

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Specialist neonatal care

The Department of Health in England and NHS England has asked NICE to produce a guideline on specialist neonatal care.

The guideline will be developed using the methods and processes outlined in [Developing NICE guidelines: the manual](#).

1 Why the guideline is needed

Key facts and figures

In 2007, a [National Audit Office report](#) found that approximately 10% of babies in England need specialist neonatal care, either because they are born preterm or they have an illness or condition.

The [EPICure studies](#) found that, between 1995 and 2006, the number of babies born below 26 weeks of gestation and admitted to neonatal units increased by 30% in England. Over the same period, survival rates for babies born at 22–25 weeks of gestation and admitted for intensive care increased by 13%. In addition, a higher proportion of these babies survived without disability (particularly babies born at 24-25 weeks gestation). [International comparisons](#) show that the neonatal mortality rate varies significantly by country.

Respiratory disorders are among the most common problems in babies that need specialist neonatal care, and include:

- respiratory distress syndrome (hyaline membrane disease)
- transient tachypnoea of the newborn
- pneumonia
- meconium aspiration syndrome.

1 Respiratory distress syndrome is very common in preterm babies, while
2 transient tachypnoea of the newborn and meconium aspiration syndrome are
3 more common in full-term babies. High-quality respiratory care can reduce the
4 length of hospital stay and risk of long-term disability.

5 Bronchopulmonary dysplasia is particularly common in preterm babies who
6 have had assisted ventilation. Babies with bronchopulmonary dysplasia may
7 need prolonged specialist care and respiratory support.

8 **Current practice**

9 [NHS England](#) has found that the reasons for full-term admissions vary from
10 unit to unit and depend on commissioning practices, variation in admission
11 policies and clinical practices.

12 Respiratory support is used in different ways in different units, and it is unclear
13 what the best method is for providing mechanical ventilation and preventing
14 bronchopulmonary dysplasia. There are many other areas of uncertainty and
15 variation in how respiratory support is provided. There is also variation in other
16 areas of respiratory management, including how corticosteroids are used to
17 prevent and manage bronchopulmonary dysplasia.

18 **Policy, legislation, regulation and commissioning**

19 ***Legislation, regulation and guidance***

20 The Royal College of Paediatric and Child Health supports and endorses the
21 1998 [Guidelines for good practice in the management of neonatal respiratory
22 distress syndrome](#), from the British Association of Perinatal Medicine.

23 In 2016 the British Committee for Standards in Haematology published a
24 guideline on transfusion for fetuses, neonates and older children.

25 In 2016, the Care Quality Commission produced a review on [Identifying and
26 managing clinical risks in newborn babies and providing care for infants in the
27 community who need respiratory support](#).

1 **Commissioning**

2 Since 2013, neonatal critical care services have been managed within
3 Operational Delivery Networks. For healthy babies and babies with minor
4 problems, most care is provided by the hospital they are born in. Tertiary
5 centres will often be responsible for babies who have more complex problems
6 and need intensive care. This care, and the [service specifications](#) for Neonatal
7 Critical Care and Neonatal Intensive Care Transport, are within the scope of
8 the neonatal critical care Clinical Reference Group.

9

10 **2 Who the guideline is for**

11 This guideline is for:

- 12 • healthcare professionals in primary, secondary and tertiary care
- 13 • parents and carers of infants and children with these disorders
- 14 • commissioners and providers of specialist neonatal care services.

15 NICE guidelines cover health and care in England. Decisions on how they
16 apply in other UK countries are made by ministers in the [Welsh Government](#),
17 [Scottish Government](#), and [Northern Ireland Executive](#).

18 ***Equality considerations***

19 NICE has carried out [an equality impact assessment](#) during scoping. The
20 assessment:

- 21 • lists equality issues identified, and how they have been addressed
- 22 • explains why any groups are excluded from the scope.

23 The guideline will look at inequalities relating to parents and carers who do not
24 speak English as their first language.

1 **3 What the guideline will cover**

2 **3.1 *Who is the focus?***

3 **Groups that will be covered**

- 4 • Infants who need respiratory support (for example oxygen supplementation
5 or assisted ventilation) in hospital, beginning in the neonatal period.

- 6 • Infants and children who had respiratory support in the neonatal period and
7 who subsequently need home care for chronic lung disease (such as
8 bronchopulmonary dysplasia).

9 Specific consideration will be given to preterm babies and full-term babies
10 who need assisted ventilation.

11 **3.2 *Settings***

12 **Settings that will be covered**

13 All settings that provide NHS-funded healthcare to neonates, infants and
14 children.

15 **3.3 *Activities, services or aspects of care***

16 **Key areas that will be covered**

17 We will look at evidence in the areas below when developing the guideline,
18 but it may not be possible to make recommendations in all the areas.

19 Note that guideline recommendations for medicines will normally fall within
20 licensed indications; exceptionally, and only if clearly supported by evidence,
21 use outside a licensed indication may be recommended. The guideline will
22 assume that prescribers will use a medicine's summary of product
23 characteristics to inform decisions made with individual patients.

- 24 1. Early respiratory management (excluding resuscitation) after birth and
25 before arrival in the neonatal unit. This includes oxygen
26 supplementation and assisted ventilation, with:

- 1 • non-invasive techniques (for example high-flow therapy or
- 2 continuous positive airway pressure [CPAP]) **or**
- 3 • invasive techniques (for example conventional ventilation or high-
- 4 frequency oscillatory ventilation).
- 5 2. Diagnosing respiratory disorders, including:
- 6 • respiratory distress syndrome (hyaline membrane disease)
- 7 • pneumothorax
- 8 • transient tachypnoea of the newborn
- 9 • pneumonia
- 10 • meconium aspiration syndrome
- 11 • bronchopulmonary dysplasia.
- 12 3. Preventing and managing respiratory disorders on the neonatal unit,
- 13 including with:
- 14 • oxygen supplementation and assisted ventilation (including the
- 15 techniques specified in key area 1)
- 16 • medicines (for example, surfactants, corticosteroids, diuretics and
- 17 caffeine)
- 18 • treatment for patent ductus arteriosus
- 19 4. Supporting parents and carers, communicating with them and providing
- 20 them with information
- 21 5. Discharge planning for infants and children who have had respiratory
- 22 support in hospital (beginning in the neonatal period) and need
- 23 continued support for chronic lung disease.

24 **Areas that will not be covered**

- 25 1 Technical aspects of airway management, such as intubation techniques
- 26 2 Managing persistent pulmonary hypertension of the newborn
- 27 3 Neonatal feeding and nutrition
- 28 2 Sepsis
- 29 3 Neurological disorders
- 30 4 Gastrointestinal disorders
- 31 5 Congenital heart disease
- 32 6 Renal disorders

- 1 7 Hypoglycaemia and hyperglycaemia
2 8 Resuscitating newborn babies (this is covered in the NICE-accredited
3 Resuscitation Council UK guideline on the [Resuscitation and support of
4 transition of babies at birth](#))

5 **Related NICE guidance**

- 6 • This guideline will not cover early onset neonatal infection, because this is
7 covered in:
8 [Neonatal infection \(early onset\): antibiotics for prevention and treatment](#)
9 (2012) NICE guideline CG149
- 10 • This guideline will not cover jaundice, because this is covered in:
11 [Jaundice in newborn babies under 28 days](#) (2010) NICE guideline CG98
- 12 • This guideline will not cover diagnosis, management or support for preterm
13 labour and birth, because this is covered in:
14 [Preterm labour and birth](#) (2015) NICE guideline NG25
- 15 • [Intravenous fluid therapy in children and young people in hospital](#) (2015)
16 NICE guideline NG29
- 17 • This guideline will not cover gastro-oesophageal reflux disease, because
18 this is covered in:
19 [Gastro-oesophageal reflux disease in children and young people: diagnosis
20 and management](#) (2015) NICE guideline NG1
- 21 • This guideline will not cover developmental follow-up for preterm babies,
22 because this will be covered in:
23 [Developmental follow-up of pre-term babies](#) (publication expected August
24 2017) NICE guideline in development.

25 **NICE guidance about the experience of people using NHS services**

26 NICE has produced the following guidance on the experience of people using
27 the NHS. This guideline will not include additional recommendations on these
28 topics unless there are specific issues related to specialist neonatal care:

- 29 • [Patient experience in adult NHS services](#) (2012) NICE guideline CG138
30 • [Medicines adherence](#) (2009) NICE guideline CG76
31 • [Medicines optimisation](#) (2015) NICE guideline NG5

1 **3.4 Economic aspects**

2 We will take economic aspects into account when making recommendations.
3 We will develop an economic plan that states for each review question (or key
4 area in the scope) whether economic considerations are relevant, and if so
5 whether this is an area that should be prioritised for economic modelling and
6 analysis. We will review the economic evidence and carry out economic
7 analyses, using a NHS and personal social services perspective (PSS), as
8 appropriate.

9 **3.5 Key issues and questions**

10 While writing this scope, we have identified the following key issues, and key
11 questions related to them:

- 12 1 Early respiratory management after birth and before arrival in the
13 neonatal unit
- 14 1.1 What respiratory support is most effective for babies who need it at
15 birth and immediately after initial resuscitation?
16
- 17 2 Diagnosing respiratory disorders
- 18 2.1 What risk factors (such as gestational age) are associated with:
- 19 • respiratory distress syndrome (hyaline membrane disease)
20 • pneumothorax
21 • transient tachypnoea of the newborn
22 • pulmonary infection (pneumonia)
23 • meconium aspiration syndrome
24 • bronchopulmonary dysplasia.
- 25 2.2 Which investigations can distinguish these respiratory disorders from
26 each other?
27
- 28 3 Preventing and managing respiratory disorders on the neonatal unit
- 29 3.1 How should oxygen supplementation be regulated to ensure
30 effectiveness and safety?
31 3.2 What is the effectiveness and safety of the different assisted
32 ventilation techniques?

- 1 3.3 How should the environment (for example the temperature) be
2 effectively and safely regulated to prevent respiratory problems and
3 improve outcomes?
- 4 3.4 What is the effectiveness and safety of surfactant in preventing and
5 managing respiratory distress syndrome and preventing
6 bronchopulmonary dysplasia?
- 7 3.5 What is the effectiveness and safety of corticosteroids in managing
8 respiratory disorders and preventing bronchopulmonary dysplasia?
- 9 3.6 What is the effectiveness and safety of diuretics in managing
10 respiratory disorders and preventing bronchopulmonary dysplasia?
- 11 3.7 What is the effectiveness and safety of caffeine in managing
12 respiratory disorders and preventing bronchopulmonary dysplasia?
- 13 3.8 What is the effectiveness and safety (measured with respiratory
14 outcomes) of interventions for closing a patent ductus arteriosus?
15
- 16 4 Supporting parents and carers, communicating with them and providing
17 them with information
- 18 4.1 What support should be offered to the parents and carers of infants
19 who need respiratory support in hospital, beginning in the neonatal
20 period?
- 21 4.2 What support should be offered to parents and carers of infants and
22 children who have had respiratory support in the neonatal period, and
23 who need home care for chronic lung disease?
- 24 4.3 What information, and in what format, should be offered to the
25 parents and carers of infants who need respiratory support in hospital, in
26 the neonatal period?
- 27 4.4 What information, and in what format, should be offered to parents
28 and carers of infants and children who have had respiratory support in
29 the neonatal period, and who need home care for chronic lung disease?
30
- 31 5 Discharge planning
- 32 5.1 What is the most appropriate service model for infants and children
33 who needed respiratory support in hospital (beginning in the neonatal

1 period), and who continue to need such support including home care for
2 chronic lung disease?

3

4 The key questions may be used to develop more detailed review questions,
5 which guide the systematic review of the literature.

6 **3.6 Main outcomes**

7 The main outcomes that will be considered when searching for and assessing
8 the evidence are:

- 9 1 Mortality
- 10 2 Duration of respiratory support
- 11 3 Duration of hospital stay
- 12 4 Bronchopulmonary dysplasia
- 13 5 Retinopathy of prematurity
- 14 6 Necrotising enterocolitis
- 15 7 Periventricular leucomalacia and intraventricular haemorrhage
- 16 8 Cerebral palsy
- 17 9 Developmental delay
- 18 10 Quality of life
- 19 11 Parent and carer experience

20 **4 NICE quality standards and NICE Pathways**

21 **4.1 NICE quality standards**

22 **NICE quality standards that may need to be revised or updated when**
23 **this guideline is published**

- 24 • [Neonatal specialist care](#) (2010) NICE quality standard 4

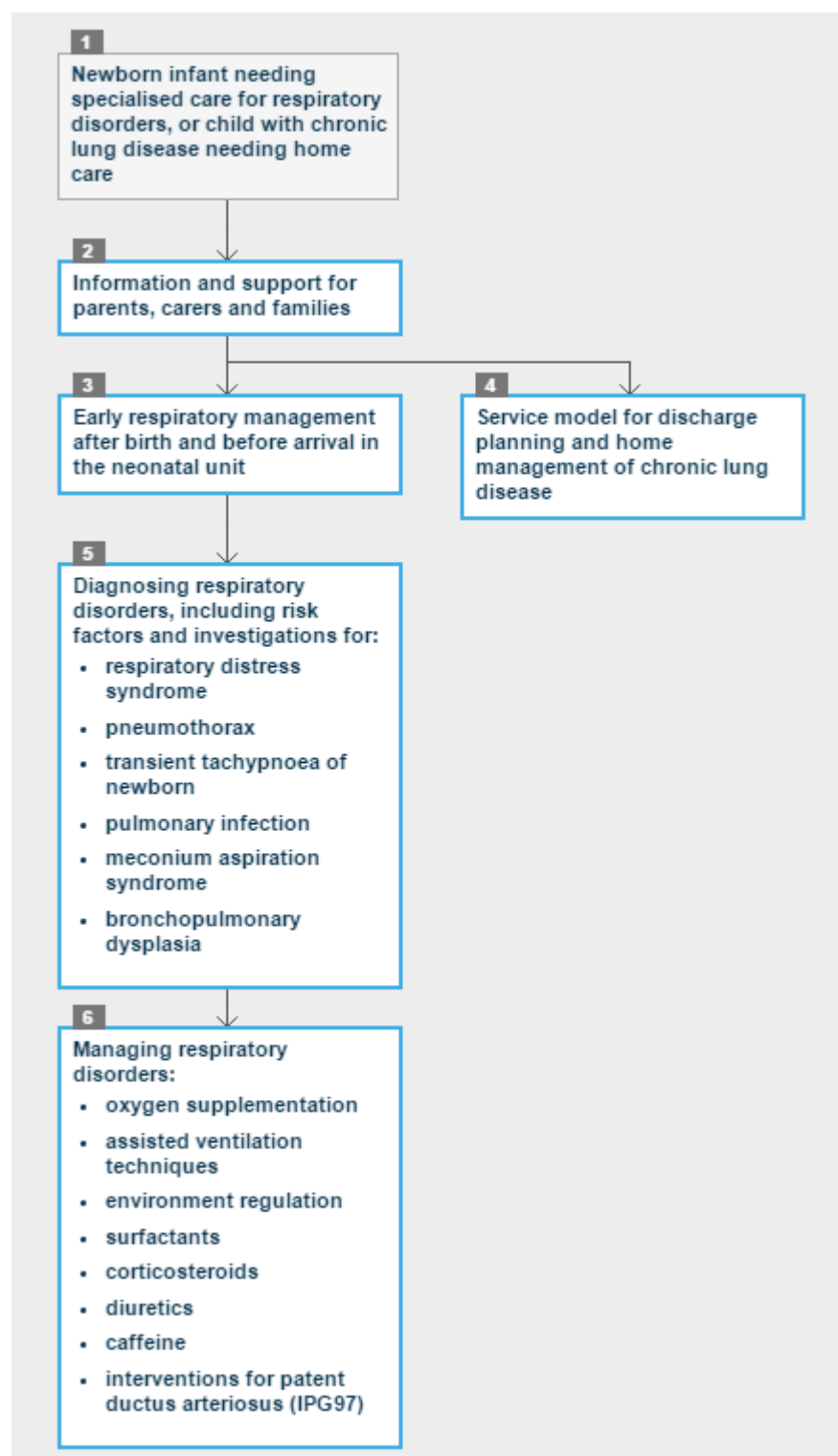
25 **4.2 NICE Pathways**

26 NICE Pathways bring together all related NICE guidance and associated
27 products on a topic in an interactive topic-based flow chart. When this
28 guideline is published, the recommendations will be added to NICE Pathways.

1 Other relevant NICE guidance will also be added to the NICE Pathway,
2 including:

- 3 • [Endovascular closure of patent ductus arteriosus](#) (2004) NICE
4 interventional procedures guidance 97

5 A draft pathway outline on specialist neonatal care, based on the draft scope,
6 is included below. It will be adapted and more detail added as the
7 recommendations are written during guideline development.



1

2 5 Further information

This is the draft scope for consultation with registered stakeholders. The consultation dates are 12 January to 9 February 2017.

The guideline is expected to be published in April 2019.

You can follow progress of the guideline.

Our website has information about how [NICE guidelines](#) are developed.

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