NICE National Institute for Health and Care Excellence

NICE quality standard

Blood transfusion

Quality standard
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www.nice.org.uk/guidance/qs138

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This standard is based on NG24.

This standard should be read in conjunction with QS166.

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NICE has developed guidance and a quality standard on patient experience in adult NHS services, which should be considered alongside these quality statements.

A full list of NICE quality standards is available from the quality standards topic library.

Quality statement 1: Iron supplementation

Quality statement

People with iron-deficiency anaemia who are having surgery are offered iron supplementation before and after surgery.

Rationale

Preoperative anaemia is associated with increased postoperative morbidity and mortality, and with increased transfusion needs. Treating iron deficiency with iron supplements can reduce the need for blood transfusion. This avoids serious risks associated with blood transfusion, for example infection, fluid overload and incorrect blood transfusions being given. It may also reduce the length of hospital stays and the cost to the NHS. Depending on the circumstances, the cause of the iron deficiency should be investigated before or after surgery.

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.

Process

a) Proportion of people with iron-deficiency anaemia who are having surgery and receive iron supplementation before surgery.

Numerator – the number in the denominator who receive iron supplementation before surgery.

Denominator – the number of people with iron-deficiency anaemia who are having surgery.

Data source:NHS Blood and Transplant national comparative audit of NICE quality standard QS138.

b) Proportion of people with pre-operative iron-deficiency anaemia who receive iron supplementation after surgery.

Numerator – the number in the denominator who receive iron supplementation.

Denominator – the number of people with pre-operative iron-deficiency anaemia who have had surgery.

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

Outcome

Blood transfusion rates associated with surgery.

Data source: 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 primary and secondary care services) ensure that systems are in place to offer iron supplementation before and after surgery to people with iron-deficiency anaemia.

Healthcare professionals (such as doctors, nurses and blood transfusion specialists) offer iron supplementation before and after surgery to people with iron-deficiency anaemia.

Commissioners commission services that offer iron supplementation before and after surgery for people with iron-deficiency anaemia.

People who are having an operation and have anaemia caused by a lack of iron should be offered iron (usually as tablets) before and after the operation.

Source guidance

Blood transfusion. NICE guideline NG24 (2015), recommendations 1.1.2 and 1.1.3

Definitions of terms used in this quality statement

Iron supplementation

People should have their haemoglobin levels checked at least 2 weeks before surgery, if possible and necessary for the procedure they are having. If they have iron-deficiency anaemia, they should be offered iron supplementation. Oral iron should be offered initially, and started at least 2 weeks before surgery. If oral iron is not appropriate, intravenous iron should be considered. [NICE's guideline on blood transfusion, recommendations 1.1.2 and 1.1.3, and expert opinion]

Quality statement 2: Tranexamic acid for adults

Quality statement

Adults who are having surgery and are expected to have moderate blood loss are offered tranexamic acid.

Rationale

Tranexamic acid can reduce the need for blood transfusion in adults having surgery. This avoids serious risks associated with blood transfusion, for example infection, fluid overload and incorrect blood transfusions being given. It may also reduce the length of hospital stays and the cost to the NHS.

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.

Process

Proportion of adults who are having surgery and are expected to have moderate blood loss who receive tranexamic acid.

Numerator – the number of adults in the denominator who receive tranexamic acid.

Denominator – the number of adults who are having surgery and are expected to have moderate blood loss.

Data source:NHS Blood and Transplant national comparative audit of NICE quality standard QS138.

Outcome

Blood transfusion rates associated with surgery.

Data source: 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 (secondary care services) ensure that systems are in place to offer tranexamic acid to adults who are having surgery and are expected to have moderate blood loss.

Healthcare professionals (such as doctors, nurses and blood transfusion specialists) offer tranexamic acid to adults who are having surgery and are expected to have moderate blood loss.

Commissioners commission services that offer tranexamic acid to adults who are having surgery and are expected to have moderate blood loss.

Adults who are expected to lose more than half a litre of blood during an operation are offered tranexamic acid. This helps blood to clot better and reduces blood loss during surgery.

Source guidance

Blood transfusion. NICE guideline NG24 (2015), recommendation 1.1.5

Definitions of terms used in this quality statement

Moderate blood loss

Adults who are expected to have blood loss greater than 500 ml during surgery, as recorded on the World Health Organization surgical safety checklist.

A NICE endorsed resource is available to support implementation of the NICE guideline on blood transfusion and the NICE quality standard. This NHS Blood and Transplant audit tool includes a list of elective surgeries expected to have blood loss greater than 500 ml that could be audited for provision of tranexamic acid:

- primary unilateral total hip replacement
- primary bilateral total hip replacement
- primary unilateral total knee replacement
- primary bilateral total knee replacement
- unilateral revision hip replacement
- unilateral revision knee replacement
- colorectal resection for any indication (open or laparoscopic)
- open arterial surgery such as scheduled (non-ruptured) aortic aneurysm repair, infrainguinal femoropopliteal or distal bypass
- primary coronary artery bypass graft
- valve replacement with or without coronary artery bypass graft
- simple or complex hysterectomy
- cystectomy
- nephrectomy
- fracture neck of femur (arthroplasty).

[NICE's guideline on blood transfusion, recommendation 1.1.5, the World Health Organization surgical safety checklist and the NHS Blood and Transplant QS138 quality insights audit tool user guide, appendix 3]

Quality statement 3: Reassessment after red blood cell transfusions

Quality statement

People are clinically reassessed and have their haemoglobin levels checked after each unit of red blood cells they receive, unless they are bleeding or are on a chronic transfusion programme.

Rationale

Clinical reassessment and measurement of haemoglobin levels after each unit of red blood cells transfused helps healthcare professionals to decide whether further transfusions are needed. This helps avoid the serious risks associated with red blood cell transfusions, for example infection, fluid overload and incorrect blood transfusions being given. It may also reduce the length of hospital stays and the cost to the NHS. For children and for adults with low body weight, red blood cell transfusion volumes should be calculated based on body weight.

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.

Process

a) Proportion of red blood cell transfusions where a clinical reassessment of the person is carried out after each unit of blood transfused, unless they are bleeding or on a chronic transfusion programme.

Numerator – the number in the denominator where a clinical reassessment is carried out after each unit of blood transfused.

Denominator – the number of red blood cell transfusions in people who are not bleeding or on a chronic transfusion programme.

Data source:NHS Blood and Transplant national comparative audit of NICE quality standard QS138.

b) Proportion of red blood cell transfusions where the haemoglobin level of the person is checked after each unit of blood transfused, unless they are bleeding or on a chronic transfusion programme.

Numerator – the number in the denominator where the haemoglobin level of the person is checked after each unit of blood transfused.

Denominator – the number of red blood cell transfusions in people who are not bleeding or on a chronic transfusion programme.

Data source:NHS Blood and Transplant national comparative audit of NICE quality standard QS138.

Outcome

Incidence of serious adverse events after red blood cell transfusion.

Data source: 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 (secondary care services) ensure that systems are in place to clinically reassess people and check their haemoglobin levels after each unit of red blood cells transfused, unless they are bleeding or on a chronic transfusion programme.

Healthcare professionals (such as doctors, nurses and blood transfusion specialists) clinically reassess people and check their haemoglobin levels after each unit of red blood cells transfused, unless they are bleeding or on a chronic transfusion programme.

Commissioners commission services that clinically reassess people and check their haemoglobin levels after each unit of blood transfused, unless they are bleeding or on a chronic transfusion programme.

Peoplewho have a red blood cell transfusion have an assessment and their haemoglobin levels checked after the transfusion to see if they need another one, unless they are bleeding or need regular blood transfusions.

Source guidance

Blood transfusion. NICE guideline NG24 (2015), recommendations 1.2.1 and 1.2.6

Definitions of terms used in this quality statement

Clinical assessment

This includes:

- asking the person if their anaemia symptoms have resolved
- asking the person about any new symptoms that might indicate an adverse response to transfusion (such as circulatory overload)
- reviewing the vital signs taken before, during and after the transfusion
- any further clinical assessment that could be needed.

[Expert opinion]

Quality statement 4: Patient information

Quality statement

People who may need or who have had a blood transfusion are given verbal and written information about blood transfusion.

Rationale

It is important that people fully understand the benefits and risks of a blood transfusion, so they can give informed consent. Discussing the alternatives, and knowing that they cannot donate blood after a blood transfusion, helps people to decide if they want one. However, some blood transfusions are not planned and are carried out in an emergency. In these cases information should be given after the transfusion, including advice about the implications of the transfusion. Helping people to understand the process and its implications can improve their experience of receiving a blood transfusion.

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.

Process

a) Proportion of people who may need a blood transfusion who are given verbal and written information about blood transfusion.

Numerator – the number in the denominator who are given verbal and written information about blood transfusion.

Denominator – the number of people who may need a blood transfusion.

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

b) Proportion of people who have had a blood transfusion who are given verbal and written information about blood transfusion.

Numerator – the number in the denominator who are given verbal and written information about blood transfusion.

Denominator – the number of people who have had a blood transfusion.

Data source:NHS Blood and Transplant national comparative audit of NICE quality standard QS138.

Outcome

Patient satisfaction with information they are given about blood transfusion.

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

What the quality statement means for different audiences

Service providers (secondary care services) ensure that systems are in place to give verbal and written information about blood transfusion to people who may need or who have had a blood transfusion.

Healthcare professionals (such as doctors, nurses and blood transfusion specialists) give verbal and written information about blood transfusion to people who may need or who have had a blood transfusion.

Commissioners commission services that give verbal and written information about blood transfusion to people who may need or who have had a blood transfusion.

People who may need a blood transfusion, or who have had one unexpectedly (for example, because of serious bleeding during an operation), have information about blood transfusion explained to them verbally and in writing.

Source guidance

Blood transfusion. NICE guideline NG24 (2015), recommendation 1.8.1

Definitions of terms used in this quality statement

People who may need a blood transfusion

People who have had a blood sample taken and sent to the blood transfusion laboratory for grouping and/or antibody screening. [Expert opinion]

Verbal and written information

This should cover:

- the reason for the transfusion
- the risks and benefits
- the transfusion process
- any transfusion needs specific to them
- any alternatives that are available, and how they might reduce their need for a transfusion
- that they are no longer eligible to donate blood.

[NICE's guideline on blood transfusion, recommendation 1.8.1]

Equality and diversity considerations

People should be provided with information that they can easily read and understand themselves, or with support, so they can communicate effectively with health and social care services. 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. People should have access to an interpreter or advocate if needed.

For people 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.

Update information

Minor changes since publication

April 2024: We reviewed the quality standard and amended the wording for local data sources to align with the most recent quality standard template and to reflect national sources of data where relevant. We amended the process measures in statement 1 to improve clarity and added examples of elective surgeries expected to have moderate blood loss to the definition in statement 2. We also removed structure measures.

May 2018: A correction has been made to the definitions section of statement 1 on the use of intravenous iron supplementation.

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 on 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 produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Improving outcomes

This quality standard is expected to contribute to improvements in the following outcomes:

- reduction in inappropriate or unnecessary blood transfusions
- adverse events associated with blood transfusion
- mortality after blood transfusion.

It is also expected to support delivery of the NHS outcomes framework 2016/17.

Diversity, equality and language

During the development of this quality standard, equality issues were considered 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)

Supporting organisations

Many organisations share NICE's commitment to quality improvement using evidence-based guidance. The following supporting organisations have recognised the benefit of the quality standard in improving care for patients, carers, service users and members of the public. They have agreed to work with NICE to ensure that those commissioning or

providing services are made aware of and encouraged to use the quality standard.

- NHS Blood and Transplant
- Royal College of Physicians (RCP)
- UK Transfusion Laboratory Collaborative