National Comparative Audit of Blood Transfusion

NHS Blood and Transplant

2016 National Comparative Audit of Red Blood Cell Transfusion in Hospices

hospice UK

Association for Palliative Medicine Of Great Britain and Ireland

Royal College of Nursing Shaping nursing since 1916

Marie Curie Care and support through terminal illness

Foreword

Red blood cell transfusion is sometimes given in hospice palliative care for the treatment of anaemia accompanied by symptoms such as breathlessness or fatigue. Despite the publication of national guidance from the National Institute for Health and Care Excellence (NICE) and the British Committee for Standards in Haematology (BCSH), current transfusion practice in hospices is unknown. Patients receiving hospice palliative care are often frail with deteriorating health and in whom anaemia may be reflection of advanced disease rather than the sole cause of their symptoms. In these patients, the benefits and harms of red blood cell transfusion are unknown, and therefore the chances of overall gain less clear. The audit aimed to determine current transfusion practice and outcomes in hospice palliative care and to make recommendations to improve future clinical care.

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HOSPICES THAT PILOTED THE AUDIT

St Gemma's Hospice & Sobell House Hospice

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KEY STAKEHOLDERS

- Royal College of Nursing
- Hospice UK
- Association for Palliative Medicine of Great Britain and Ireland
- Marie Curie

Contents

Key Words & Acronyms

NICE – National Institute for Health and Care Excellence
TACO – Transfusion Associated Circulatory Overload
BCSH – British Committee for Standards in Haematology
BSH – British Society for Haematology (BSH Guideline, previously known as BCSH Guidelines)
SHOT – Serious Hazards of Transfusion
eGFR – Estimated Glomerular Filtration Rate
MCV – Mean Corpuscular Volume
AKPS – Australia-Modified Karnofsky Scale
WHO – World Health Organisation
ECOG – Eastern Cooperative Oncology Group
TSAT – Transferrin Saturation

Summary of recommendations

1. **Update local guidance**

Hospice policies must be updated in line with current NICE and BSH guidelines including a mandatory weight check and transfusing one unit of red blood cells and then assessing clinical response (unless actively bleeding).

2. **Thorough investigation of anaemia**

Causes of anaemia must be more thoroughly investigated. In patients who had haematinics checked (30%) the data highlighted the lack of use of alternative treatments such as B12, folate and iron. These should be considered instead of or alongside blood transfusion if appropriate.

3. **Evidence-based discussion of risks and benefits**

Clinicians should discuss the limited benefit versus risks with patients to allow true informed consent. Fewer than 1 in 5 patients in this cohort had a sustained benefit (as assessed by a clinician or performance status) and most patients have two or more factors that place them at high risk of TACO. Patients should be assessed for risks of TACO prior to transfusion.

4. **Adopt restrictive trigger threshold for transfusion**

Hospices should follow NICE guidance: for patients without concurrent heart problems use a trigger threshold of 70g/L with a target haemoglobin concentration of 70-90g/L; for patients with acute coronary syndrome (for example, unstable angina) use a trigger threshold of 80g/l with target haemoglobin of 80-100g/l.

5. **All patients must be weighed to determine transfusion requirements**

Patients must be weighed prior to red cell transfusion to estimate volume of blood required. Transfusing a volume of 4ml/kg will typically give a haemoglobin increment of 10g/L [15]. Therefore, a patient weighing less than 70kg requires less than 1 unit [15]; higher volumes put patients at risk of TACO which may be mis-interpreted as worsening of underlying disease.

6. **There should be documented evidence of consent**

This should be documented verbal consent at a minimum; and ideally (but not mandated) written consent.

7. **Awareness and vigilant observations of TACO are needed**

Reduce risk of TACO by giving one unit over no more than 4 hours and reassess. Do not transfuse more than 1 unit per 24 hours unless the patient is actively bleeding.

8. **Rigorous clinical review of outcome**

Assessment should include both a haemoglobin level measurement within 24 hours and a post transfusion performance status. If transfusion was given to treat symptoms of fatigue or breathlessness, an assessment of the symptom pre and post transfusion to guide further management, and determine subsequent transfusion decisions is needed.

Introduction

Anaemia is a common complication of advanced disease and causes symptoms including fatigue and breathlessness [1] with fatigue often being the most frequently reported symptom in cancer [2]. Red blood cell transfusions may be used to manage anaemia or the symptoms caused by anaemia in advanced disease. As well as being used to address reversible elements of anaemia-related fatigue or breathlessness, blood transfusions may be used to treat active bleeding and bone marrow suppression. Pooled estimates from four studies found that 7% of patients admitted to palliative care units are transfused [3]. A survey of red blood cell transfusion practice in 10 palliative care settings found that 5.7% of hospice patients received a red blood cell transfusion and most (71%) of these received a single transfusion of 2 or 3 units of blood (76%) as an inpatient (83%) [4]. Median survival following first transfusion was 42 days [4].

There is a lack of specific national and international guidance for the use of red blood cell transfusions for patients with advanced disease requiring palliative care [5]. In 2015, The National Institute for Health and Care Excellence (NICE) published guidelines for red blood cell transfusions and recommends the use of a restrictive threshold; transfusing when haemoglobin falls below 70g/L and only transfusing one unit at a time (with a haemoglobin concentration target of 70–90g/L) in those who are not actively bleeding, do not have acute coronary syndrome or need blood transfusions for chronic anaemia [6]. The threshold recommended in these exceptional circumstances is 80g/L with a haemoglobin concentration target of 80–100g/L. These guidelines were based on clinical trials in non-palliative care contexts and their direct application to palliative care is uncertain. However, a more restrictive approach advocated by NICE is likely to be applicable to patients with advanced disease requiring palliative care because benefits may be fewer, and risks may be greater. Lack of specific guidance is nevertheless likely to result in variation in practice in UK hospices which impacts on inpatient days, cost and resource use.

Red blood cell transfusion is a potentially dangerous treatment in which adverse reactions are rare but can be fatal. The Serious Hazards of Transfusion Haemovigilance Group (SHOT) reported 26 deaths associated with transfusion in the UK in 2015 with an additional 166 reported cases of serious harm [7]. Complications include: acute transfusion reactions, bacterial contamination and transfusion associated circulatory overload (TACO). It is estimated that 1 patient in every 100 patients transfused develops TACO [8]. TACO can occur with small volumes; up to 16% of TACO cases were reported to have occurred after only a single unit [7]. Patients with advanced disease requiring palliative care are particularly vulnerable as risk factors include; hypoalbuminaemia, low body weight, being physiologically compromised by cardiac, respiratory or renal insufficiency as well as older age and faster rate of transfusion.

The British Committee for Standards in Haematology (BCSH) advises that any decision to transfuse must be based on a thorough, individualised clinical assessment of the patient [9]. Where patients are at increased risk, there is a need for specific attention to monitoring patients for signs of fluid overload during transfusion and vital signs should be recorded before, during and after transfusion to detect acute reactions [6, 9,]. It is also advised that further units are not prescribed without checking the patient's haemoglobin and assessing if the transfusion has achieved the desired effect [9]. As many palliative care patients have concurrent symptoms there is also risk that signs and symptoms of an adverse transfusion reaction may be obscured. Furthermore factors relating to the patients underlying medical condition make people with advanced illness more at risk of adverse transfusion reactions [11]. In view of the potential risks, informed consent to red blood transfusion is important. As a minimum, there should be documented evidence of rationale, risks, benefits and alternatives to transfusion being explained to the patient as well as consent to proceed [6,9].

Aims of the audit

This audit aims to:

- Determine current practice regarding red blood cell transfusion in palliative hospice care
- Compare practice against NICE and BSH guidelines on blood transfusion (summarised in Table 1)
- Develop recommendations to improve practice.

Audit standards

Table 1: The audit standards

Standard 1	**Local guidelines** Hospices should ensure that local written guidelines for the management of blood component transfusions are available to clinical staff via local procedures for dissemination.
Standard 2	**Patient Investigations** Patients are investigated for iron deficient anaemia before a red blood cell transfusion is given.
Standard 3	**Transfusion risks, benefits and alternatives** Patients are informed of the risks, benefits and alternatives prior to transfusion.
Standard 4	**Measurement of pre-transfusion haemoglobin** Patients have their haemoglobin measured prior to transfusion of red blood cells.
Standard 5	**Measurement of patient weight prior to transfusion** Patients are weighed prior to transfusion of red blood cells.
Standard 6	**Evidence of patient consent** All patients give either verbal or written consent to a red blood cell transfusion.
Standard 7	**Monitoring the patient** Patient observations are taken before, during and after every unit of red blood cells transfused.
Standard 8	**Clinical review** Patients are clinically reviewed between every unit transfused, as well as on completion of the transfusion episode.

Standards are based on NICE [6] & BSH [9]

Methodology

Methods

This was a prospective national audit of current clinical practice. The patient group were adults aged >18 years old who were given a red blood cell transfusion in a hospice. Units collected data for 3 months within the data collection period of September 2016 to December 2016. Each transfusion was included as a separate audit episode number, unless additional units were transfused within a 24-hour period. Data were collected prospectively by manually writing the data into the audit booklets, or directly onto the online audit tool.

SITE SELECTION AND RESPONSE

All adult hospices in the UK (England, Scotland, Wales and Northern Ireland) (210) were contacted to establish which ones perform blood transfusions and invite them to participate. Each individual site had a lead contact responsible for the data collection. Site leads delegated the manual recording of data into audit booklets, or completed the data collection themselves.

CASE SELECTION AND QUOTAS

Sites were asked to prospectively collect data on all blood transfusions for three months sites could start data collection in September or October 2016. Sites were asked to include a minimum of one audited transfusion, with no maximum. A transfusion episode was defined as all units of red blood cells transfused within a 24-hour period. Whilst most patients were only included once within the audit, the same patient could be re-audited if they received a subsequent transfusion after the 30-day outcome.

USE OF THE TOOL AND GUIDANCE NOTES

The audit tool was designed to check compliance against NICE guidance and the organisational questionnaire was designed in line with the recommendations of the BSH guidelines for blood administration (summarised in Table 1).

DATA ENTRY, CLEANING AND VALIDATION

The audit data from the transfusion episode was entered via a web-based audit tool specifically designed for the purpose although data could be collected on a paper proforma that was available to download.

Submitted audit data was collated by the audit project manager after the closing date for data entry and prior to issuing a national report to participating sites. Because no patient identifiable data is recorded on the website, auditors were recommended to keep an audit linkage record to assist in review of cases and validation of data. Hospices were asked to validate the audit results and were given the opportunity to contact the audit project manager with details of any data entry/data transmission errors or any missing data so that the database could be corrected prior to statistical analysis for the final report. The database was amended accordingly, mainly to rectify instances of missing data.

The Patient Audit Tool and Organisational questionnaire are shown in Appendices A & C.

Results

Who took part in the audit?

Participation and sample size

Two thirds of hospices (139/210) in the UK agreed to participate in the audit (Appendix D), with 87% (121/139) of these providing information on 465 red blood cell transfusions. These transfusion episodes occurred at 69% (83/121) of the hospices providing red blood cell transfusion data as 38 sites confirmed that they did not transfuse within the audit period.

Of the 121 hospices providing information on red blood cell transfusions, 107 were based in England, 9 in Scotland, 2 in Wales, and 3 in Northern Ireland. 83 hospices performed a red blood cell transfusion during the audit period, 74 in England, 6 in Scotland, 2 in Wales and 1 in Northern Ireland.

The mean number of transfusion episodes per hospice was 4 (Range 0-21).

Organisational Data

54 hospices (54/121 = 45%) provided organisational data

Audit Standard 1

Hospices should ensure that local written guidelines for the management of blood component transfusions are available to clinical staff via local procedures for dissemination.

96% (52/54) had a policy in place.

Policies were stated to be based on appropriate guidelines such as (NICE, BSH, Trust or local) however; the policies do not include all the essential points:

- **67% (36/54)** of policies did not include investigation for reversible causes of anaemia. Appropriate alternative treatments are unlikely to be instigated if reversible causes of anaemia are not considered.
- **91% (49/54)** do not include routinely weigh patients which puts patients at a higher risk of TACO as higher blood volumes may be transfused.
- **63% (34/54)** of policies include an assessment of performance with AKPS being the most commonly used, however this is not reflected in the transfusion episodes with only 42% of patients having one recorded.
- All hospices require consent to transfusion but only **15% (8/54)** require this to be written.
- **81% (44/54)** require staff to provide patients with written information about risks, benefits and alternatives to transfusion.
- All patients are required to wear a form of ID during their transfusion but this was not described within most policies.

Patient Demographics

A total of 465 patients received a red blood cell transfusion (defined as all red blood cell units transfused within a 24 hour period). Some of these patients may have been audited more than once within the data collection period of October to December 2016. Two-thirds (301/465) of transfusion episodes were performed as an inpatient (Table R1).

Table R1: Inpatient and Outpatient breakdown with gender

	Male	Female	National
Audited episodes	246	219	465
Inpatient	143	158	301
Day patient	103	61	164

Thirty percent of patients were over 80 years of age (Table R2)

Table R2: Patient age (n=465)

	National (%)
18 to 30	4 (<1)
31 to 50	34 (7)
51 to 80	288 (62)
> 80	139 (30)

Mean patient age 71 years old, median age 72 years old

Fifteen percent of patients had a predicted life expectancy of less than 4 weeks and 39% of patients had a predicted life-expectancy of greater than 3 months (Table R3)

Table R3: Estimated patient prognosis (n=465)

Expected prognosis	National (%)
<4 weeks	68 (15)
1 to 3 Months	216 (46)
>3 Months	181 (39)

Most transfused patients (58%; 271/465) did not have a performance status recorded prior to the transfusion (Table R4)

Table R4: Performance scale prior to transfusion (n=465)

Performance Scale	Number (%)	Range	Reference range	Mean & Median
AKPS	137 (29)	20-100	0-100	60 & 60
Barthel	10 (2)	1-4	0-20	10 & 12
Who or ECOG	38 (8)	1-4	0-5	3 & 3
Other	9 (2)	40-60	0-100	50 & 50
Not Done	271 (58)			

Nearly all patients transfused (96%; 448/465) had an underlying diagnosis of cancer (Table R5).

Table R5: Primary Diagnosis (n=465)

Primary diagnosis	National (%)
Heart Failure	4 (1)
Respiratory disease	2 (>1)
Renal failure	4 (1)
Cancer	448 (96)
Other	7 (2)

Table R6: Cancer specification breakdown (n=448)

Cancer Patient Specification	National (%)
1. Breast	27 (6)
2. Prostate	78 (17)
3. Lung	38 (8)
4. Upper GI	59 (13)
5. Lower GI	73 (16)
6. Renal & Liver	17 (4)
7. Haematological malignancies	54 (12)
8. Gynaecological	37 (8)
9. Bladder	16 (4)
10. Other	38 (8)
11. Not stated/ Unknown Primary	11 (2)
Total	448

"Other" includes: Pancreatic, Skin, Sarcoma and Brain. Grouping based on most common types of cancer in the UK [11].

Clinical Audit

Audit Standard 2

Patients are investigated for anaemia before a red blood cell transfusion is given.

29% (137/465) had haematinics checked prior to transfusion.

Cause of anaemia as judged by physicians is presented in Table R7. Most patients had anaemia of chronic disease (functional iron deficiency (FID)).

Table R7: Table: Primary cause of anaemia (n=465)

	National (%)
Active bleeding	112 (24)
Bone marrow failure	99 (21)
Anaemia of chronic disease (FID)	176 (38)
Other	12 (3)
Chemotherapy	8 (2)
Disease-related	12 (3)
Recent blood loss	5 (1)
Don't know	41 (9)

Table R8: Was the patient receiving any of the following treatments within the previous 2 months? (n=481)

	National
Chemotherapy	77
Immunotherapy	8
Radiotherapy	50
None of the above	326
Not recorded	20

Patients could receive more than one treatment

Twenty nine percent of patients **(137/465)** had known haematinic results (ferritin, B12, or folate) prior to transfusion. Only **26% (121/465)** of patients had a ferritin checked prior to transfusion (Table R9). Of these, 17% (21/121) would have benefited from iron supplementation (ferritin <30 ng/mL), and 21% (25/121) would have probably benefited from iron supplementation (ferritin <100 ng/mL and renal impairment, or cardiac failure, or chronic disease, or inflammation) [12].

Table R9: Pre-transfusion Ferritin result (n=465)

	Ferritin (%)
<30 ng/mL (Low)	21 (5)
30-99 ng/mL (Probably low)	25 (5)
100 to 200 ng/mL (Normal)	16 (3)
>200 ng/mL (High)	59 (13)
No Record	343 (74)

Only 9% (43/465) of patients had a transferrin saturation checked prior to transfusion, most (63%; 27/43) had a low transferrin saturation (<20%) which is suggestive of iron deficiency, or functional iron deficiency (FID) [13].

Table R10: Transferrin saturation test (n=465)

	Transferrin (%)
<20	27 (6)
20-40	14 (3)
>40	2 (<1)
No Record	422 (91)

The percentage of hypochromic red cells is the best-established variable for the identification of FID [12]. A level of at least 6% is indicative of functional iron deficiency that may be responsive to iron treatment [13]. 14% (66/465) of patients in the audit had the level of hypochromic red cells measured, and of these 76% (50/66) had functional iron deficiency.

Table R11: Hypochromic red cell % (n=465)

	MCV (%)
<6%	14 (3)
≥6%	50 (11)
No Record	401 (86)

Fifteen percent (71/465) of patients had a low MCV which is suggestive of iron deficiency anaemia, as long as the patient does not have a co-existing haemoglobinopathy trait. A normal MCV does not exclude iron deficiency in this patient group: of those patients with a ferritin <30ng/mL over 50% (11/21) had a normal or high MCV.

Table R12: Pre-transfusion MCV result (n=465)

	MCV (%)
<78 (Low)*	71 (15)
78 to 99.9 (Normal)	293 (63)
≥100 (High)	28 (6)
No Record	73 (16)

*An MCV < 78 was taken as the threshold for abnormal because reference ranges vary around the country and an MCV < 78 is always below the local reference range.

In total, 76 patients had iron deficiency or functional iron deficiency, defined as ferritin <30ng/mL OR at least 6% hypochromic red cells OR ferritin 30 to 100ng/mL AND estimated GFR less than 45 (Table R13) OR transferrin saturation less than 20%. In total, 73 patients had possible iron deficiency, defined as ferritin 30 to 100ng/mL OR transferrin saturation less than 20% OR MCV <78. Iron status could not be assessed in 67% (310/465) of patients.
Only 6 patients were not iron deficient (normal or high ferritin and transferrin saturations greater than 20%).

Table R13: eGFR (n=465)

	eGFR (%)
<15 (Kidney failure – G5)	6 (1)
15-29 (Severe reduction – G4)	17 (4)
30-44 (Moderate-severe reduction – G3b)	43 (9)
45-59 (Mild-moderate reduction – G3a)	70 (15)
60-89 (Mild reduction – G2)	158 (34)
>90 (Normal and high – G1)	131 (28)
No Record	40 (9)

ml/min/1.73m^2 Text relates to classification of chronic kidney disease.

Only **22% (102/465)** of patients had a B12 level checked prior to transfusion (Table R14). Of these, 12% (12/102) would have benefited from B12 injections (B12 < 200).

Table R14: Pre-transfusion B12 result (n=465)

	B12 (%)
<150 (Low)	3 (<1)
150-200 (Below recommended)	9 (2)
>200 (Normal/High)	90 (20)
No Record	363 (78)

Only **23% (105/465**) of patients had a folate level checked prior to transfusion (Table R15). Of these, 41% (43/105) may have benefited from folic acid (folate < 4.5 µg/L).

Table R15: Pre-transfusion Folate result (n=465)

	Folate (%)
<3 µg/L (low)	15 (3)
3-4.5 µg/L (Low with symptoms)	28 (6)
>4.5 µg/L (Normal/High)	61 (13)
No Record	361 (78)

Severe megaloblastic anaemia causes impaired cardiac muscle function and red blood cell transfusion should be avoided wherever possible because of the risk of causing potentially fatal circulatory overload. Seventeen patients in this audit were at risk of this complication, two due to B12 deficiency alone (B12 < 150), 14 patients were at risk due to folate deficiency alone (folate < 3 µg/L), and one patient was both B12 and folate deficient (B12 < 150 and folate < 3).

Table R16: Treatment prior to Red blood cell transfusion (n=485)

	National (%)
None	343 (71)
Oral Iron	78 (16)
IV Iron	11 (2)
Erythrocytosis-stimulating agent (ESA) therapy	3 (<1)
B12	7 (1)
Folic Acid	31 (6)
(Other)	
Unable to tolerate oral iron	7 (1)
Tranexamic acid	5 (1)

Audit Standard 3

Staff discuss with patient the risks, benefits and alternatives prior to transfusion.

71% (332/465) of patients had the risks and benefits of transfusion explained.

Audit Standard 4

Clinical staff measure Hb prior to transfusion of red blood cells in patients.

98% (457/465) of patients had haemoglobin checked prior to transfusion.

However, in 11% (49/465) haemoglobin results were more than a week before transfusion, and in only 70% (323/465) were results checked within 3 days of transfusion. In five patients (1%) the timing of the transfusion or the haemoglobin result were unknown.

Table R17: Timing of pre-transfusion haemoglobin check (n=465)

	Frequency	Percent	Cumulative Percent
No Hb result	8	-	-
No timing	5	-	-
≤3 days	323	69.5	72.3
4 to 7 days	80	17.2	89.5
>7 days	49	10.5	100
Total	465	100	-

Table R18: Pre-transfusion Hb (n=465)

	Hb (%)
≤70g/L	133 (28)
71-80g/L	191 (41)
81-90g/L	106 (23)
91-100g/L	23 (5)
>100g/L	4 (1)
No Record	8 (2)

Mean Hb 75g/L, Median Hb 76g/L

Most (69%) patients had a pre-transfusion haemoglobin level less than or equal to 80g/L (Table R18).

Audit Standard 5

Staff weigh patients prior to transfusion of red blood cells.

15% (68/465) of patients were weighed prior to transfusion (Table R19).

According to BSH guidelines on administration of blood components (addendum 2012) [14]
Prior to transfusion *"clinical assessment should include an evaluation of the patient's age, **body weight** and concomitant medical conditions that predispose to TACO: cardiac failure, renal impairment, hypoalbuminaemia and fluid overload. These factors should be **documented in the patients' clinical notes** and should be considered when prescribing the volume and rate of the transfusion, and in deciding whether diuretics should be prescribed."*

Table R19: Patient weight (n=465)

	National (%)
<50kg	10 (2)
51-70kg	34 (7)
>70kg	24 (5)
Not recorded	397 (85)

Mean patient weight 67kg, median weight 64kg

Audit Standard 6

All patients give either verbal or written consent to a red blood cell transfusion.

There was documented evidence that **91% (422/465)** of patients had provided mostly verbal consent to transfusion.

Details of transfusion

The table below identifies the main reason for transfusion. Sites were asked to select the category which best described the reason for transfusion; multiple answers were allowed to be selected. The majority of patients were transfused for low Hb and breathlessness, or low Hb alone (419 combined); with no other reason than fatigue (75) as the third most common answer. At least 43 of transfusions may have been given as part of a maintenance treatment for a haematology patient with the addition of 24 at patient request.

Table R20: Reason for red cell transfusion (n=614)

	National
Breathlessness and low Hb	182
Low Hb	237
Maintenance treatment for haematology patient	43
Patient request	24
Other	53
No reason other than fatigue	75

Table R21: Reason for transfusion against pre-transfusion Hb (n=465)

	No reason	Breathlessness and low Hb	Low Hb	Maintenance treatment	Patient request	Other
≤70g/L	13	53	78	8	12	13
71-80g/L	35	79	95	15	5	23
81-90g/L	19	26	42	9	5	12
91-100g/L	4	8	6	8	1	4
>100g/L	1	2	2	4	0	0

Audit Standard 7

Patient observations are taken before, during and after every unit of red blood cells transfused.

86% (400/465) of patients had their observations checked before, during and after the first unit of the transfusion.

Table R22: Observations (n=465)

	Yes (%)	No (%)	Missing
• Observations at 60 minutes prior to transfusion	451 (97)	14 (3)	0 (0)
• Observations taken 15 minutes after transfusion start time?	441 (95)	24 (5)	0 (0)
• Observations taken at 60 minutes post-transfusion?	423 (91)	42 (9)	0 (0)
• Was the Hb measured after each unit transfused?	2 (<1)	462 (99)	1 (<1)
• Was a post-transfusion Hb taken at the end of the transfusion episode?	131 (28)	333 (72)	1 (<1)

Table R23: Red blood cell units given (n=909)

	National (%)
One	75 (16)
Two	347 (75)
Three	33 (7)
Four or more	10 (2)

Mean number of units transfused 2, median 2.

35 patients under 70 kg had 2 or more units transfused, and 10 patients under 50kg had 2 or more units transfused exposing them to high risk of TACO.

Table R24: Transfusion duration for audited unit (n=465)

	Time (%)
<1 hour	3 (<1)
1-2 hours	85 (18)
2-3 hours	156 (34)
3-4 hours	105 (23)
>4 hours	36 (8)
No Record	80 (17)

Mean time taken for transfusion 3 hours (2:58), Median time 3 hours (2:50)

Audit Standard 8

Patients are clinically reviewed between every unit transfused, as well as after the transfusion episode are complete.

5% (25/465) of patients had a haemoglobin level check after every unit transfused.
75 patients had a single unit transfusion (23 post-transfusion Hb results), 490 patients had at least two units of blood, only 2 patients had an Hb check between units.

Table R25: Post-transfusion Hb (n=465)

	Hb (%)
≤70g/L	9 (2)
71-80g/L	9 (2)
81-90g/L	32 (7)
91-100g/L	42 (9)
>100g/L	37 (8)
No Record	336 (72)

Mean Hb 93g/L, median 92g/L

Table R26: 30 Day outcome (n=465)

	National (%)
• Patient still admitted with no improvement	21 (5)
• Patient still admitted with transient improvement in symptoms lasting <14 days	28 (6)
• Patient still admitted with improvement in symptoms still noted at 30 days	10 (2)
• Patient at home with no improvement	29 (6)
• Patient at home with transient improvement in symptoms lasting <14 days	114 (25)
• Patient at home with improvement in symptoms still noted at 30 days	73 (16)
• Patient died	150 (32)
• Not recorded	40 (9)

Only 83 (18%) had an improvement still noted at 30 days; 150 (32%) were dead at 30 days, over double the predicted prognosis; 142 (31%) transient improvement, 50 (11%) no improvement

Table R27: 30 Day performance scale after transfusion (n=465)

	Number (%)	Range	Reference range	Mean & Median
AKPS	52 (11)	10-80	0-100	50 & 50
Barthel	1 (<1)	2	0-20	2 & 2
Who or ECOG	6 (1)	3-4	0-5	3 & 3
Other	7 (2)	10-70	0-100	40 & 40
Not Done	399 (86)			

Discussion

This audit achieved its aims which were to determine current practice regarding red blood cell transfusion in UK palliative hospice care and compare current practice against NICE standards. We consider the audit as representative of UK practice because two thirds of hospices in the UK agreed to participate in the audit with 121/210 (58%) of these providing information on 465 red blood cell transfusion episodes. Although co-ordinating many independent sites was challenging, it has given us the most comprehensive picture ever of red blood cell transfusion practice in UK hospices and the response rate highlighted the importance of the topic to palliative care physicians. Knowing how many sites did not transfuse during the study period (37) is also very helpful in understanding national practice.

Table D1 Comparison with Audit Standards

		Comments
Standard 1	**Local guidelines** Hospices should ensure that local written guidelines for the management of blood component transfusions are available to clinical staff via local procedures for dissemination.	45% responded, of these **96%** had a red blood cell transfusion policy.
Standard 2	**Patient Investigations** Patients are investigated for iron deficient anaemia before a red blood cell transfusion is given.	**29**% of patients had the cause of anaemia investigated prior to transfusion.
Standard 3	**Transfusion risks, benefits and alternatives** Patients are informed of the risks, benefits and alternatives prior to transfusion.	**71**% of patients had evidence of discussion of transfusion risks.
Standard 4	**Measurement of pre-transfusion haemoglobin** Patients have their haemoglobin measured prior to transfusion of red blood cells.	**98%** had haemoglobin recorded and in 68% it was 80g/L or less.
Standard 5	**Measurement of patient weight prior to transfusion** Patients are weighed prior to transfusion of red blood cells.	**15%** of patients had their weight recorded.
Standard 6	**Evidence of patient consent** All patients give either verbal or written consent to a red blood cell transfusion.	**91%** of all patients had documented verbal or written consent.
Standard 7	**Monitoring the patient** Patient observations are taken before, during and after every unit of red blood cells transfused.	**86%** had observations pre-transfusion, at 15 minutes and 60 minutes.
Standard 8	**Clinical review** Patients are clinically reviewed between every unit transfused, as well as on completion of the transfusion episode.	**5%** of patients had a haemoglobin check after each unit and 28% had a post haemoglobin check at any time point. 14% had a post transfusion performance status documented.

Audit Standard 1

Hospices should ensure that local written guidelines for the management of blood component transfusions are available to clinical staff via local procedures for dissemination.

The low response to the organisational component of this audit limits the conclusions drawn from these data. Although most units had a policy in place, these policies did not appear to reflect NICE or BSH guidance specifically relating to trigger threshold for red blood cell transfusion, assessing weight and performance status, requiring patients to wear identification and reassessment after each single unit transfused.

Audit Standard 2

Patients are investigated for anaemia before a red blood cell transfusion is given.

176 (38%) had anaemia of chronic disease as the primary cause of their anaemia, this was the largest single cause and may be amenable to alternative treatments but 344 (70%) had had no previous treatment for their anaemia before red blood cell transfusion.

448/465 (96%) of patients had a cancer diagnosis and different cancer types had different documented causes of anaemia.

a. Gastrointestinal, renal, bladder and gynaecological malignancies had blood loss as the largest cause of anaemia
b. Prostate and haematological malignancies had higher rates of bone marrow failure
c. Lung cancer had anaemia of chronic disease as the largest cause

We collected other blood parameters which would help determine the type and cause of anaemia. Tests were not performed widely so firm conclusions cannot be drawn: 91% had no TSAT, 74% had no ferritin and 86% had no %hypochromic red cells. If anaemia is poorly investigated then it is unlikely alternative treatments will be explored. These treatments may be less risky, more cost effective and more clinically effective if they are targeting the true cause of anaemia.

Only 8% (1/12) of patients with a low B12 (B12 <200) were on treatment with B12 injections, and only 23% (10/43) of patients with a low folate level (folate <4.5 µg/L) were on treatment with folic acid. Red blood transfusion is not recommended for megaloblastic anaemia due to the risk of fatal complications. If anaemia is due to B12 or folate deficiency a rise in haemoglobin can be expected in 3 to 4 days after starting treatment.

Of the 76 patients who had iron deficiency or FID, only 26% (20/76) were on iron and 3% (2/76) were intolerant of iron. Of the 73 patients with possible iron deficiency, only 23% (17/73) were on iron and 3% (2/73) were intolerant of iron. In most cases, iron deficiency anaemia can be treated with iron (oral or intravenous). In patients without acute blood loss, transfusion should only be considered if an immediate rise in Hb concentration is essential on clinical grounds: symptoms of severe anaemia such as chest pain or congestive heart failure. If oral iron is poorly tolerated there is now evidence of benefit from low dose oral iron which can be effective and has fewer side effects [14].

Only three patients were on erythrocytosis-stimulating agent therapies (Table R164) even though 66 patients had a moderate or severe reduction in renal function (Table R13). However it was not clear whether observed renal impairment was acute or chronic, and so no recommendations can be made about use of these agents. Only five patients (1%) were on tranexamic acid (Table R16), which is known to reduce blood loss despite 25% (117/465) of patients having active or recent blood loss Table R7.

Audit Standard 3

Staff discuss with patient the risks, benefits and alternatives prior to transfusion.

Only 71% of patients had the risks and benefits of transfusion explained. The liberal approach that was identified in this audit to trigger threshold and number of units transfused implies that benefits may be overstated and risks underestimated. A more accurate description of likely benefits and risks would help patients to make more informed decisions:

> Benefits: around 1 in 5 were judged by clinicians to experience benefit up to 30 days post-transfusion, with no evidence that performance status improved
>
> Risks: a high risk of TACO with two or more of the previously described patient factors present: weight below 50kg, low albumin, cardiac or renal impairment (GFR<45), older age (>70), and more than 1 unit transfused per day).

Patients with advanced disease treated in hospice are very likely to be at high risk of TACO: 54% of patients transfused were over 70 years old, 63% had some level of renal insufficiency and 75% had two or more units transfused.

Audit Standard 4

Clinical staff measure Hb prior to transfusion of red blood cells in patients.

The mean pre-transfusion haemoglobin was 75g/L and median 76g/L. NICE recommend a trigger threshold of 70g/l but if patients have cardiac problems it is 80g/L. Unfortunately, we did not ask about concurrent heart conditions so we can not establish an accurate figure in relation to this. 191 (41%) had a pre-transfusion haemoglobin between 71-80g/L. 133 (31%) had a pre-transfusion haemoglobin over 80g/L which is above the higher threshold NICE recommended.

Audit Standard 5

Staff weigh patients prior to transfusion of red blood cells.

397 patients (85%) did not have a weight recorded which means an assessment of appropriate volume of blood to transfuse could not be made. Of the few patients weighed, the mean patient weight was 67kg with a median weight 64kg. A unit of blood is proportioned for a 70-80kg person [14]. It is essential that every patient is weighed as this may lead to a reduction in the volume of blood required; higher volumes put patients at risk of TACO which may be hard to diagnose in this patient group. Patients should be assessed for risks of TACO prior to transfusion.

Audit Standard 6

All patients give either verbal or written consent to a red blood cell transfusion.

Across the UK, 91% of all cases were shown to have a form of verbal or written consent to the transfusion. Although NICE guidance does not require written consent from patients, it is good practice for clinicians to document the consent in the patient's healthcare records.

Audit Standard 7

Patient observations are taken before, during and after every unit of red blood cells transfused.

Patients should be given at most one unit and assessed before further units are prescribed, in accordance with NICE guidelines (excluding those who are actively bleeding; 24% in this audit). We found that 84% (390/465) of patients had more than 1 unit given in the transfusion episode. Patients of low weight should receive a weight-related transfusion which may be less than one unit. More awareness and vigilant observations of TACO are needed in this high-risk patient group.

Audit Standard 8

Patients are clinically reviewed between every unit transfused, as well as after the transfusion episode are complete.

Only 25 (5%) had a haemoglobin check after each unit and 337 (72%) had no post transfusion haemoglobin check at all. Of the 25 patients who had a haemoglobin check after each unit, only two patients went on to have further units transfused. This may indicate a lower rate of transfusion in those who had a haemoglobin check and demonstrates the poor adherence to guidance. 336 (72%) did not have a post transfusion haemoglobin check, of those who did the mean time to blood test was 7 days (median 9 days). For hospices where blood tests are not usually analysed on site, we recommend a more realistic timescale of within 24 hours.

The majority of patients were transfused for low haemoglobin and breathlessness and low haemoglobin (421 combined); with no other reason than fatigue (75) as the third most common answer. An assessment of performance status pre and post transfusion would enable clinicians to evaluate clinical benefit and guide decisions on future repeat treatments. 271 (58%) did not have any recorded performance status assessment and 401 (86%) had no post transfusion performance status recorded. AKPS was the most frequently used scale.

Only 53 patients had a pre and post transfusion performance status recorded. A variety of scales were used but overall 17% (9) had an increase in score, 43% (23) had no change and 40% (21) had a lower score; in total 83% showed no improvement in performance status post-transfusion. There are many factors which influence performance status but if a transfusion is aimed at improving a patients' global function then a measurement of change in performance status would guide future management.

Only 83 patients (18%) had a benefit from the red cell transfusion persisting up to 30 days as assessed by a physician; very similar to data on performance status outcomes. 192 (42%) were considered by their physician to have had no improvement or transient improvement. Although 68 (15%) patients had a predicted prognosis of less than 4 weeks, 150 (32%) of patients were dead at 30 days, over double the predicted. This highlights poor patient selection or frequent complications from red blood cell transfusion.

Clinicians should discuss the limited proven benefit of this treatment and the risks of harm with patients so that a true informed consent can be gained.

Key recommendations

1. **Update local guidance**
   Hospice policies must be updated in line with current NICE and BSH guidelines including a mandatory weight check and transfusing one unit of red blood cells and then assessing clinical response (unless actively bleeding).

2. **Thorough investigation of anaemia**
   Causes of anaemia must be more thoroughly investigated. In patients who had haematinics checked (29%) the data highlighted the lack of use of alternative treatments such as B12, folate and iron. These should be considered instead of or alongside blood transfusion if appropriate.

3. **Evidence-based discussion of risks and benefits**
   Clinicians should discuss the limited benefit versus risks with patients to allow true informed consent. Fewer than 1 in 5 patients in this cohort had a sustained benefit (as assessed by a clinician or performance status) and most patients have two or more factors that place them at high risk of TACO. Patients should be assessed for risks of TACO prior to transfusion.

4. **Adopt restrictive trigger threshold for transfusion**
   Hospices should follow NICE guidance: for patients without concurrent heart problems use a trigger threshold of 70g/L with a target haemoglobin concentration of 70-90g/L; for patients with acute coronary syndrome (for example, unstable angina) use a trigger threshold of 80g/l with target haemoglobin of 80-100g/l.

5. **All patients must be weighed**
   Patients must be weighed prior to red cell transfusion to estimate volume of blood required. Transfusing a volume of 4ml/kg will typically give a haemoglobin increment of 10g/L [15]. Therefore, a patient weighing less than 70kg may require less than 1 unit [15]; higher volumes put patients at risk of TACO which may be mis-interpreted as worsening of underlying disease.

6. **There should be documented evidence of consent**
   This should be documented verbal consent at a minimum; and ideally (but not mandated) written consent.

7. **Awareness and vigilant observations of TACO are needed**
   Reduce risk of TACO by giving one unit over no more than 4 hours and reassess. Do not transfuse more than 1 unit per 24 hours unless the patient is actively bleeding.

8. **Rigorous clinical review of outcome**
   Assessment should include both a haemoglobin level measurement within 24 hours and a post transfusion performance status. If transfusion was given to treat symptoms of fatigue or breathlessness, an assessment of the symptom pre and post transfusion to guide further management, and determine subsequent transfusion decisions is needed.

Quality Account Statement

This certifies that … contributed data to the 2016 Audit of Red Blood Cell Transfusion in Hospices, and contributed data on X number of patients, which is 100% of the sample size requested. (This will be included in local reports).

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Appendix A

Patient Characteristics

1. What is the patient's gender? ☐ Male ☐ Female

2. What was the patient's year of birth? ☐

3. Was the patient an ☐ Inpatient? or a ☐ Day patient?

4. What was the patient's weight (Kg) when you audited this transfusion episode? ☐

OR ☐ Weight not recorded

5. What was the estimated prognosis for this patient at the time of this transfusion?

☐ < 4 weeks

☐ 13 months

☐ >3 months

6. Was the patient's pre-transfusion performance measured using a performance scale?

☐ Yes ☐ No

6a. If yes, what performance scale was used?

☐ Australia-modified Karnofsky Performance Scale (AKPS)

☐ Barthel

☐ World Health Organisation or Eastern Cooperative Oncology Group (05; 5=dead)

☐ Other *(please state)*

☐

6b. What was the pre-transfusion performance score? (*Please state score value and score range i.e. 50; range 10-100*)

Value	Range

7. Is there documented evidence that the patient consented to this transfusion?

☐ Yes ☐ No

8. Is there any evidence within the notes that the patient was given information about transfusion risks, benefits and alternatives?

☐ Yes ☐ No

Diagnosis

9. What is the underlying primary disease? *(Please tick only **one** option)*

☐ Heart failure

☐ Respiratory disease

☐ Renal failure

☐ Cancer *(please state primary site and if metastases are present)*

☐ Other *(please state)*

Likely causes of anaemia & Reason for transfusion

10. What was the primary cause of anaemia? *(Please tick only **one** option, Please add additional causes to the free text box)*

☐ Don't know

☐ Active bleeding

☐ Bone marrow failure

☐ Anaemia of chronic disease

☐ Other *(please state)*

11. What was the reason for transfusion? *(Please tick as many as apply)*

NB: Fatigue/lethargy/tiredness are already assumed to be present so need not be recorded

☐ No other reason than fatigue, etc.

☐ Breathlessness & Low Hb

☐ Low Hb

☐ Maintenance treatment for haematology patient

☐ Patient request

☐ Other (*please state*)

12. What was the nearest pre-transfusion Hb, taken before the time of the transfusion you are auditing? ☐☐☐

☐ Don't know (*If ticked, go to Q14*)

13. What was the date of that Hb result? ☐☐ ☐☐ 2016

Investigation prior to transfusion

14. Please provide the dates and results of the most recent haematological investigations or tick the "no record" column if you cannot find a result

Test	Result	Date	No record
MCH			
MCV *femtolitres*			
Hypochromic red cell %			
Ferritin			

If you provided a Ferritin result, please state the laboratory's reference range

Reference range

15. If a transferrin saturation test was done, please provide the result and the date.

Test	Result	Date	No record
Transferrin saturation test			
B12			
Folate			
eGFR			

If you have entered an eGFR result, you do not need to answer Q's 16 & 17.

16. If the eGFR was not done, what was the creatinine level taken nearest before the date of transfusion?

17. How would you describe the patient's ethnic origin?

☐ White/Other ☐ Black/African/Caribbean/Black British

Treatment prior to transfusion

18. Was the patient on any of the following treatments, prior to transfusion, for anaemia? (*Please tick all that apply*)

- ☐ None
- ☐ Oral iron
- ☐ IV iron
- ☐ Erythrocytosis-stimulating agent (ESA) therapy
- ☐ B12
- ☐ Folic acid

Please add comments about treatments, if you wish

19. Was the patient receiving any of the following *within the last 2 months?* (*Please tick all that apply*)

- ☐ Chemotherapy
- ☐ Immunotherapy
- ☐ Radiotherapy
- ☐ None of the above
- ☐ Not recorded

Details of the Red Cell Transfusion that you are auditing

If you will find it useful for audit purposes, record the donation number of the red cell unit you are auditing. This will not be included in data captured for the audit.

G

20. What was the date of the red cell transfusion that you are auditing?

☐☐ ☐☐ 2016

21. What was the start time of this RBC unit? ☐☐ ☐☐ ☐ Not recorded

22. What was the stop time of this RBC unit? ☐☐ ☐☐ ☐ Not recorded

23. Were pre-transfusion observations taken? ☐ Yes ☐ No
(*Within 60 minutes prior to transfusion*)

24. Were observations taken at 15 minutes? ☐ Yes ☐ No
(*15 minutes after starting the transfusion*)

25. Were post-transfusion observations taken? ☐ Yes ☐ No
(*Within 60 minutes of completing the transfusion*)

26. How many units were given in this transfusion episode?

(A transfusion episode is defined as all units transfused within a 24 hour period)

☐☐

27. Was the Hb measured after each unit transfused? ☐ Yes ☐ No

28. Was a post-transfusion Hb taken at the end of the transfusion episode?
☐ Yes ☐ No

29. If yes, what was the Hb? ☐☐☐ g/L and the date? ☐☐ ☐☐ 2016

30 day outcome

30. What was the 30 day outcome? *If "patient still admitted with" or "patient at home with" is ticked, please answer the perceived benefits to the patient and performance status questions. If "patient died" is ticked, please answer questions 32 and 33.*

☐ Not recorded

☐ Patient still admitted with:
- ☐ No improvement
- ☐ Transient improvement in symptoms lasting < 14 days
- ☐ Improvement in symptoms still noted at 30 days

☐ Patient at home with:

- ☐ No improvement
- ☐ Transient improvement in symptoms lasting < 14 days
- ☐ Improvement in symptoms still noted at 30 days

☐ Patient died

31. Was the patient's 30 day performance status measured using a performance scale?

☐ Yes ☐ No

31a. *If yes, what performance scale was used?*

☐ Australia-modified Karnofsky Performance Scale (AKPS)

☐ Barthel

☐ World Health Organisation or Eastern Cooperative Oncology Group (05; 5=dead)

☐ Other *(please state)*

31b.What was the 30 day performance score? (*Please state score value and score range i.e. 50; range 10-100*)

Value	Range

32. Patient's date of death ☐☐ ☐☐ 2016

33. Was this patient's death unexpected? ☐ Yes ☐ No

END OF AUDIT TOOL

Appendix B - Reason for anaemia according to type of cancer

Type of cancer	Active bleeding	Anaemia of chronic disease	Bone Marrow Failure	Don't know	Other please state	Total
Breast Cancer	2	9	9	6	1	27
	7.4%	33.3%	33.3%	22.2%	3.7%	100.0%
Prostate Cancer	8	24	33	8	5	78
	10.3%	30.8%	42.3%	10.3%	6.4%	100.0%
Lung Cancer	3	24	1	3	7	38
	7.9%	63.2%	2.6%	7.9%	18.4%	100.0%
Gastrointestinal	57	58	2	8	8	133
	42.9%	43.6%	1.5%	6.0%	6.0%	100.0%
Haematological Malignancy	3	6	44	1	0	54
	5.6%	11.1%	81.5%	1.9%	0.0%	100.0%
Gynaecological	14	14	1	4	4	37
	37.8%	37.8%	2.7%	10.8%	10.8%	100.0%
Renal & Bladder	15	14	0	2	3	34
	44.1%	41.2%	0.0%	5.9%	8.8%	100.0%
Other	7	16	4	4	7	38
	18.4%	42.1%	10.5%	10.5%	18.4%	100.0%
Unknown primary	3	4	2	2	0	11
	27.3%	36.4%	18.2%	18.2%	0.0%	100.0%

Appendix C - 2016 Audit of Red Blood Cell Transfusion in Hospices
Organisational Survey

1. Does your hospice have a policy in place for the transfusion of red blood cells?
Yes ☐ No ☐

2. If yes, is it based on:
NICE Guidelines ☐
BCSH Guidelines ☐
Other (please state):

3. Does the policy include investigating the patient for a reversible cause of anaemia?
Yes ☐ No ☐

4. Do you routinely weigh your patient's? Yes ☐ No ☐

5. Do you use a form of performance assessment? Yes ☐ No ☐

5a. If yes, is this:
Australia-Modified Karnofsky Performance Scale (AKPS) ☐
Barthel ☐
WHO or ECOG (05; 5=dead) ☐
Other (Please State)

6. Do you require patients to consent to blood transfusion? Yes ☐ No ☐

6a. If yes, is this consent obtained:
Verbally ☐
In writing ☐

7. Does your policy require staff to provide patients with written information about the risks, benefits and alternatives to transfusion? Yes ☐ No ☐

8. Does your policy require your patients to wear a form of ID during their transfusion? Yes ☐ No ☐

Appendix D – Sites that participated in the audit

All of the below sites were sent a stationary pack.

Accord Hospice
Alan Hudson Centre
Ardgowan Hospice
Arthur Rank House Hospice
Ashgate Hospice
Barnsley Hospice
Bethesda Hospice
Birmingham St. Mary's Hospice
Bolton Hospice
Butterwick Hospice Bishop Auckland
Butterwick Hospice Stockton
Compton Hospice
Cornwall Hospice Care
Countess Mountbatten House
Countess of Brecknock House
Cransley Hospice
Cynthia Spencer Hospice
Douglas Macmillan Hospice
Earl Mountbatten Hospice
East Cheshire Hospice
East Lancashire Hospice
Eden Valley Hospice
Ellenor Lions Hospices
Farleigh Hospice
Florence Nightingale Hospice
Foyle Hospice
Garden House Hospice
Greenwich & Bexley Cottage Hospice
Hartlepool & District Hospice
Hayward House
Hospice in the Weald
Hospice of The Good Shepherd
Hospiscare (Sidmouth)
Isabel Hospice
John Eastwood Hospice
Kirkwood Hospice
Loros Hospice
Marie Curie Belfast
Marie Curie Cancer Care, Solihull

Marie Curie Edinburgh
Marie Curie Glasgow
Marie Curie Hospice (Bradford)
Marie Curie Hospice (Liverpool)
Marie Curie Hospice (Newcastle upon Tyne)
Marie Curie Hospice Cardiff and the Vale
Marie Curie Hospice Hampstead
Mary Stevens Hospice
Meadow House Hospice
Myton (Warwick, Coventry, rugby)
Nightingale Macmillan Unit
North London Hospice (Finchley and Winchmoe Hill)
Oakhaven Hospice Trust
Overgate Hospice
Peace Hospice Care
Pendleside Hospice
Phyllis Tuckwell Hospice
Pilgrims Hospice (Ashford)
Pilgrims Hospice (Canterbury)
Pilgrims Hospice (Margate)
Prince and Princess of Wales Hospice
Princess Alice Hospice
Queenscourt Hospice
Rotherham Hospice
Rowcroft Hospice
Royal Trinity Hospice
Salisbury Hospice
Sam Beare Hospice
Sobell House Hospice
Southern Area Hospice Services
Springhill Hospice
St Columba’s Hospice
St David's Hospice
St Francis Hospice
St Gemma's Hospice
St Kentigern's Hospice
St Luke's Hospice
St Luke's Hospice Cheshire
St Nicholas Hospice Care
St Oswald's Hospice
St Raphael's Hospice
St. Andrew's Hospice (Lanarkshire)
St. Ann's Hospice (Cheadle)

St. Barnabas House
St. Barnabas Lincolnshire Hospice
St. Benedicts Hospice
St. Catherine's Hospice (Crawley)
St. Catherine's Hospice (Preston)
St. Catherine's Hospice (York)
St. Christopher's Hospice (Sydenham and Bromley)
St. Clare's Hospice Centre
St. Giles Hospice
St. Helena Hospice (Clacton)
St. Helena Hospice (Colchester)
St. John's Hospice
St. Joseph's Hospice (London)
St. Leonard’s Hospice
St. Luke's Hospice
St. Luke's Hospice (Basildon and Thurrock)
St. Luke's Hospice Harrow & Brent
St. Margaret's Somerset Hospice (Taunton)
St. Mary's Hospice
St. Michael's Hospice (Harrogate)
St. Michael's Hospice (Hereford)
St. Peter's & St. James Hospice
St. Peter's Hospice
St. Richard's Hospice Foundation
St. Rocco's Hospice
St. Teresa's Hospice
St. Vincent's Hospice
Strathcarron Hospice
Sue Ryder Duchess of Kent House
Sue Ryder Dutchess of Kent
Sue Ryder Leckhamptom court
Sue Ryder Manorlands
Sue Ryder Nettlebed Hospice
Sue Ryder St John's
Sue Ryder Thorpe Hall
Sue Ryder Wheatfield’s Hospice
Teeside Hospice Care Foundation
Thames Hospice
The Dorothy House Hospice Care
The Heart of Kent Hospice
The Martlets Hospice
The Pasque (Keech) Hospice
The Prince of Wales Hospice

The Rowans Hospice
Trinity Hospice & Palliative Care Services
Ty Olwen Hospice
Wakefield Hospice
Weldmar Hospicecare Trust
Weston Hospicecare Ltd
Wigan & Leigh Hospice
Willen Hospice
Willow Burn Hospice
Willow Wood Hospice
Willowbrook Hospice
Wirral Hospice St Johns
Woking Hospice (Woking)
Woodlands Hospice

Appendix E – Organisational Data

Table 1: Does the hospice have a policy in place? (N=54)

	National (%)
Yes	52 (96)
No	2 (4)

Table 2: Policy used (N=54, 73 options selected)

	National
• NICE Guidelines	12
• BCSH	31
• Local or trust guidelines	24
• Other	5
• Not stated	1

"Other includes RCN, transfusion handbook, BSQRS 2005"

Table 3: Does this policy include investigating for reversible causes of anaemia?

	National (%)
Yes	16 (30)
No	36 (67)
Not stated	2 (4)

Table 4: Do you routinely weigh your patients?

	National (%)
Yes	5 (9)
No	49 (91)

Table 5: Do you use a form of performance assessment?

	National (%)
Yes	34 (63)
No	20 (37)

Table 6: "Yes" scales (N=34, 41 options selected)

	National
• AKPS	23
• Barthel	7
• WHO or ECOG	7
• Other	4

Sites often ticked more than one scale

Table 7: Do you require patients to consent to blood transfusions?

	National (%)
Yes	54 (100)
No	0 (0)

Table 8: What type of consent? (N=54, 56 selected)

	National (%)
Verbal	48 (86)
Written	8 (14)

Two sites stated that they required both forms of consent

Table 9: Does your policy require staff to provide patients with written information about the risks, benefits and alternatives to transfusion?

	National (%)
Yes	44 (81)
No	10 (19)

Table 10: Does your policy require patients to wear a form of ID during their transfusion?

	National (%)
Yes	52 (96)
No	1 (2)
Not stated	1 (2)