NHS
Blood and Transplant

2024 National Comparative Audit of NICE Quality Standard QS138

National Comparative Audit of Blood Transfusion (NCABT)

March 2025

Acknowledgements

We wish to thank all those who have participated in the 2024 audit of NICE Quality Standard QS138. This audit would clearly not be possible without their support. We are equally grateful to many colleagues for their valuable and constructive comments.

MEMBERS OF THE PROJECT GROUP

Joint Clinical Audit Leads

Prof Mike Murphy, Consultant Haematologist, NHS Blood & Transplant and Oxford University Hospitals NHS Foundation Trust

Dr. James Uprichard, Consultant Haematologist, St. George's University Hospitals NHS Foundation Trust

Medical

Dr. Cath Booth, Consultant Haematologist, Clinical Lead, NCABT

Dr. Youssef Sorour, Consultant Haematologist, Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

Nursing

Wendy McSporran, Advanced Transfusion Practitioner, Royal Marsden NHS Foundation Trust

Scientific

Anna Capps-Jenner, Head of Blood Transfusion, Ealing Hospital

Anwen Davies, Patient Blood Management Practitioner, NHSBT

Jeyakumar Visuvanathan (Jey), Site Manager Haem and Blood Transfusion, Harefield Hospital, Part of Guy's and St. Thomas' NHS Foundation Trust

Patient Representative

Graham Donald, Patient Member, NBTC

Audit

John Grant-Casey, Programme Manager, NCABT

Paul Davies, Senior Clinical Audit Facilitator, NCABT

FOR CORRESPONDENCE, PLEASE CONTACT

John Grant-Casey, Programme Manager, Freepost NCABT

Email john.grant-casey@nhsbt.nhs.uk Tel: +44 (0)7720 275388

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Foreword

From a patient viewpoint, the survey results are very disappointing. The one encouragement is the increased level of participation by both Trusts and individual sites which indicates, I hope, wider engagement with blood transfusion. Even so, these poor results are measured against NICE Quality Standards dating back to 2016, which I would expect to be settled good practice by now. Given that these are 'Quality Standards', one would expect the aim to be 100% compliance, with actual achievement only a little short of that. It is especially discouraging that the results are little better than in the previous audit.

Instead, the compliance with these standards is mostly in two thirds of cases or less – yet these are standards designed to promote patient health and well-being and conserve precious, donated blood. The tranexamic acid (TXA) results are rather better, with compliance around 75% - unsatisfactory but heading in the right direction.

By contrast, why is the majority of pre-operative iron intravenous, rather than oral? The explanations in Table 1 are not convincing. As to TXA, whilst compliance has risen as noted above, in over 80% of cases where it has not been prescribed hospitals don't seem to know why (Table 2). Then, Table 3 shows that checks before and after a red cell unit aren't being consistently carried out – this despite the risk of transfusion-associated circulatory overload (TACO) and rising patient deaths associated with it.

The fourth standard (to consult and inform patients) is being complied with in less than two fifths of cases surveyed. I find this deplorable, and am wondering, in the light of the Montgomery decision in relation to obtaining valid consent to transfusion, whether failing to consult is lawful. Certainly, my experience as a patient is that, for other procedures, I receive an explanatory booklet, as well as having a discussion with the surgeon and/or anaesthetist beforehand. Why should blood transfusion be so different?

The 2024 audit included the restrictive haemoglobin (Hb) thresholds for red cell transfusions recommended in the 2015 NICE Guidelines, so hardly a new requirement. More than half the transfusions recorded were for patients with the Hb above the recommended level in the guidelines, yet they were transfused nonetheless. In almost a third of such cases the justification for departing from the guidelines was "instruction from senior clinician" – see Table 5, so senior doctors are deciding upon what may well be unnecessary transfusions that are to the detriment of patients. Did no-one feel empowered to challenge such decisions?

We need to find ways to help hospitals do very much better. Rather than asking non-compliant sites why they are unable to meet the standard, we should ask better performing hospitals what they are doing (or not doing) to secure compliance. Would appointing a high level Champion for Blood Transfusion in each Trust improve practice, and how would good practice be embedded so it continues once the Champion moves on? Also, is there some way of rewarding or incentivising good practice, so that sites which achieve, say, 90% compliance are publicly applauded? This might foster healthy competition without naming and shaming, which could be counter-productive and unfair.

Graham Donald

Summary

The re-audit found evidence of some compliance with elements of the four National Institute for Health and Care Excellence (NICE) Quality Standard for Blood Transfusion (2016) [1], but with little progress towards achieving uniformly good practice:

Key findings

- 880/1337 (66%) of the patients who were known to have iron deficiency anaemia prior to being admitted for moderate blood loss surgery were treated with iron before surgery.
- 1259/1671 (75%) patients undergoing surgery with expected moderate blood loss received tranexamic acid.
- 1088/1600 (68%) patients receiving elective red blood cell transfusions had both their Hb checked and a clinical re-assessment after a unit of red cells was transfused.
- 591/1649 (36%) of transfused patients had evidence of receiving both written and verbal information about the risks, benefits and alternatives to transfusion.
- 680/1445 (47%) of eligible patients received red cell transfusion compliant with the NICE guideline recommendation for restrictive red cell transfusion.

Recommendations

General:

- Hospitals should examine their procedures for implementing the NICE Quality Standards for Blood Transfusion, and explore the barriers to their implementation and work to overcome them.
- Hospitals should undertake regular repeat audits of the NICE Quality Standards and consider using the QS138 Quality Insights tool as a quality improvement initiative.
- Variation in compliance with the Standards by clinical specialties needs to be explored to understand the reasons and to identify potential solutions.

Specific related to each NICE Quality Standard:

- Hospitals should examine the procedures in place for the pre-operative identification and timely management of iron deficiency anaemia.
- Hospitals should examine their procedures for the use of tranexamic acid in patients undergoing surgery with anticipated moderate blood loss.
- Hospitals should examine their procedures for monitoring transfused patients to minimise the risk of over transfusion and its associated complications.
- Hospitals should examine their procedures for providing written and verbal information to patients who may or definitely need transfusion and documenting this.
- Hospitals should review their procedures for ensuring the use of restrictive red cell transfusion for eligible patients.

Background

This is the third audit of compliance with the NICE Quality Standards (2016) [1], which encompass a range of key issues of the management of patients who may require blood transfusion, often termed patient blood management (PBM) [2].

PBM is “a patient-centered, systematic, evidence-based approach to improve patient outcomes by managing and preserving a patient's own blood, while promoting patient safety and empowerment” [3]. The deployment of PBM initiatives reduces inappropriate transfusion, which improves patient safety, reduces hospital costs and helps to ensure the availability of blood components when there is no

alternative. Audit of PBM practice is vital to improve understanding about the quality of care and to indicate where corrective measures are needed.

This audit included an additional standard derived from the NICE guidelines for transfusion (2015) [4], that is, the use of restrictive haemoglobin thresholds to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme. This standard complements the NICE Quality Standards and its audit allows a direct review of how transfusions are being used.

Aims of the audit

- Provide the opportunity to evaluate local evidence of progress towards compliance with the NICE Quality Standard for Blood Transfusion since the 2023 audit [5]
- Include an additional audit of restrictive haemoglobin thresholds to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme.
- Provide data to hospital teams to allow their understanding of what steps they can take to implement PBM and to measure their effectiveness in improving patient care
- Allow the transfusion community and the National Blood Transfusion Committee to benchmark the progress of PBM and its effect on improving patient outcomes
- An organisational survey of the resources for transfusion in hospitals e.g. staff, information technology etc. was conducted alongside this audit. Analyses are being carried out to determine correlations, if any, between the availability of different types of resources for transfusion in hospitals and compliance with the Standards used in this audit.

Audit Standards

The Standards for this audit were adapted from those issued in NICE QS138, with an additional standard suggested by the audit Project Group:

Standard 1: Patients with iron deficiency anaemia are treated with iron supplementation before moderate blood loss surgery.

Standard 2: Adults who are having surgery and expected to have moderate blood loss receive tranexamic acid.

Standard 3: Patients 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.

Standard 4: Patients who have had a transfusion are given verbal and written information about blood transfusion.

Standard 5: Restrictive haemoglobin thresholds are used to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme.

Methodology

All NHS Trusts in the UK were invited to take part in the audit. Trusts were allowed to enrol as whole Trusts or as hospitals within a Trust, so we used the term “sites” to describe those who contributed data. Each participating site was issued with a stationery pack that contains guidance for selecting a sample for audit and four data collection forms, with ten copies of each, allowing them to audit up to 50 patients. The audit Standards were derived from the Standards in the NICE Quality Standard QS138. The audit was divided into five sections, A, B, C, D & E, and a patient’s record could be used for more than one section. Data were collected on cases seen during July, August and September 2024.

Participation in the audit

169 sites contributed data on 5055 patients, this data was submitted from 122/161 (77.0%) of NHS Trusts and Boards. For Section A there were data on 1337 patients, 1671 for Section B, 1602 for Section C, 1650 for Section D and 1556 for Section E. See Appendix D for a list of participating sites.

Participation compared to previous cycle: UK participation

	2023	2024
Participating sites	126	149
Participating Trusts/Boards	101	122
Patients audited	3710	5105
Section A patients	1020	1337
Section B patients	1323	1671
Section C patients	1195	1602
Section D patients	1346	1650
Section E patients	n/a	1556

These figures represent the total number of patients submitted for each section. Some submitted data was not complete and so figures used in analysis may be lower.

England participation

	2023	2024
Participating sites	121	130
Participating Trusts	100	102
Patients audited	3617	4548
Section A patients	1001	1206
Section B patients	1277	1481
Section C patients	1172	1372
Section D patients	1322	1414
Section E patients	n/a	1338

Northern Ireland participation

	2023	2024
Participating sites	2	-
Participating Trusts	2	-

Scotland participation

	2023	2024
Participating sites	0	12
Participating Boards	0	9
Patients audited	0	224
Section A patients	0	48
Section B patients	0	88
Section C patients	0	108
Section D patients	0	111
Section E patients	n/a	107

Wales participation

	2023	2024
Participating sites	1	25
Participating Boards	1	11
Patients audited	24	249
Section A patients	3	66
Section B patients	10	82
Section C patients	10	100
Section D patients	10	100
Section E patients	n/a	99

7 English Regional Transfusion Committee (RTC) areas participation

2024	North East and Yorkshire	North West	South East	London	East of England	Midlands	South West
Participating sites	24	17	22	26	15	14	12
Participating Trusts	19	15	15	18	11	13	11
Patients audited	738	518	767	1031	495	553	446
Section A patients	229	127	192	270	152	125	111
Section B patients	289	168	283	297	176	127	141
Section C patients	244	148	290	296	150	130	114
Section D patients	269	145	275	305	150	129	141
Section E patients	245	143	278	298	148	128	98

2023	North East and Yorkshire	North West	South East	London	East of England	Midlands	South West
Participating sites	20	20	20	19	13	15	14
Participating Trusts	16	18	16	14	11	14	11
Patients audited	646	561	508	704	335	463	400
Section A patients	167	137	118	217	112	125	125
Section B patients	250	191	167	256	130	135	148
Section C patients	181	181	209	188	138	145	130
Section D patients	196	227	207	228	140	180	144
Section E patients	20	20	20	19	13	15	14

SECTION A

Standard 1: Patients with iron deficiency anaemia are given iron supplementation before surgery.

Background

The first pillar of PBM is the detection and management of anaemia and iron deficiency [2]. The rationale for identifying and treating anaemia preoperatively includes:

- Identification of the underlying cause of anaemia which may be unrecognised without further investigations
- Reduction in the likelihood of transfusion and thus reduction in the pressure on blood stocks
- Reduction in patients' exposure to adverse effects of anaemia and/or transfusion

NICE (2015) [4] recommends correction of iron deficiency anaemia with oral iron in the first instance started at least 2 weeks before surgery, despite the known issues of tolerance and compliance.

In cases where oral iron is unlikely to be effective, due to factors such as malabsorption, limited time to surgery or patient non-compliance, then intravenous iron is recommended [4].

Table 1. Investigating and treating iron deficiency anaemia

N=1337	N	%
A2. Was iron therapy started before surgery?		
Yes	880	65.8
No	457	34.2
A3 . How many weeks prior to surgery was iron therapy started?		
Don't know	96	10.9
Less than 2 weeks	188	21.4
2 to 4 weeks	184	20.9
More than 4 weeks	412	46.8
A4. Was the iron therapy		
Oral	361	41.1
IV	494	56.3
Not Stated	23	2.6
A5. Why was the patient on IV therapy?* (n=489)		
Intolerance to oral iron now or in the past	33	6.7
Too short a time for oral iron to be effective before surgery	229	46.4
Likelihood of poor compliance with oral therapy	20	4.0
Other	61	12.3
Not Stated	158	32.0

** Please note that the reasons given (496) are greater than the number of patients on IV iron therapy (489) as patients could be on IV therapy for a combination of reasons*

The data in Table 1 show that 457/1337 (34%) of the patients who were known to have iron deficiency anaemia prior to being admitted for surgery were not treated with iron before surgery.

At least 42% of patients treated with iron for iron deficiency anaemia received iron (either oral or intravenous) within 4 weeks of surgery; 4 weeks is too short a time for iron therapy to have its maximum effect.

In many (>40%) cases, the reason for using IV rather than oral iron is uncertain.

Recommendation: Hospitals should examine the procedures in place for the pre-operative identification and the timely management of iron deficiency anaemia.

SECTION B

Standard 2: Adults who are having surgery and expected to have moderate blood loss receive tranexamic acid.

Background

Tranexamic acid is an antifibrinolytic agent which binds to plasminogen, reducing its conversion to plasmin and therefore preventing fibrin degradation. NICE guidelines recommend the use of tranexamic acid in primary joint replacement surgery as well as in patients undergoing other operations with expected moderate blood loss (greater than 500 ml) [4]. Tranexamic acid can reduce major bleeding by 25% and reduces the need for blood transfusion, without increasing the risk of thromboembolic events [6]. The Infected Blood Inquiry report recommends that consideration of tranexamic acid be on every hospital surgical checklist [7].

Table 2. Tranexamic Acid use

N=1671	N	%
B2. Patient was given Tranexamic Acid	1259	75.3
B3 . Why was the patient not given Tranexamic Acid?* (N= 412)		
Surgical team were concerned about the risk of thrombosis	14	3.4
Surgical team did not think it was effective	0	0.0
Tranexamic acid is not included on WHO or other surgical checklist	46	11.2
No reason documented	334	81.1
Other please state	18	4.4
Not stated	9	2.2

** Please note that reasons given do not add up to Tranexamic acid not being given as Tranexamic acid may be not given for a combination of reasons.*

The audit found that 1259/1671 (75%) eligible surgical patients were given tranexamic acid.

Most sites do not regularly document a reason for tranexamic acid not being given. For 46/412 (11.2%) patients, the reason for not giving tranexamic acid is because it is not included on WHO or other surgical checklist.

Recommendation: Hospitals should examine their procedures for the use of tranexamic acid in patients undergoing surgery with anticipated moderate blood loss.

SECTION C

Standard: Patients 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.

Optimising decision making for patients who may need blood transfusion is a central focus of PBM initiatives [2], involving a balanced approach that considers the potential benefits against the risks of transfusion and the appropriateness of alternative treatments e.g. for treating anaemia.

A single unit approach is recommended by the NICE guidelines for transfusion with a clinical re-assessment and a haemoglobin re-check carried out following the transfusion of each unit of blood [4]. This approach is also recommended by SHOT to mitigate the risk of transfusion-associated circulatory overload (TACO), particularly for older patients (>50 years) and those of lower body weight (<50 Kg) who are at higher risk of overload [8]. A clinical re-assessment should include checking if symptoms of anaemia have been alleviated, reviewing vital signs, and being alert to any new symptoms which may have been caused by the transfusion.

Table 3. Assessing the patient following the transfusion of a unit of red blood cells

N = 1600	N	%
C1. Hb checked after unit was given	1300	81.1
C2. Patient clinically assessed after unit was given	1186	74.0
People are clinically reassessed **and** have their haemoglobin checked after each unit of red blood cells	1088	67.9

The audit found that compliance with the standard of clinical assessment and haemoglobin check after each unit of red blood cells was 68%. Non-compliance increases the risk of over transfusion and associated complications such as TACO.

Recommendation: Hospitals should examine their procedures for monitoring transfused patients to minimise the risk of over transfusion and its associated complications.

SECTION D

Standard: Patients who have had a transfusion are given verbal and written information about blood transfusion

Background

The Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO) is the independent advisory committee that advises ministers on the safety of blood, tissues and organs. In 2020, it revised its recommendations for the provision of information about blood transfusion and for obtaining informed patient consent and to clarify good practice [9,10]. SaBTO is currently reviewing and updating them.

Table 4. Provision of information about risks, benefits & alternatives in transfused patients

N = 1649	N	%
Patient was given NO information	446	27.0
Patient was given ONLY VERBAL information	566	34.3
Patient was given ONLY WRITTEN information	46	2.8
Patient was given WRITTEN AND VERBAL information	591	35.8

The main finding of the audit of this standard was that there was absence of any documentation that any written or verbal information was provided to 27% of transfused patients, and only 36% patients were documented to have received both written and verbal information.

Recommendation: Hospitals should examine their procedures for providing written and verbal information to patients who may or definitely need transfusion and documenting this.

The updated SaBTO guidelines (expected to be available in mid-2025) will provide further guidance and examples of good practice.

The UK Blood Services patient information leaflet *'Receiving a Blood Transfusion'* [11] is a useful resource for both patients and healthcare staff.

SECTION E

Standard: Restrictive haemoglobin thresholds are used to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme

The NICE guidelines for transfusion (2015) [4] recommended:

- Use restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not have major haemorrhage or acute coronary syndrome or require regular blood transfusions for chronic anaemia
- Use a haemoglobin level threshold for transfusion of 70 g/L and a haemoglobin target of 70-90 g/L after transfusion

Table 5. Compliance with restrictive red cell transfusion practice in eligible patients

N=1556	N	%
E2. Is there evidence that the patient's Hb was checked not more than 24 hours before the start time of the unit of red cells?		
Yes	1449	93.1
No	107	6.9
E3. If yes, what was the Hb?		
<=70	680	47.1
>70	765	52.9
E5. If the pre-transfusion Hb was above 70 g/L, was the clinical justification for transfusion documented?	N	%
Yes	568	74.8
No	191	25.2
E5a. If Yes, what was the justification* (N=558)	N	%
Acute coronary syndrome	70	12.3
Instruction from senior clinician	184	32.4
Co-morbidity	43	7.6
Other	275	48.4
Not stated	21	3.7

** Please note that reasons given do not add up to "Yes" (justification documented) as patients could be transfused for a combination of reasons.*

The audit found that the majority of patients (93%) had an Hb check performed in the 24 hours prior to their blood transfusion, but 53% of transfused patients had a Hb of >70g/L and may have been transfused inappropriately. A convincing justification for these transfusions was lacking in most cases, most commonly as *'Instruction from senior clinician'.* This could indicate either the presence of co-morbidity justifying transfusion or a disregard for the guidance on restrictive red cell transfusion. The rationale for transfusion should always be clearly documented.

Recommendation: Hospitals should review their procedures for ensuring the use of restrictive red cell transfusion for eligible patients.

The 2024 updated National Blood Transfusion Committee *Indication codes for transfusion in adults – a summary of published recommendations* provides useful information about the appropriate use of blood [12].

SECTION F

Comparison of the results of the audit of compliance with the audit Standards 2021, 2023 and 2024 ALL REGIONS

Standard	2021	2023	2024
1: People with iron deficiency anaemia are treated with iron supplementation before surgery.	665/1131 (59%)	617/908 (68%)	880/1337 (66%) ↓
2: Adults who are having surgery and expected to have moderate blood loss receive tranexamic acid.	1079/1599 (67%)	900/1336 (67%)	1259/1671 (75%) ↑
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.	893/1534 (58%)	766/1205 (64%)	1088/1600 (68%) ↑
4: People who have had a transfusion are given verbal and written information about blood transfusion.	422/1622 (26%)	475/1356 (35%)	591/1649 (36%) ↑
5: Restrictive haemoglobin thresholds are used to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme.	Not assessed	Not assessed	680/1445 (47%)

Comparison of the results of the audit of compliance with the audit Standards 2021, 2023 and 2024 for ENGLAND only

Standard	2021	2023	2024
1: People with iron deficiency anaemia are treated with iron supplementation before surgery.	659/1105 (59.6%)	594/881 (67.4%)	776/1206 (64.3%) ↓
2: Adults who are having surgery and expected to have moderate blood loss receive tranexamic acid.	1067/1564 (68.2%)	855/1277 (67%)	1137/1481 (76.8%) ↑
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.	873/1485 (58.8%)	746/1172 (63.7%)	968/1371 (70.6%) ↑
4: People who have had a transfusion are given verbal and written information about blood transfusion.	420/1564 (26.9%)	459/1321 (34.7%)	476/1413 (33.7%) ↓
5: Restrictive haemoglobin thresholds are used to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme.	*Not assessed*	*Not assessed*	586/1238 (47.3%)

The data show improved compliance with the use of tranexamic acid in surgery and clinical assessment of transfused patients but disappointingly not with the other Standards.

Recommendation: Further efforts are needed at national and local level to improve compliance with the Standards.

SECTION G

Sites were asked to record the specialty under which the transfusion was given. The individual quality Standards are analysed below, with the results provided for different clinical specialties.

Standard 1: Patients with iron deficiency anaemia are treated with iron supplementation before surgery

Specialty	N	Therapy started	%
Upper gastroenterological	51	38	74.5
Colorectal	224	166	74.1
Gynaecological	332	232	69.9
Other please state	87	56	64.4
Orthopaedic	452	283	62.6
Genitourinary	81	45	55.6
Cardiac	63	32	50.8
Neurological	4	2	50.0
Vascular	21	7	33.3

Standard 2: Adults who are having surgery and expected to have moderate blood loss receive tranexamic acid

Specialty	N	TXA given	%
Orthopaedic	877	813	92.7
Neurological	7	6	85.7
Other please state	51	39	76.5
Cardiac	122	91	74.6
Gynaecological	300	187	62.3
Upper gastroenterological	12	7	58.3
Colorectal	145	55	37.9
Genitourinary	90	31	34.4
Vascular	34	9	26.5

Standard 3: Patients 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.

Specialty	N	Re-assessed	%
NOT STATED	1	1	100.0
Other; please state	378	281	74.3
Obstetrics	45	33	73.3
Surgery	439	321	73.1
General medicine	462	305	66.0
Gynaecology	79	48	60.8
Oncology	56	29	51.8
Haematology	109	55	50.5

Standard 4: Patients who have had a transfusion are given verbal and written information about blood transfusion.

Specialty	N	Info given	%
Obstetrics	48	27	56.3
General medicine	482	191	39.6
Gynaecology	78	26	33.3
Other; please state	367	120	32.7
Surgery	459	150	32.7
Haematology	124	40	32.3
Oncology	56	17	30.4
NOT STATED	4	1	25.0

Standard 5: Restrictive haemoglobin thresholds are used to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme

Specialty	N	Threshold used	%
Obstetrics	33	9	79
Surgery	391	118	76.8
Other; please state	354	143	71
NOT STATED	4	2	66.7
Gynaecology	55	28	66.3
Oncology	45	23	66.2
Haematology	87	47	64.9
General medicine	448	293	60.5

There was significant variation between clinical specialties in compliance with the Standards. This was particularly marked for the use of tranexamic acid in surgery.

Recommendation: Variation in compliance with the Standards by clinical specialties needs to be explored to understand the reasons and potential solutions

SECTION H

ORGANISATIONAL SURVEY

Collecting information on the context in which care is given helps understand not only the barriers to change but also where the opportunities lie to improve patient care. The organizational survey form is shown at Appendix B.

Results

115/156 (74%) sites completed an organisational survey.

Staffing

Dedicated consultant for transfusion medicine

103/115 (90%) of sites have one or more consultants, 117 consultants in all:

n consultants	n sites	%
1	93	90%
2	8	8%
4	2	2%

These consultants have a varied number of programmed activities (PAs). The average is 1.9 PAs.

n PAs	consultant 1 (=93)	consultant 2 (n=8)	consultant 3 (n=2)	consultant 4 (n=2)	% consultants with that PA
0	8				7%
0.125	1	1			2%
0.25	1				1%
0.5	8	3		1	10%
0.9	1				1%
1	26	1			23%
1.5	2				2%
2	20	1			18%
2.2	1				1%
2.5	1				1%
3	2		1		3%
4	1				1%
6	1				1%
Not known	20	2	1	1	21%

48/117(41%) of consultants have 1 or 2 PAs. One in 5 consultants (23/117 (20%)) have less than 1 PA in which to conduct their PBM activities.

Transfusion Practitioners (TPs)

There are 223 TPs in this sample of sites. One site does not have a TP. The Agenda For Pay Band of TPs ranges from Band 3 to Band 8b. The amount of time they are employed as TPs per week is measured in Whole Time Equivalence (WTE) with 1 WTE equating with a working week of 37.5 hours.

Whole Time Equivalence (n = 219)

WTE	TPs with that WTE - n (%)
0.2	3.2%
0.4	4.1%
0.5	8.2%
0.58	0.5%
0.6	11.9%
0.67	0.9%
0.68	0.5%
0.7	0.5%
0.73	0.5%
0.75	0.5%
0.8	6.8%
0.88	0.5%
0.9	2.7%
0.91	0.5%
0.96	0.5%
1	53.9%
Not stated	4.6%

Just over half the TPs are employed full-time to carry out their duties. 16% of TPs have between 1 and 3 days to carry out their duties. Work is underway to study the audit data further to assess, if possible, the impact of these staffed hours. Seniority, as measured by pay grade, may also have an impact on the quality of Patient Blood Management in a hospital:

Band	n (%) TPs on that band
3	0.4%
4	0.4%
5	0.9%
6	14.3%
7	65.0%
8a	10.8%
8b	2.2%
Not stated	4.5%
Not NHS	1.3%

The majority of TPs are employed on a Band 6 or higher pay grade, with 1.7% of TPs employed on Band 5 or lower. The pay band is not known for 5.8% of TPs.

Hospital Transfusion Teams & Committees
Frequency of Hospital Transfusion Team meetings range from 2 to 3 times per week to 3 times a year. Hospital Transfusion Committees meet, on average, quarterly.

Iron Clinics
Reviewing patients in an iron clinic is an effective way of identifying those with correctible iron deficiency anaemia and gives the patient the opportunity to receive iron therapy, especially important if the patient is likely to undergo surgery which may result in blood loss of 500 mls or more. Use of such clinics is embodied in a pre-operative iron pathway. 92/114 (81%) sites have such a pathway.

Ensuring the use of tranexamic acid in surgical patients
The table below sets out the provision sites make to support the use of tranexamic acid.

Measure	N	%
Tranexamic acid on Surgical checklist	35	30.7
Prompt in patient's electronic record	6	5.3
Feedback to surgical teams	16	14.0
Education/training	68	59.6
Feedback to Senior Management Teams	28	24.6
Information on use is recorded electronically	38	33.3
Other	39	34.2

Ensuring single unit transfusion where appropriate
The table below sets out the provision sites make to support the use of single unit transfusion where appropriate.

Measure	N	%
Single unit policy	74	64.9
Monitoring policy adherence	34	29.8
Education/training	95	83.3
Other	44	38.6

Ensuring the provision of information
The table below sets out the provision sites make to ensure that patients receive information about blood transfusion.

Measure	N	%
Policy outlines consent procedure	112	98.2
Policy outlines refusal procedure	108	94.7
Means to record policy compliance	34	29.8
Electronic prompt to give information	32	28.1
Training includes giving verbal information	110	96.5
Training includes giving written information	102	89.5
Training includes documenting consent	107	93.9
Other	33	28.9

Use of information resources for patients
The table below sets out the resources sites have to provide information about blood transfusion to patients and the form that information takes.

Measure	N	%
NHSBT patient information leaflet	104	91.2
Trust / Hospital patient information leaflet	23	20.2
Both	22	19.3
Other	6	5.3

Measure	N	%
Only Paper	48	42.1
Only Electronic	1	0.9
Both	63	55.3

Ensuring restrictive red cell transfusion where appropriate
The table below sets out the provision sites make to support restrictive red cell transfusion where appropriate.

Measure	N	%
Restrictive red cell use policy	96	84.2
Monitoring adherence to restrictive policy	33	28.9
Electronic decision support	10	8.8
Education/Training	95	83.3
Other	32	28.1

Where QS138 audit reports are discussed

Measure	N	%
Trust/ Hospital Chief Executive	16	14.0
Clinical Governance	52	45.6
HTC	97	85.1
Clinical meetings of relevant clinical specialties	36	31.6
Clinical teams	37	32.5

The organisational survey paints a useful picture about the environment in which Trusts and hospitals manage blood transfusion. There is an opportunity to consider if more time can be allocated to Consultants to allow them to focus on initiatives to improve transfusion practice, and, certainly in some sites, there seems to be a very low provision of transfusion practitioner time. Not all sites have a pre-operative iron pathway, nor do they have policies, training and resources to support Patient Blood Management.

These data provide useful insights, and work will begin on correlating good practice with the provision of resources, policies and monitoring implementation. Further work will be done in investigating if having a particular policy or resource and the way audit information is handled in the hospital or Trust presents a model for improving practice. It will also seek to explore why progress appears to be painfully slow given the way in which compliance with NICE QS138 has been recently highlighted by the Infected Blood Inquiry.

DISCUSSION

The NICE Quality Standard 138 was published nine years ago [1]. While it is encouraging to see some limited improvement with compliance with two of the Standards, there is nevertheless a long way to go to ensure full compliance and that transfusion practice is optimised for the benefit of patients.

The participation of hospitals in this annual National Comparative Audit allows a snapshot of compliance with the Standards to be gathered, and to identify areas for improvement. Transparency progress is facilitated by the availability of each Trust's compliance on the Model Health System.

Performing regular repeat audits of the Standards enables hospitals to review local compliance with the Standards, allowing monitoring of the effectiveness of any initiatives introduced to improve compliance. The QS138 Quality Insights audit tool supports this activity, allowing hospitals to enter into a quality improvement cycle for all or some of the Standards up to four times per year, supporting hospital and regional workplans [13].

Hospitals need to understand what barriers may exist to improving practice but also what interventions are associated with high compliance. Our next steps are to survey a sample of hospitals to find out what has enabled them to perform well or demonstrate notable improvement. We can then share the learning points with hospitals, to help provide tools to enable uniform high standards.

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National Comparative Audit of Blood Transfusion

NHS Blood and Transplant

2024 National Comparative Audit of NICE Quality Standard 138

PATIENT AUDIT FORM

SECTION A - Adults with iron deficiency anaemia are offered iron supplementation before surgery

A1. What was the surgical specialty?

- ☐ Cardiac
- ☐ Colorectal
- ☐ Gynaecological
- ☐ Genitourinary
- ☐ Neurological
- ☐ Orthopaedic
- ☐ Upper gastroenterological
- ☐ Vascular
- ☐ Other, please state

A2. Was iron therapy started before surgery? ☐ Yes ☐ No

If yes, continue below. If no, you have completed the questionnaire

A3 . How many weeks prior to surgery was iron therapy started?

Tick a box that is the most closest to the actual number of weeks

- ☐ Don't Know
- ☐ Less than 2 weeks
- ☐ 2 to 4 weeks
- ☐ More than 4 weeks

A4. Was the iron therapy

- ☐ **Oral?** *You have completed the questions*
- ☐ **IV?** *Now answer question A5*

A5. Why was the patient on IV therapy?

- ☐ Likelihood of poor compliance with oral therapy
- ☐ Intolerance to oral iron now or in the past
- ☐ Too short a time for oral iron to be effective before surgery
- ☐ Other
- ☐ Not stated

Sitecode

Please read the guidance notes before completing this form

2024 National Comparative Audit of NICE Quality Standard 138

PATIENT AUDIT FORM

SECTION B - Adults who are having surgery and expected to have moderate blood loss are offered tranexamic acid

B1. What was the surgical specialty?

- ☐ Cardiac
- ☐ Colorectal
- ☐ Gynaecological
- ☐ Genitourinary
- ☐ Neurological
- ☐ Orthopaedic
- ☐ Upper gastroenterological
- ☐ Vascular
- ☐ Other, please state

B2. Is there evidence that the patient was given Tranexamic Acid at any time in the peri-operative period?

☐ Yes ☐ No *Now answer question B3*

B3. Why was the patient not given Tranexamic Acid ?

- ☐ Surgical team were concerned about the risk of thrombosis
- ☐ Surgical team did not think it was effective
- ☐ Tranexamic acid is not included on WHO or other surgical checklist
- ☐ No reason documented
- ☐ Other, please state

Sitecode

Please read the guidance notes before completing this form

2024 National Comparative Audit of NICE Quality Standard 138

PATIENT AUDIT FORM

SECTION C – Patients receiving red blood cells 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

C1. Under which specialty was the patient treated?

- ☐ General medicine
- ☐ Gynaecology
- ☐ Haematology
- ☐ Obstetrics
- ☐ Oncology
- ☐ Surgery
- ☐ Other, please state

C2. Is there evidence that the patient's Hb was checked after the unit of red cells was transfused?

☐ Yes ☐ No

C3. Is there evidence that the patient was clinically re-assessed after the unit of red cells was transfused?

☐ Yes ☐ No

END

Sitecode	Audited patient no.

Please read the guidance notes before completing this form

2024 National Comparative Audit of NICE Quality Standard 138

PATIENT AUDIT FORM

SECTION D - Patients who have had a transfusion were given verbal and written information about blood transfusion

D1. Under which specialty was the patient treated?

- ☐ General medicine
- ☐ Gynaecology
- ☐ Haematology
- ☐ Obstetrics
- ☐ Oncology
- ☐ Surgery
- ☐ Other, please state

D2. Is there evidence that the patient was given *VERBAL* information about the risks, benefits and alternatives to transfusion?

☐ Yes ☐ No

D3. Is there evidence that the patient was given *WRITTEN* information about the risks, benefits and alternatives to transfusion?

☐ Yes ☐ No

END

Sitecode	Audited patient no.

2024 National Comparative Audit of NICE Quality Standard 138

PATIENT AUDIT FORM

SECTION E - Restrictive haemoglobin thresholds are used to guide transfusion decisions in adults who are not actively bleeding or on a chronic transfusion programme

E1. Under which specialty was the patient treated?

- ☐ General medicine
- ☐ Gynaecology
- ☐ Haematology
- ☐ Obstetrics
- ☐ Oncology
- ☐ Surgery
- ☐ Other, please state

E2. Is there evidence that the patient's Hb was checked not more than 24 hours before the start time of the unit of red cells?

☐ Yes ☐ No *Now answer question E4*

E3. If yes, what was the Hb?

Now answer question E5

E4. Why was the Hb not done within 24 hrs?

- ☐ No reason documented
- ☐ Other (please state)

E5. If the pre-transfusion Hb was above 70 g/L, was the clinical justification for transfusion documented?

☐ Yes ☐ No

E5a. If Yes, what was the justification:

- ☐ Acute coronary syndrome
- ☐ Instruction from senior clinician
- ☐ Co-morbidity (please state)
- ☐ Other (please state)

END

National Comparative Audit of Blood Transfusion

NHS Blood and Transplant

SiteCode:

2024 Re-audit of NICE QS138 - ORGANISATIONAL SURVEY

BSMS Category

1.Your Blood Stocks Management Scheme category is <<BSMS>>. Is this correct?

Yes ☐ No ☐

2. Do you have a dedicated consultant (or consultants) for Transfusion Medicine?

Yes ☐ No ☐

2a. If yes, how many do you have?

One ☐ Two ☐ Three ☐ Four ☐ Five ☐

2b. How many Programmed Activities dedicated for transfusion does each consultant have?

Consultant	Number of Programmed Activities
One	Click or tap here to enter text.
Two	
Three	
Four	
Five	

3. How many Transfusion Practitioners do you have?

One ☐ Two ☐ Three ☐ Four ☐ Five ☐

3a. What is their AFC band and Whole Time Equivalence (WTE)?

TP	AFC Band	WTE
One		
Two		
Three		
Four		
Five		

4. How often does the Hospital Transfusion Team (comprising all of transfusion consultants, TPs & Transfusion Laboratory Managers) meet?

- ☐ Daily
- ☐ 2-3 times week
- ☐ Once per week
- ☐ Once per month
- ☐ Once per 3 months

5. How often does the Hospital Transfusion Committee meet?

6. Does your Trust have a pre-operative iron pathway? Yes ☐ No ☐

7. What measures are used to ensure the use of tranexamic acid for surgical patients?

Tick all that apply

- ☐ Tranexamic acid is on the Trusts' preoperative surgical checklist
- ☐ There is a prompt to use tranexamic acid as part of preoperative management in the patient's electronic record
- ☐ There is feedback to surgical teams about the proportion of eligible surgical patients that are given tranexamic acid
- ☐ Education/training is provided to anaesthetic/surgical teams
- ☐ There is feedback to Senior Management Teams on the use of tranexamic acid
- ☐ Information on the use of tranexamic acid is recorded electronically
- ☐ Other, please state

8. What measures does your Trust take to ensure that single unit transfusions are used where that is appropriate? *Tick all that apply*

- ☐ Trust has a single unit policy
- ☐ Monitoring of the adherence to single unit policy and feedback to clinical teams
- ☐ Single unit education/training is provided to clinicians who order transfusions
- ☐ Other, please state

9. What measures are taken to ensure that patients who may need transfusion have information and that this is documented? *Tick all that apply*

- ☐ The Trust's transfusion policy outlines the procedure for consenting patients for transfusion
- ☐ The Trust has a policy for refusal of consent for transfusion
- ☐ The Trust has a proforma that records compliance with the policy steps
- ☐ There is an electronic prompt to clinicians to provide patients with information
- ☐ The Trust's transfusion training includes the provision of verbal information on transfusion
- ☐ The Trust's transfusion training includes the provision of written information on transfusion
- ☐ The Trust's transfusion training includes the process for documenting consent for transfusion
- ☐ Other, please state

10. What resources are used to provide information to patients? *Tick all that apply*

- ☐ NHSBT patient information leaflet
- ☐ Trust patient information leaflet
- ☐ Other, please state

10a. If you ticked any of the options in question 10, in what form is the information provided?

- ☐ Paper
- ☐ Electronically
- ☐ Both

11. What measures does your Trust take to ensure that restrictive red cell transfusions are used where appropriate? *Tick all that apply*

- ☐ The Trust has a restrictive red cell transfusion policy (which includes Hb thresholds, but not for active bleeding or chronic transfusion)
- ☐ Monitoring of the use of restrictive transfusion and feedback to clinical teams
- ☐ Electronic clinical decision support with an alert to identify inappropriate transfusion
- ☐ Education/training provided on clinical indications to clinicians who order transfusions
- ☐ Other, please state

12. If you have taken part in the QS138 NCA audit before, Where, if at all, have reports been discussed? *Tick all that apply*

- ☐ Trust/ Hospital Chief Executive
- ☐ Clinical Governance
- ☐ HTC
- ☐ Clinical meetings of relevant clinical specialties
- ☐ Clinical teams – *(for example, Anaesthetics for results of iron deficiency & Tranexamic acid use, medical meetings for Hb thresholds and single unit transfusions)* *Now please give more details in the box below*

13. What, if any, initiatives have you taken to overcome the barriers to improving compliance with NICE QS138?

Appendix C – List of additional resources

PBM toolkit information for clinicians https://hospital.blood.co.uk/patient-services/patient-blood-management/implementing-pbm/pbm-toolkit/

Blood Assist App: blood component administration, available for mobile download on android and IOS, web-based version also available here https://www.bloodassist.co.uk/terms

Pre op Anaemia: Guidance; toolkits; Information for patients (Anaemia, Iron in your diet); Quality Improvement; Blooducation; Research https://hospital.blood.co.uk/patient-services/patient-blood-management/pre-operative-anaemia/

Blood components: Indication codes App, available for mobile download on android and IOS, web-based version also available here https://www.bloodcomponents.org.uk/

PBM Anaemia management toolkits https://hospital.blood.co.uk/patient-services/patient-blood-management/anaemia/

Patient Information Leaflets https://hospital.blood.co.uk/patient-services/patient-blood-management/patient-information-leaflets/

Appropriate use of blood component toolkits https://hospital.blood.co.uk/patient-services/patient-blood-management/appropriate-use-of-blood-components/

Appendix D – List of participating sites

Addenbrooke's Hospital
Airedale NHS Foundation Trust
Alder Hey Children's NHS Foundation Trust
Aneurin Bevan University Health Board
Ashford and St Peters Hospitals NHS Foundation Trust
Barnet Hospital
Basildon University Hospital
Basingstoke & North Hampshire Hospital
Bedford Hospital
Birmingham Women's Hospital
Blackpool Teaching Hospitals NHS Foundation Trust
Bristol Royal Infirmary
Bronglais General Hospital
Broomfield Hospital
Calderdale and Huddersfield NHS Foundation Trust
Charing Cross Hospital
Chelsea & Westminster Hospital
Chesterfield Royal Hospital NHS Foundation Trust
Cleveland Clinic London
Colchester Hospital
Conquest Hospital
Croydon Health Services NHS Trust
Cumberland Infirmary
Darlington Memorial Hospital
Dartford and Gravesham NHS Trust
Diana Princess of Wales Hospital
Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust
Dorset County Hospital NHS Foundation Trust
East and North Hertfordshire NHS Trust
East Cheshire NHS Trust
East Lancashire Hospitals NHS Trust
Eastbourne District General Hospital
Fairfield General Hospital
Frimley Park Hospital
Gateshead Health NHS Foundation Trust
George Eliot Hospital NHS Trust
Glan Clwyd Hospital
Gloucestershire Hospitals NHS Foundation Trust
Great Western Hospitals NHS Foundation Trust
Guy's and St Thomas' NHS Foundation Trust
Hammersmith Hospital
Harrogate and District NHS Foundation Trust
Homerton Healthcare NHS Foundation Trust
Hull University Teaching Hospitals NHS Trust
Ipswich Hospital
James Paget University Hospitals NHS Foundation Trust

Kent & Canterbury Hospital
King's College Hospital
Kingston and Richmond NHS Foundation Trust
Lincoln County Hospital
Liverpool Heart and Chest Hospital NHS Foundation Trust
London North West University Healthcare NHS Trust
Luton and Dunstable University Hospital NHS Foundation Trust
Maidstone and Tunbridge Wells NHS Trust
Medway NHS Foundation Trust
Mid Cheshire Hospitals NHS Foundation Trust
Mid Yorkshire Teaching NHS Trust
Milton Keynes University Hospital NHS Foundation Trust
NHS Fife
NHS Lothian
NHS Shetland
North Bristol NHS Trust
North Tees and Hartlepool NHS Foundation Trust
North West Anglia NHS Foundation Trust
Northampton General Hospital NHS Trust
Northern General Hospital
Northumbria Healthcare NHS Foundation Trust
Oxford University Hospitals NHS Foundation Trust
Portsmouth Hospitals University NHS Trust
Prince Philip Hospital
Princess Royal University Hospital Farnborough
Queen Elizabeth Hospital Greenwich
Queen Elizabeth The Queen Mother Hospital
Queen's Hospital Burton
Queen's Hospital Romford
Raigmore Hospital
Royal Alexandra Hospital Paisley
Royal Berkshire NHS Foundation Trust
Royal Bournemouth Hospital
Royal Brompton Hospital
Royal Derby Hospital
Royal Devon University Healthcare NHS Foundation Trust
Royal Free Hospital
Royal Hallamshire Hospital
Royal Hampshire County Hospital
Royal Liverpool University Hospital
Royal National Orthopaedic Hospital NHS Trust
Royal Preston Hospital
Royal Surrey NHS Foundation Trust
Royal Sussex County Hospital
Royal United Hospitals Bath NHS Foundation Trust

Salford Royal Hospital
Salisbury NHS Foundation Trust
Scarborough Hospital
Scunthorpe General Hospital
Somerset NHS Foundation Trust
South Tees Hospitals NHS Foundation Trust
South Tyneside District Hospital
Southend University Hospital
St. Bartholomew's Hospital
St. George's University Hospitals NHS Foundation Trust
St. Mary's Hospital Paddington
St. Richard's Hospital
Sunderland Royal Hospital
Surrey and Sussex Healthcare NHS Trust
The Dudley Group NHS Foundation Trust
The Hillingdon Hospitals NHS Foundation Trust
The Leeds Teaching Hospitals NHS Trust
The London Clinic
The Newcastle upon Tyne Hospitals NHS Foundation Trust
The Princess Alexandra Hospital NHS Trust
The Queen Elizabeth Hospital Kings Lynn NHS Foundation Trust
The Queen Elizabeth University Hospital Glasgow
The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust
The Rotherham NHS Foundation Trust
The Royal London Hospital
The Royal Marsden Chelsea
The Royal Marsden Sutton
The Royal Oldham Hospital
The Royal Orthopaedic Hospital NHS Foundation Trust
The Royal Wolverhampton Hospitals NHS Trust
The Walton Centre NHS Foundation Trust
Torbay and South Devon Healthcare NHS Foundation Trust
University College London Hospitals NHS Foundation Trust
University Hospital Lewisham
University Hospital Llandough
University Hospital of North Durham
University Hospital of Wales
University Hospital Southampton NHS Foundation Trust
University Hospitals of Morecambe Bay NHS Foundation Trust
University Hospitals of North Midlands NHS Trust
Walsall Healthcare NHS Trust
Warrington and Halton Teaching Hospitals NHS Foundation Trust
West Middlesex University Hospital
West Suffolk NHS Foundation Trust
Weston General Hospital

Wexham Park Hospital
Whiston Hospital
Whittington Health NHS Trust
William Harvey Hospital
Worthing Hospital
Wrexham Maelor Hospital
Wrightington
Wye Valley NHS Trust
York Hospital
Ysbyty Gwynedd