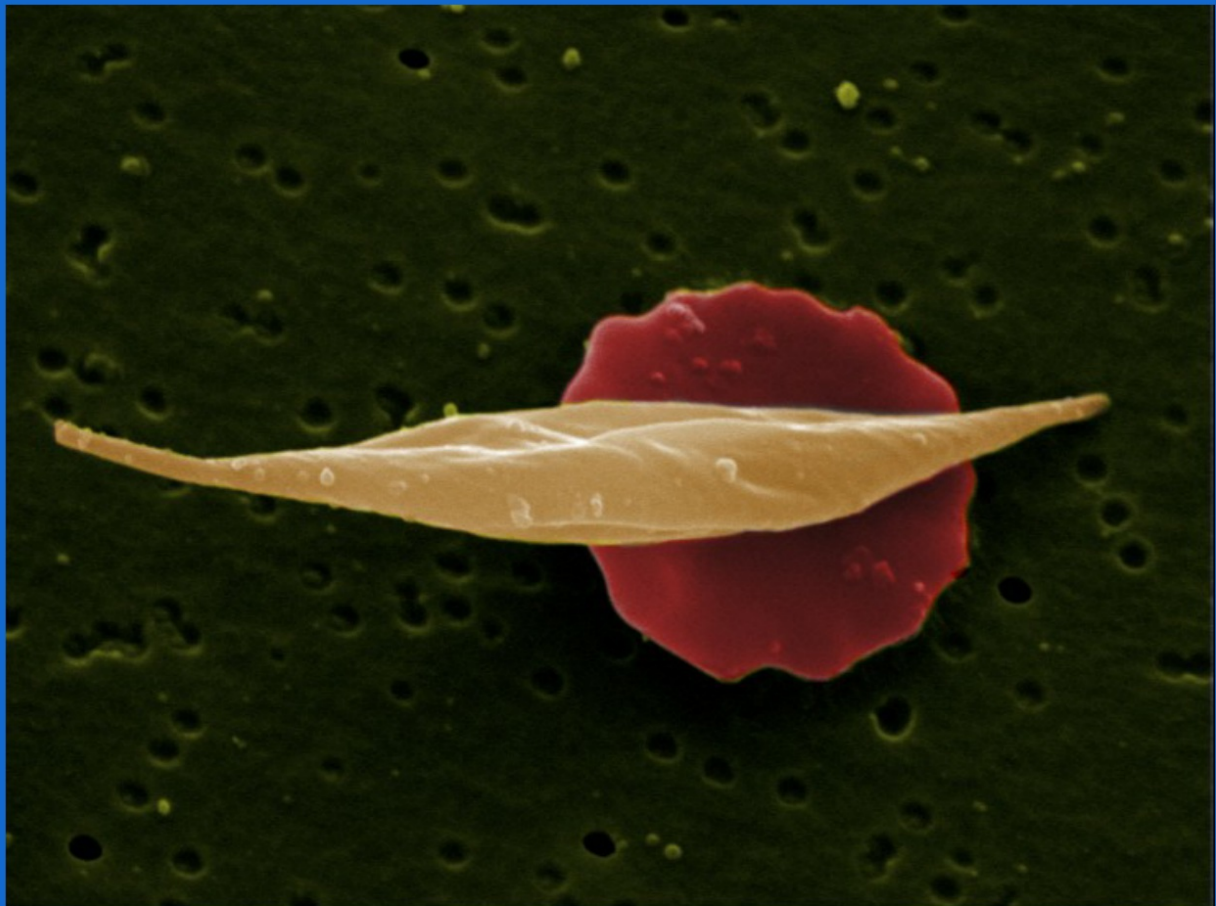


National Comparative Audit of Blood Transfusion

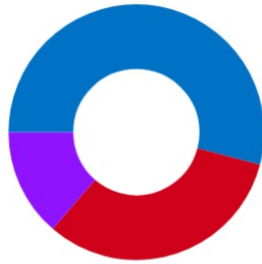
2014 Audit of Transfusion in Children and
Adults with Sickle Cell Disease



Wellcome Images

PARTICIPATION

Audit was conducted from September to December 2014 in hospitals throughout UK & Ireland.



- 54% (99/183) of hospitals contributed data
- 32% (59/183) of hospitals said they did not treat sickle cell patients
- 14% of hospitals did not participate

NETWORK



36%
(29/80)
Special
Haemoglobinopathy
Team

60%
(48/80)
Local
Haemoglobinopathy
Team (LHT)

46% of LHTs classified themselves as part of a network

GUIDELINES

Guidelines on when to perform a red cell exchange (RCE) were available at:



57%
(40/70)
of sites for adults



41%
(29/70)
of sites for children

Of those sites that performed RCE, there were no guidelines on how to perform the procedure at:

30%
(17/56)
of sites for adults

24%
(9/38)
of sites for children

STAFFING



91%
(71/78)
of hospitals had a consultant who provided cover for sickle cell disease or had a special interest in sickle cell disease



69%
(50/73)
of hospitals had a paediatrician or paediatric haematologist who had a special interest in sickle cell disease



49% of hospitals had a clinical nurse specialist caring for adults or children
(34/70) (35/71)

ACCESS TO RED CELL TRANSFUSION



10%
(7/71)

of hospitals did not have 24 hour access to urgent red cell exchange (RCE) for adults



16%
(11/67)

of hospitals did not have 24 hour access to urgent RCE for children



93%
(66/71)

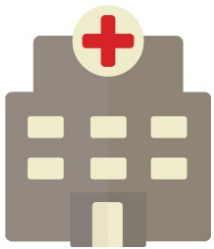
of hospitals provided elective top-up transfusions within working hours to adults



91%
(60/66)

of hospitals provided elective top-up transfusions within working hours to children

CLINICAL AUDIT



84 hospitals submitted 1290 cases



14 additional hospitals had no eligible cases during the audit period



75% of all cases came from the 18 hospitals submitting 25 or more cases

91.2%
(1164/1276)
of transfusions were administered to patients with HbSS

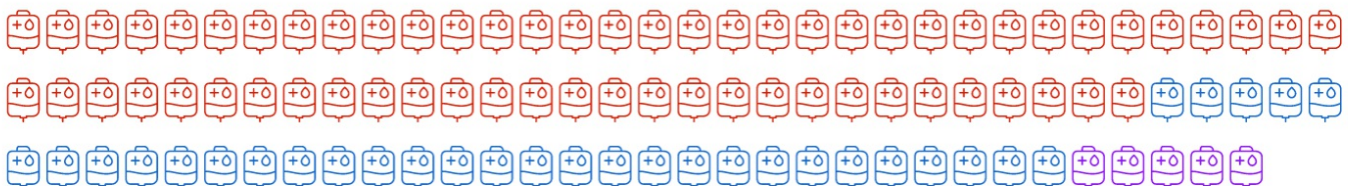


60%
(732/1227)
of patients required blood that was Rh CE negative



TYPE OF TRANSFUSION

4,528 transfusion episodes during the audit period



2785 top-up transfusions

1405 automated red cell exchanges (RCE)

261 manual RCE's



84%
(3803/4528)

of transfusion episodes were elective



Adults received
56%
(2534/4528)
of all transfusions



Automated RCE was
the most common
type of transfusion

50%
(1271/2534)



Children received
44%
(1990/4528)
of all transfusions



Top-up transfusion
was the most
common type of
transfusion

87%
(1736/1990)



Stroke prevention was the most common reason for transfusion

42%
(1914/4528)
of all transfusions

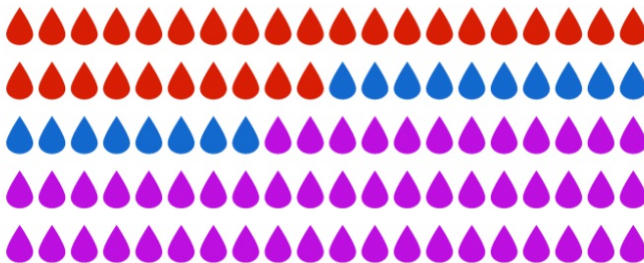


65% (1290/1990) of all transfusions to children

Another common reason for
elective transfusion was recurrent
veno-occlusive crisis

17%
(636/3803)
of elective transfusions

The main reasons for urgent transfusion were:



- Acute or chronic anaemia 30% (215/721)
- Acute chest syndrome 18% (127/721)
- Other 52% (379/721)

LABORATORY AUDIT



96%
(77/80)
of laboratories Rh and Kell-matched blood

71%
(904/1282)
of patients transfused had a full red cell phenotype or genotype
available at the time of transfusion

93%
(74/80)
of hospitals laboratory acceptance criteria for a group and save
sample if the patient had been transfused less than 28 days previously
was a maximum of 72 hours

SPECIAL REQUIREMENTS

In line with guidelines:



44%
(35/80)

of hospitals requested blood less than 7 days old for a planned RCE
20% (16/80) of hospitals did not perform RCE

26%
(21/80)

of hospitals requested blood 8-14 days old for a top-up transfusion

Outside guidelines:



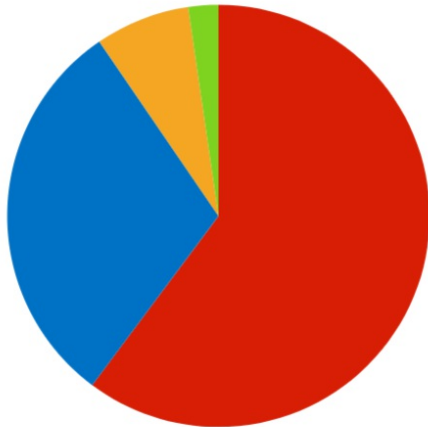
23%
(22/80)

of hospitals requested fresher blood for a top-up than required

5%
(4/80)

of hospitals routinely ask for CMV-negative blood for patients with SCD

CLINICAL SCENARIOS



We audited in more depth some patients who had had a transfusion for one of the following reasons:

- Stroke prevention (183 patients)
- Acute chest syndrome (92 patients)
- Pregnancy complication or prevention of complication (22 patients)
- Acute stroke (7 patients)

There were no cases of hyperhaemolysis

STROKE PREVENTION (183 PATIENTS)



Primary stroke prevention was common in children

80%
(82/102)

Most primary stroke prevention in children was because of abnormal transcranial doppler (72/82)



but uncommon in adults

9%
(7/81)

15 patients with a ferritin > 1000 µg/l were not on iron chelation.

ACUTE CHEST SYNDROME (92 PATIENTS)



73%
(74/102)
episodes

of patients were transfused on the ward



the majority of transfusions were top-ups

Incentive spirometry was used in only **29%** of patients
(27/92)

88%
(21/24)
53%
(41/78)

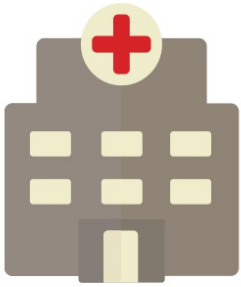
in children

in adults



KEY RECOMMENDATIONS

IMPROVING ORGANISATIONAL RESOURCES AND REGIONAL NETWORKS



There should be clear pathways and management protocols for emergency and elective blood transfusion for all patients in the geographical area including access to automated red cell exchange (RCE)

All hospitals that admit SCD patients should have protocols, training and documentation for staff in transfusion including manual RCE for children and adults.

NHS Trusts and Health Boards should undertake regular service planning and capacity arrangements to meet the growing requirements for blood transfusion in SCD. This includes the provision of out of hours transfusions for patients on long term transfusion programmes.

IMPROVING SUPPLY OF BLOOD



Blood services need to ensure availability of Ro blood.

IMPROVING TRANSFUSION LABORATORY PRACTICE

Rh and Kell blood groups should be known prior to transfusion. Red cell geno/phenotypes should be sent to the National Blood Service so that the results will be available throughout the patients' lives wherever they choose to attend for their care.

Hospitals should ensure that there is clear guidance on how staff inform the transfusion laboratory about patients who have sickle cell disease.

Transfusion laboratories should have a specific SOP on SCD which includes:

- a. Identification of a patient who has SCD including in an urgent situation
- b. Patient who may have been transfused elsewhere
- c. Use of electronic dispatch note (EDN) where available
- d. Contacting National Blood Service for any additional support in finding appropriate units for transfusion and using SpiCE or equivalent where available
- e. When consideration can be made to override age requirements of donor units
- f. When to escalate to the senior medical haematology team for support in such decisions

Hospitals should allow transfusion information sent to their National Blood Service to be shared with other hospital laboratories.

IMPROVING CLINICAL PRACTICE



Automated RCE should be more widely available to all those on long term transfusion programmes.

Transfusion decisions regarding acutely unwell patients should be discussed with the senior haematology or paediatric team.

Patients should be admitted to an HDU/ITU bed if clinical needs dictate but not solely for the purpose of a RCE procedure. Waiting for a bed to become available is likely to delay the procedure.