

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.

Quality statements

Statement 1 People with iron-deficiency anaemia who are having surgery receive iron supplementation before surgery. **[2016]**

Statement 2 Adults who are having surgery in an operating theatre where there is any risk of bleeding and the procedure will breach the skin or mucous membrane receive tranexamic acid. **[2016, updated 2026]**

Statement 3 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. **[2016]**

Statement 4 People who may need or who have had a transfusion are given verbal and written information about blood transfusion. **[2016]**

In 2026 this quality standard was updated and 1 statement prioritised in 2016 was updated (2016, updated 2026). For more information, see [update information](#).

Quality statement 1: Iron supplementation

Quality statement

People with iron-deficiency anaemia who are having surgery receive iron supplementation before surgery.

Rationale

Preoperative anaemia is associated with increased postoperative morbidity and mortality, and with increased transfusion needs. Treating iron deficiency with iron supplementation 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 iron-deficiency anaemia should be investigated before 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

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.](#)

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 surgery to people with iron-deficiency anaemia.

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

Commissioners ensure that iron supplementation is available to offer before surgery to people with iron-deficiency anaemia having surgery

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

Source guidance

Blood transfusion. NICE guideline NG24 (2015, updated 2026), 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 having surgery in an operating theatre

Quality statement

Adults who are having surgery in an operating theatre where there is any risk of bleeding and the procedure will breach the skin or mucous membrane receive 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 in an operating theatre where there is a risk of bleeding and the procedure will breach the skin or mucous membrane who receive tranexamic acid.

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

Denominator – the number of adults who are having surgery in an operating theatre where there is any risk of bleeding and the procedure will breach the skin or mucous membrane.

Data source: [NHS Blood and Transplant national comparative audit of NICE quality standard QS138](#) currently audits the proportion of adults having surgery with expected moderate blood loss and is being updated to reflect the updated measure.

What the quality statement means for different audiences

Service providers (secondary care services) ensure that systems are in place to give tranexamic acid to adults who are having surgery in an operating theatre where there is any risk of bleeding and the procedure will breach the skin or mucous membrane.

Healthcare professionals (such as doctors, nurses and blood transfusion specialists) give tranexamic acid to adults who are having surgery in an operating theatre where there is any risk of bleeding and the procedure will breach the skin or mucous membrane. They should make decisions on the use of tranexamic acid for individual cases based on the full clinical picture.

Commissioners ensure that tranexamic acid is available to adults who are having surgery in an operating theatre where there is any risk of bleeding and the procedure will breach the skin or mucous membrane.

Adults who are having a surgery in an operating theatre where they may bleed or where their operation will breach the skin or mucous membrane are offered tranexamic acid. This helps blood to clot better and reduces blood loss during surgery.

Source guidance

[Blood transfusion. NICE guideline NG24](#) (2015, updated 2026), recommendation 1.1.5

Definitions of terms used in this quality statement

Adults

People aged 18 years and over. This statement will generally apply to young people (aged 16 and 17 years) as well, but healthcare professionals should use their clinical judgement on when this is not appropriate for individual patients. [[NICE's guideline on blood](#)

transfusion, terms used in this guideline]

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.

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.

People who 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, updated 2026), 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.

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, updated 2026), 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]

Update information

February 2026: Changes have been made to align this quality standard with the updated NICE guideline on blood transfusion. The population in statement 2 has been amended to align with the updated guideline. Outcome measures have been removed throughout as they do not have a data source.

Minor changes since publication

August 2024: We amended quality statement 1 to clarify that the area of quality improvement is iron supplementation for pre-operative iron-deficiency anaemia, and we removed a process measure to reflect this clarification. We amended quality statements 1 and 2 to improve measurability by using receive instead of offer.

April 2024: We reviewed the quality standard and amended the wording for local data sources to reflect national sources of data where relevant. We 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 standards advisory committees](#) for details about our standing committees. Information about the topic experts invited to join the standing members is available from the [webpage for this quality standard](#).

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.

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.

For all quality statements where information is given, it is important that people are provided with information that they can easily read and understand themselves, or with

support, so they can communicate effectively with health 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 if needed. People should also have access to an advocate, if needed, as set out in [NICE's guideline on advocacy services for adults with health and social care needs](#).

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.

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](#)