# **120** Avoidable Transfusions n=127

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### **Definition:**

Where the intended transfusion is carried out, and the blood component itself is suitable for transfusion and compatible with the patient, but where the decision leading to the transfusion is flawed. Every unit transfused should be an individual decision, so this might include transfusion of multiple units where not all were appropriate/necessary.

**Reporting should include:** 

- Components that are not required or are inappropriate because of erroneous laboratory results, transcription errors, miscommunication, or faulty clinical judgement
- · Components that are for an inappropriate indication
- Transfusion of an asymptomatic patient with haematinic deficiency
- Avoidable use of emergency group O blood (D-negative or D-positive) where group-specific
  or crossmatched blood was readily available for the patient or the laboratory could have
  supplied a more suitable component, including use of group O when time would allow a
  more appropriate group to be remotely allocated from a remote release refrigerator system

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### **Key SHOT messages**

- It is essential to establish the cause of thrombocytopenia before transfusing platelets. A blood film should be examined to confirm a low platelet result even in patients who might be expected to have thrombocytopenia
- Accurate patient identification is fundamental in all healthcare interactions. This involves positive patient identification at the time of taking any blood sample. It is also important when carrying out tasks such as writing in notes or on a prescription chart

### Recommendations

- Training in major haemorrhage protocols should be multidisciplinary and include all staff involved when MHP is activated
- Training should emphasise that group O red cells are only used when group-specific or crossmatched red cells are not readily available

### Action: Hospital transfusion teams

### Introduction

There were 127 reports of avoidable transfusions, similar to the 121 reported in 2022. Components involved were 109 red cells, 15 platelets, 2 FFP and 1 cryoprecipitate.

Note that where avoidable transfusions cause a reaction in a patient, such as a febrile, allergic or hypotensive reaction or TACO, these are included in the corresponding reaction chapter rather than here. The total number of transfusions reported to SHOT which were felt to be avoidable is therefore greater.

### Deaths related to transfusion n=0

There were no deaths related to avoidable transfusions in 2023.

### Major morbidity n=0

There were no patients suffering major morbidity because of an avoidable transfusion in 2023.

### Classification of avoidable transfusions n=127

Group	Red cells	Platelets	Plasma components	Total reports
Flawed decision	32	7	2	41
Appropriate decision, inappropriate component	37	0	0	37
Decision based on inaccurate results	25	5	1	31
Failure to respond to change in circumstances	7	2	0	9
Transfusion without decision	7	1	0	8
Transfusion necessitated by equipment failure	1	0	0	1
Total	109	15	3	127

Table 12b.1: Classification of avoidable transfusions by error type and blood component (n=127)



### Flawed decision n=41

Cases of flawed decision included: transfusion for haematinic deficiency (n=15), transfusion of multiple units without reassessment (n=4), transfusion outside of guidelines without clinical justification (n=12: 6 of which were platelets), overestimation of blood loss (n=5), transfusion of someone who had withheld consent (n=3), misinterpretation of thromboelastography (n=1).

### Case 12b.1: Unnecessary empirical transfusion given for upper gastrointestinal bleeding

A patient with alcoholic liver disease presented after vomiting blood at home. They were haemodynamically stable, but two units of red cells were transfused without any Hb check. The post-transfusion Hb was 125g/L.

The results suggest this patient had not lost a volume of blood sufficient to require transfusion. The 2022 National Comparative Audit of upper gastrointestinal bleeding, which is expected to be released later in 2024, has highlighted that overtransfusion is common in this patient group and is associated with adverse patient outcomes (Booth 2024, personal communication. 13 March).

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### Learning point

 Not all patients presenting with bleeding require transfusion. Unless there is haemodynamic instability, a Hb check should be performed first, and restrictive thresholds applied outside of major haemorrhage

### Appropriate decision, inappropriate component n=37

These were all avoidable use of group O red cells.

In 7 patients there was delay in sending a group and screen sample, and in 4 there were laboratory delays in sample processing.

In 15 cases, crossmatched blood was available, in 5 of these the laboratory was not told that the patient needed blood urgently, and in 10 the clinical team collected group O units in error. There is a misconception that group O is the correct component to be given in all emergencies.

### Case 12b.2: Lack of understanding of appropriate use of O D-negative red cells

The doctor caring for a trauma patient was not aware that crossmatched red cells were available and requested O D-negative emergency units. The porter delivered named patient units from the laboratory, but the nurse rejected these twice as she was expecting emergency O D-negative units rather than named patient units (D-positive). The nurse did not check the compatibility label which confirmed the units supplied were for that patient.



### Learning point

• The whole multidisciplinary team need to understand the role of group O emergency units, in particular that these are to use only to preserve life until crossmatched units are available

In 5 cases there were problems with collection of crossmatched units, though this also highlights resilience in the system protecting the patient from delays to transfusion. Two reports described errors in IT systems preventing access to crossmatched units and 3 patients were given emergency group O units when transfusion was not urgent.

### Decision based on inaccurate result n=31

Cases where decisions were based on inaccurate results included: FBC sample taken from a drip arm (n=9), inaccurate point-of-care sample (n=6), use of previous results (n=4), platelet clumping (n=4), WBIT in FBC sample (n=3), wrong patient's result used (n=2), analyser error (n=3).

### Learning point

 Wrong blood in tube is not only significant for transfusion samples. WBIT in FBC or biochemistry samples can result in inappropriate patient treatment. Positive patient identification is essential before taking any sample

## Case 12b.3: Platelet clumping in an oncology patient results in two unnecessary platelet transfusions

A FBC from a patient with leukaemia showed a significant drop in platelets compared to the previous day. The analyser flagged possible platelet aggregates, but the result was released. A blood film was made but only examined routinely the next day. This showed platelet clumping, and the count was visually normal. By this time the patient had been transfused with platelets. Another sample sent the next day again reported low platelets. No blood film was made, and a further platelet transfusion was given. The post-transfusion platelet count was 232x10<sup>9</sup>/L.

### Learning points

- Thrombocytopenia should be confirmed on a blood film even when a patient has a condition compatible with a low platelet count. Marked fluctuations in the platelet count should raise suspicion of a spurious result
- Review of blood film to confirm laboratory results in a timely manner can avoid unnecessary or incorrect treatment

## Case 12b.4: Failure to correctly identify the patient at the time of authorising the transfusion leads to transfusion of the wrong patient

A doctor had reviewed the FBC for patient A and a red cell transfusion was indicated. The doctor mixed up two patients' names and results and authorised transfusion for patient B in error. Patient B's Hb was 100g/L and they received a red cell unit they did not require.

### Learning point

• Patient identification errors resulting in inappropriate treatment can occur without the patient being present. It is essential to correctly identify the patient during any interaction

### Failure to respond to a change in circumstances n=9

Cases where there was a failure to respond to change in circumstances included: transfusion given before a procedure which was cancelled (n=3), units authorised 'just in case' for surgery transfused routinely (n=1), authorisation written in advance and recent results not checked (n=1), transfusion already given (n=2), change in decision not communicated (n=1).

One patient was given a transfusion as part of a trial protocol but was subsequently found to be ineligible for the trial.

### Transfusion without decision n=8

Seven patients received a transfusion without any completed authorisation. Three of those were patients regularly attending a day unit, and it is notable that one reporter cited staff shortage due to the junior doctors strikes as a contributory factor.

One patient had a red cell transfusion authorised rather than albumin as a result of a verbal request.

### Transfusion necessitated by equipment failure n=1

Malfunction of a haemodialysis machine resulted in a patient losing 200-300mL of blood into the circuit and a red cell transfusion was then required.



### Near miss avoidable transfusions n=3

These included 1 drip arm sample, detected due to abnormal biochemistry results taken at the same time, 1 multiple unit transfusion stopped when a family raised concerns and 1 inappropriate use of group O serendipitously blocked due to incorrect use of the remote issue refrigerator.

### Conclusion

Avoidable transfusions constitute a diverse group, but lack of knowledge, failure to question unusual results and failure of correct patient identification emerge as recurring themes. Creating additional opportunities for checks and challenge, for example use of computerised decision support and empowering laboratory and nursing staff to question inappropriate or unusual requests can increase the chance of errors being corrected before transfusion proceeds.

### **Recommended resources**

### **E-learning modules:**

### Anaemia

Includes modules 'Anaemia - the only introduction you need', 'Anaemia in primary care patients', 'Anaemia in hospital patients' and 'Anaemia of inflammation and chronic disease'. Accessible via:

https://hospital.blood.co.uk/training/clinical-courses/

### Blood component use in major haemorrhage

https://www.e-lfh.org.uk/programmes/blood-component-use-in-major-haemorrhage/

### The NHSBT O D-negative toolkit

https://hospital.blood.co.uk/patient-services/patient-blood-management/o-d-negative-red-cell-toolkit/

