NICE National Institute for Health and Care Excellence

NICE quality standard

Neonatal parenteral nutrition

Quality standard

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This standard is based on NG154.

Quality statements

Statement 1 Preterm and term babies who are prescribed neonatal parenteral nutrition are started on a standardised bag.

Statement 2 Preterm and term babies who are prescribed neonatal parenteral nutrition receive it through bags, infusion sets and syringes that are protected from light.

Statement 3 Parents and carers of preterm and term babies receiving neonatal parenteral nutrition have regular opportunities to discuss their baby's nutritional care with healthcare professionals.

Statement 4 Preterm and term babies receiving neonatal parenteral nutrition are cared for by healthcare professionals who have access to a specialist nutritional multidisciplinary team.

Quality statement 1: Standardised bags

Quality statement

Preterm and term babies who are prescribed neonatal parenteral nutrition are started on a standardised bag.

Rationale

Once the decision is made that parenteral nutrition is needed, it should be started as soon as possible to reduce the risk of nutritional deficit developing, particularly in preterm babies. Using a standardised neonatal parental nutrition formulation (standardised bag) enables the early delivery of neonatal parenteral nutrition because it can always be available on neonatal units and easily accessed when needed. Using a standardised bag improves consistency in nutritional care, reduces variation in practice and reduces the risk of errors that can occur when making up individualised prescribed bags.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Structure

a) Evidence of local arrangements to ensure that standardised bags are available on neonatal units.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by provider organisations, for example, stock records and evidence of availability of standardised bags.

b) Evidence of written clinical protocols on the administration of standardised bags, including starting preterm and term babies on standardised bags, and the volume of neonatal parenteral nutrition that should be given.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by provider organisations, for example, copies of

written protocols.

Process

Proportion of preterm and term babies who are prescribed neonatal parenteral nutrition who are started on a standardised bag.

Numerator – the number in the denominator who are started on a standardised bag.

Denominator – the number of preterm and term babies who are prescribed neonatal parenteral nutrition.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example, from patient records.

Outcome

a) Number of neonatal parenteral nutrition prescribing errors.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example, from patient records and incident reporting.

b) Number of delays in starting neonatal parenteral nutrition.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example, from patient records.

What the quality statement means for different audiences

Service providers (such as neonatal and paediatric units and pharmacy services) ensure that standardised bags, containing the suitable levels of nutritional content as detailed in NICE's guideline on neonatal parenteral nutrition, are easily available for use on neonatal units to ensure neonatal parenteral nutrition can be safely and promptly administered. They ensure that staff use standardised bags for preterm and term babies who are prescribed neonatal parenteral nutrition, and are trained to administer them correctly, including the volume that should be given.

Healthcare professionals (such as neonatal and paediatric consultants and pharmacists) start neonatal parenteral nutrition using a standardised bag as soon as possible after the decision to give it is made.

Commissioners (such as clinical commissioning groups, integrated care systems and NHS England) ensure that they commission services in which standardised bags of neonatal parenteral nutrition are available on neonatal units and used when parenteral nutrition is started.

Newborn babies who need to be given nutrition directly into their bloodstream through a vein (intravenously) are given a type of nutrition that is suitable for most babies called a 'standardised bag'. Standardised bags can be kept on the neonatal unit, so they are ready to use quickly. This avoids delays in giving babies the nutrition they need.

Source guidance

Neonatal parenteral nutrition. NICE guideline NG154 (2020), recommendation 1.6.1

Definitions of terms used in this quality statement

Neonatal parenteral nutrition

Nutrition given directly into the bloodstream through a vein (intravenously) in newborn babies who cannot take adequate milk feeds because they are too small or very unwell. It includes nutrients such as amino acids, glucose, fat, electrolytes, vitamins and trace elements. The neonatal period is defined as up to 28 days after birth for babies born at term and 28 days after their due birth date for those born preterm. [Adapted from NICE's guideline on neonatal parenteral nutrition and expert opinion]

Standardised bags

Standardised bags contain pre-formulated aqueous and lipid parenteral nutrition solutions made to a set composition. They are ready to use and aim to meet the nutritional and clinical needs of a defined group of babies. Additional intravenous infusions are sometimes used to meet more individualised fluid or electrolyte requirements.

A choice of standardised bags is available to ensure that the nutritional and clinical needs of a defined group of babies can be met. [Adapted from NICE's guideline on neonatal parenteral nutrition, terms used in this guideline]

Quality statement 2: Light protection

Quality statement

Preterm and term babies who are prescribed neonatal parenteral nutrition receive it through bags, infusion sets and syringes that are protected from light.

Rationale

Parenteral nutrition solutions need to be protected from light to help prevent potentially harmful photo-degradation and oxidation. This ensures that the solution maintains its nutritional levels and is safe to use. It is important to protect the syringes and infusion sets during use as well as protecting the bags of parenteral nutrition solution at all times.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Structure

a) Evidence of local arrangements that ensure that light protection is available for bags, syringes and infusion sets of parenteral nutrition solutions.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example, procurement and stock records.

b) Evidence of local arrangements and written clinical protocols to ensure that units that give neonatal parenteral nutrition use light protection.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by provider organisations, for example, copies of neonatal parenteral nutrition delivery protocols and standard operating procedures.

Outcome

Number of light exposure incidents while giving neonatal parenteral nutrition.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example, from incident reporting and patient records.

What the quality statement means for different audiences

Service providers (such as neonatal and paediatric units and pharmacy services) ensure that light protection for bags, syringes and infusion sets of parenteral nutrition solutions is available, and that staff are trained to use it. This includes setting infusion pumps correctly depending on the line being used to deliver the parenteral nutrition. They ensure that neonatal parenteral nutrition bags are protected from light when they are stored and that the bags, syringes and infusion sets are protected when neonatal parenteral nutrition is being given.

Healthcare professionals (such as neonatal and paediatric consultants, nurses and pharmacists) are trained to use light protection for bags, syringes and infusion sets of parenteral nutrition solutions, including setting infusion pumps correctly depending on the line being used. They ensure that the neonatal parenteral nutrition bags are protected from light at all times and the syringes and infusion sets are protected when neonatal parenteral nutrition is being given.

Commissioners (such as clinical commissioning groups, integrated care systems and NHS England) ensure that they commission services that have systems in place to administer neonatal parenteral nutrition safely.

Newborn babies who need to be given nutrition directly into their bloodstream through a vein (intravenously) are given nutrition that is protected from light. Protecting the bags of nutrition and the tubes and syringes used to give it from light helps to ensure that the nutritional levels are maintained, and it is safe to use.

Source guidance

Neonatal parenteral nutrition. NICE guideline NG154 (2020), recommendation 1.2.3

Definitions of terms used in this quality statement

Neonatal parenteral nutrition

Nutrition given directly into the bloodstream through a vein (intravenously) in newborn babies who cannot take adequate milk feeds because they are too small or very unwell. It includes nutrients such as amino acids, glucose, fat, electrolytes, vitamins and trace elements. The neonatal period is defined as up to 28 days after birth for babies born at term and 28 days after their due birth date for those born preterm. [Adapted from NICE's guideline on neonatal parenteral nutrition and expert opinion]

Quality statement 3: Involving parents and carers

Quality statement

Parents and carers of preterm and term babies receiving neonatal parenteral nutrition have regular opportunities to discuss their baby's nutritional care with healthcare professionals.

Rationale

It can be challenging and stressful for parents and carers to have a baby being cared for in a neonatal or paediatric unit. Nutritional care is often not discussed when it is first given because the focus is on the baby's underlying condition. However, it is important that parents and carers are given regular opportunities to discuss their baby's nutritional care with their healthcare professionals. This will help to ensure that they understand the nutritional care their baby is receiving.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Structure

Evidence of local arrangements to ensure that parents and carers of preterm and term babies receiving neonatal parenteral nutrition have regular opportunities to discuss their baby's nutritional care with their healthcare professionals.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally, for example, written protocols for communication about nutritional care with parents on the neonatal and paediatric unit (which may be used during ward rounds or appointments) or specific time allocated in healthcare professionals' schedules for speaking with parents and carers about nutritional care.

Outcome

Proportion of parents and carers of preterm and term babies who received neonatal parenteral

nutrition who are satisfied with communication with healthcare professionals about the nutritional care received.

Numerator – the number in the denominator who are satisfied with communication with healthcare professionals about the nutritional care received.

Denominator – the number of parents and carers of preterm and term babies who received neonatal parenteral nutrition.

Data source: Data can be collected from information recorded locally, for example, from patient records and from local surveys of parent and carer experience. For babies treated in neonatal units, the National Neonatal Audit Programme collects data on parental consultation within 24 hours of admission and parental presence at a consultant ward round.

What the quality statement means for different audiences

Service providers (neonatal and paediatric units) ensure that systems are in place for parents and carers to have regular opportunities to discuss their baby's nutritional care with the healthcare professionals caring for them. This can include parents and carers joining ward rounds, having time to have meaningful discussions about nutrition with their baby's consultant and their neonatal or paediatric nurses, and knowing when staff members will be available to speak to them. Healthcare professionals' schedules should have specific times allocated to allow them to arrange opportunities to speak with parents and carers. Evidence-based written information on parenteral nutrition and enteral feeding is also given to parents and carers for them to read through and discuss with their healthcare professionals at an agreed time.

Healthcare professionals (such as neonatal and paediatric consultants, nurses, dietitians and pharmacists) have allocated time to speak with parents and carers of preterm and term babies receiving neonatal parenteral nutrition. They understand that having a baby who is receiving neonatal parenteral nutrition can be distressing for parents and are mindful of this when discussing the baby's nutritional care with them. They give clear explanations of the nutritional care the baby is receiving and when enteral feeding may be able to begin, and give parents and carers opportunities to ask questions. They also give parents and carers written information on parenteral nutrition and enteral feeding that they can read through and discuss with them at an agreed time.

Commissioners (such as clinical commissioning groups, integrated care systems and NHS England) ensure that they commission services in which parents and carers of preterm and term babies

receiving parenteral nutrition have regular opportunities to discuss their baby's nutritional care with healthcare professionals. They ensure that they commission services in which healthcare professionals have specific time allocated to allow them to arrange times to speak with parents and carers about their baby's nutritional care.

Parents and carers of newborn babies who are being given nutrition directly into their bloodstream through a vein (intravenously) have regular opportunities to talk about their baby's nutritional care with the healthcare professionals caring for their baby. They are given written information on parenteral nutrition and feeding that they can discuss with their healthcare professional, and they are able to ask any questions and discuss any concerns they have about their baby's nutritional care.

Source guidance

Neonatal parenteral nutrition. NICE guideline NG154 (2020), recommendations 1.10.2 and 1.10.4

Definitions of terms used in this quality statement

Neonatal parenteral nutrition

Nutrition given directly into the bloodstream through a vein (intravenously) in newborn babies who cannot take adequate milk feeds because they are too small or very unwell. It includes nutrients such as amino acids, glucose, fat, electrolytes, vitamins and trace elements. The neonatal period is defined as up to 28 days after birth for babies born at term and 28 days after their due birth date for those born preterm. [Adapted from NICE's guideline on neonatal parenteral nutrition and expert opinion]

Discussions about nutritional care

Topics to discuss with parents or carers include:

- why their baby needs parenteral nutrition
- what parenteral nutrition involves
- the importance of good nutrition for newborn babies
- how long their baby is likely to need parenteral nutrition for

- common concerns, for example, central venous catheter placement, the risk of catheter-related infections, taking blood samples, and whether they can hold and care for their baby
- simultaneous enteral feeding, unless this is not possible
- how their baby's progress will be monitored
- how their baby will be weaned off parenteral nutrition.

[NICE's guideline on neonatal parenteral nutrition, recommendation 1.10.2]

Equality and diversity considerations

Parents and carers should be provided with information about the nutritional care their baby is receiving that they can easily read and understand themselves, or with support, so they can communicate effectively with the healthcare professionals caring for their baby. Information should be in a format that suits their needs and preferences. It should be accessible to people who do not speak or read English, and it should be culturally appropriate and age appropriate. Parents and carers should have access to an interpreter or advocate if needed.

For parents and carers with additional needs related to a disability, impairment or sensory loss, information should be provided as set out in NHS England's Accessible Information Standard or the equivalent standards for the devolved nations.

Quality statement 4: Specialist nutritional multidisciplinary team

Quality statement

Preterm and term babies receiving neonatal parenteral nutrition are cared for by healthcare professionals who have access to a specialist nutritional multidisciplinary team.

Rationale

Access to a specialist nutritional multidisciplinary team helps to ensure a safe and effective service. The multidisciplinary team can be based locally or within a clinical network. It does not need to discuss or review all preterm and term babies receiving neonatal parenteral nutrition, but it can provide advice and support for healthcare professionals, for example, by ensuring there are protocols for starting and stopping neonatal parenteral nutrition and by assisting with complex cases.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Structure

a) Evidence of local arrangements to ensure a specialist nutritional multidisciplinary team is in place, either within the trust or the clinical network.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally, for example, service level agreements and records of meetings.

b) Evidence of local arrangements to ensure that the specialist nutritional multidisciplinary team is responsible for governance around delivery of neonatal parenteral nutrition and provides support for healthcare professionals delivering it.

Data source: No routinely collected national data for this measure has been identified. Data can be collected from information recorded locally, for example, clinical protocols.

Process

Proportion of neonatal units that deliver parenteral nutrition and have access to a specialist nutritional multidisciplinary team.

Numerator – the number in the denominator that have access to a specialist nutritional multidisciplinary team.

Denominator – the number of neonatal units that deliver parenteral nutrition.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example, from local service agreements.

What the quality statement means for different audiences

Service providers (such as neonatal clinical networks and neonatal and paediatric units) ensure that healthcare professionals caring for babies receiving neonatal parenteral nutrition have easy access to a specialist nutritional multidisciplinary team. This can be a locally based multidisciplinary team or part of the neonatal clinical network.

Healthcare professionals (such as neonatal and paediatric consultants, nurses, dietitians and pharmacists) access a specialist nutritional multidisciplinary team if they need clinical advice, assistance with treatment planning or are treating a baby with complex needs.

Commissioners (such as clinical commissioning groups, integrated care systems and NHS England) ensure that they commission services that have or have access to specialist nutritional multidisciplinary teams and ensure they are available to healthcare professionals in neonatal and paediatric units when needed. The multidisciplinary teams are responsible for governance and provide support for healthcare professionals delivering neonatal parenteral nutrition.

Newborn babies who are being given nutrition directly into their bloodstream through a vein (intravenously) are cared for by healthcare professionals who can easily access other specialists in neonatal nutrition for advice and support.

Source guidance

Neonatal parenteral nutrition. NICE guideline NG154 (2020), recommendation 1.9.1

Definitions of terms used in this quality statement

Neonatal parenteral nutrition

Nutrition given directly into the bloodstream through a vein (intravenously) in newborn babies who cannot take adequate milk feeds because they are too small or very unwell. It includes nutrients such as amino acids, glucose, fat, electrolytes, vitamins and trace elements. The neonatal period is defined as up to 28 days after birth for babies born at term and 28 days after their due birth date for those born preterm. [Adapted from NICE's guideline on neonatal parenteral nutrition and expert opinion]

Specialist nutritional multidisciplinary team

The specialist nutritional multidisciplinary team should include a consultant neonatologist or paediatrician with a special interest in neonatology, a neonatal pharmacist and a neonatal dietitian, and should have access to the following:

- a neonatal nurse
- a paediatric gastroenterologist
- an expert in clinical biochemistry.

It should be responsible for:

- governance, including:
  - agreeing policies and protocols for the neonatal parenteral nutrition service, including when neonatal parenteral nutrition should be discontinued
  - ensuring that policies and protocols for neonatal parenteral nutrition are followed and audited
  - monitoring clinical outcomes

- supporting delivery of parenteral nutrition, including:
  - providing clinical advice
  - providing enhanced multidisciplinary team input for preterm and term babies with complex needs, for example, babies with short bowel syndrome who may need long-term parenteral nutrition.

The specialist nutritional multidisciplinary team can be based locally or within a clinical network. It does not need to discuss or review all preterm and term babies receiving neonatal parenteral nutrition. [Adapted from NICE's guideline on neonatal parenteral nutrition, recommendations 1.9.1, 1.9.2 and 1.9.3, and expert opinion]

About this quality standard

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

Expected levels of achievement for quality measures are not specified. Quality standards are intended to drive up the quality of care, and so achievement levels of 100% should be aspired to (or 0% if the quality statement states that something should not be done). However, this may not always be appropriate in practice. Taking account of safety, shared decision-making, choice and professional judgement, desired levels of achievement should be defined locally.

Information about how NICE quality standards are developed is available from the NICE website.

See our webpage on quality standard advisory committees for details of standing committee 2 members who advised on this quality standard. Information about the topic experts invited to join the standing members is available from the webpage for this quality standard.

NICE has produced a quality standard service improvement template to help providers make an initial assessment of their service compared with a selection of quality statements. This tool is updated monthly to include new quality standards.

NICE guidance and quality standards apply in England and Wales. Decisions on how they apply in Scotland and Northern Ireland are made by the Scottish government and Northern Ireland Executive. NICE quality standards may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Resource impact

NICE quality standards should be achievable by local services. The potential resource impact is considered by the quality standards advisory committee, drawing on resource impact work for the source guidance. Organisations are encouraged to use the resource impact statement for the NICE guideline on neonatal parenteral nutrition to help estimate local costs.

Diversity, equality and language

Equality issues were considered during development and equality assessments for this quality standard are available. Any specific issues identified during development of the quality statements are highlighted in each statement.

Commissioners and providers should aim to achieve the quality standard in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.

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Endorsing organisation

This quality standard has been endorsed by NHS England, as required by the Health and Social Care Act (2012)