Trust

WORKFORCE – SUB-GROUPS	Job title	Organisation
Celia Harding	Speech and Language Therapist and Senior Lecturer	City University
	Advisor	Royal College of Speech and Language Therapy
Karen Hulley	NNU NMGH Unit Manager	Pennine Acute NHS Trust
Betty Hutchon	Consultant Neurodevelopmental Therapist, Head OT Royal Free Hospital	North Central London Perinatal Network
Gillian Kennedy	Speech and Language Therapist	University College Hospital, London
Nicola Kershaw	Senior Specialist Paediatric Physiotherapist	Central Manchester and Manchester Children's NHS Trust
Minesh Khashu	Lead Neonatologist	Poole Hospital NHS Foundation Trust
Lynne Radbone	Principal Paediatric Dietician	Cambridge University Hospital NHS Foundation Trust
David Shortland	Consultant Paediatrician	Poole Hospital NHS Foundation Trust
	Vice President (Health Services)	RCPCH
Katie Thompson	Developmental Care Lead	Southern West Midlands Newborn Network
Alison Wall	UK Professional Advisor for Specialist Community Public Health Nursing, Children and Young People	Nursing and Midwifery Council

SURGERY	Job title	Organisation
Jacque Kemp (Chair)	Director	London Perinatal Network
Jag Ahluwalia	Consultant Neonatologist	Cambridge University Hospital NHS Foundation Trust
Anne Aspin	Nurse Consultant – Neonatal Surgery	Yorkshire Neonatal Network/ Leeds Teaching Hospitals NHS Trust
Allison Binns	Neonatal Taskforce Project Manager	DH

SURGERY	Job title	Organisation
David Burge	Consultant Paediatric Surgeon	Southampton University Hospitals NHS Trust
Sandy Calvert	Consultant Neonatologist	St George's Hospital, London
Andy Cole	Chief Executive	Bliss
Melanie Drewett	Clinical Nurse Specialist – Neonatal surgery	Southampton University Hospitals NHS Trust
David Field	Professor of Neonatal Medicine	University of Leicester
Michael Hird	Consultant Neonatologist	Barts and The London NHS Trust
Roz Jones	Commissioning Manager	North West Specialised Commissioning Team
Anthony Lander	Consultant Paediatric Surgeon	Birmingham Children's Hospital NHS Foundation Trust
Kathy Wilkinson	Consultant Paediatric Anaesthetist	Norfolk and Norwich NHS Foundation Trust

TRANSFER	Job title	Organisation
Keith Douglas (Chair rtd)	World-Class Commissioning	DH and Hampshire PCT
Helen Medlock (Chair)	Head of Ambulance Commissioning	South East Coast Specialised Commissioning Group
Jane Abbott	Head of Programmes	Bliss
Ruth Ashmore	Director	East of England Perinatal Network
Allison Binns	Neonatal Taskforce Project Manager	DH
Kellie Blane	Associate Director	North East London Specialised Commissioning Group
Andrew Currie	Consultant Neonatologist	University Hospitals of Leicester NHS Trust
Alan Fenton	Consultant Neonatologist	Newcastle upon Tyne Hospitals NHS Foundation Trust
Stephen Hancock	Paediatric Critical Care Consultant	Sheffield Children's NHS Foundation Trust
Claire Harness	Lead nurse	Yorkshire Neonatal Network Transport Service
Jackie Harrison	Nurse Consultant	West Midlands Newborn Transport Service

TRANSFER	Job title	Organisation
Maria Howard	Network Manager	Cheshire and Merseyside Neonatal Network
Carol Jackson	Nurse Consultant, Neonatal Transport	Liverpool Women's Hospital NHS Foundation Trust
John Madar	Consultant Neonatologist	Derriford Hospital, Plymouth
Bill Martin	Consultant Obstetrician	Birmingham Women's NHS Foundation Trust
Tina Pollard	Neonatal Clinical Services Manager	Cambridge University Hospital NHS Foundation Trust
Bob Williams	Deputy Chief Executive/Director of Ops	North West Ambulance Service NHS Trust

DATA and COMMISSIONING	Job title	Organisation
Neil Marlow (Chair)	Professor of Neonatal Medicine	Institute for Women's Health, University College London
Ruth Ashmore (Chair-commissioning)	Director	East of England Perinatal Network
Bryan Gill (Chair – data)	Consultant Neonatologist	Leeds Teaching Hospitals NHS Trust
Vanessa Attrell	Perinatal Network Manager	South East Coast Specialised Commissioning Group
Allison Binns	Neonatal Taskforce Project Manager	DH
Diana Cargill	Senior Commissioner	South West Specialised Commissioning Group
Jean-Armand Clark	Critical Care PbR Development Manager	DH
Peder Clark	Campaigns and Policy Officer	Bliss
Kim Davis	Project Co-ordinator for the National Neonatal Audit Programme	Royal College of Paediatrics and Child Health
Sanjeev Deshpande	Consultant Neonatologist	Royal Shrewsbury Hospital, Shrewsbury
Ian De Vega	Senior Data Analyst	London Perinatal Networks
Peter Dixon	Deputy Head of Specialised Commissioning	North East Specialised Commissioning Team

DATA and COMMISSIONING	Job title	Organisation
Elizabeth Draper	Professor of Perinatal and Paediatric Epidemiology	University of Leicester
Julian Eason	Consultant Neonatologist	British Association of Perinatal Medicine (BAPM)
Catherine Hamilton	Senior Lecturer in Children's Nursing/RCN Paediatric and Neonatal Intensive Care Forum Committee Member	University of the West of England, Bristol/Royal College of Nursing
Gary Hartnoll	Consultant Neonatologist and service lead for NICU. Chair of Expert Working Group for HRG revision for Neonatal Critical Care	Chelsea and Westminster Hospital NHS Foundation Trust
Maria Howard	Network Manager	Cheshire and Merseyside Neonatal Network
Sally Miller	Head of Joint Children's Commissioning	NHS Hampshire and Hampshire County Council
Michelle Milner	Children's Network Manager	Yorkshire and the Humber
Neena Modi	Professor of Neonatal Medicine Chair, Neonatal Data Analysis Unit Chair, TRPG/SEND Two-year Outcomes Group	Imperial College Healthcare NHS Trust, London
	Vice President, Science and Research, RCPCH	RCPCH
Liz Morgan	Professional Advisor, Children and Young People – Nursing	DH
Ruth Moore	Network Manager/Lead Nurse	Staffordshire, Shropshire and Black Country Newborn Network
Joanne Poole	Children's lead	Yorkshire and the Humber Specialised Commissioning Group (South)
	Network Manager	North Trent Neonatal Network
Debra Teasdale	Head of Department, Health, Wellbeing and the Family	Canterbury Christ Church University

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