NHS
Blood and Transplant

National Comparative Audit of Overnight Red Blood Cell Transfusion

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The National Comparative Audit Programme

Background information

- A series of audits designed to look at the use and administration of blood and blood components
- Open to all NHS Trusts and Independent hospitals in the UK
- Collaborative programme between NHS Blood and Transplant & Royal College of Physicians
- Endorsed by the Healthcare Commission
- Overseen by NHSBT/RCP Project Implementation Group

The National Comparative Audit Programme

Background information

- Funded from the price of blood
- Over 80% of NHS Trusts regularly participate in the audits
- BCSH guidance being reviewed as a result of bedside audits
- NPSA Safer Practice Notice 14 based on bedside audit findings (and SHOT data)
- Programme for 2008 / 09:-
  - Re-audit of bedside transfusion practice – 1.09.08
  - Re-audit of the use of platelets in haematology – Spring 2009

Overnight red cell transfusion

Why was this audit necessary?

- The Serious Hazards of Transfusion (SHOT) report has highlighted the increased risk of overnight transfusion and found that 37% of errors in which the time was reported took place between 20:00 and 08:00.
- A major learning point from the SHOT report is that transfusions should not take place out of core hours unless clinically indicated (SHOT report 2005).

Overnight red cell transfusion

Why was this audit necessary?

- There is likely to be an increased risk of a transfusion complication not being detected when a patient is transfused overnight because there may be fewer nurses to monitor the patient and there is likely to be fewer medical and laboratory staff available to respond to the complication.
- Monitoring the patient at night may be more difficult than in the day time because of reduced lighting.

Overnight red cell transfusion

Project Group for this audit

Clinical Leads;

Tony Davies, TLP NHSBT / SHOT

Tanya Hawkins, TP Royal Berkshire

Project group;

Liz Ambler, TP, Hinchinbrooke

Hazel Tinegate, Cons Haem, NHSBT

Derek Lowe, Statistician, RCP

David Dalton, NCA Office

John Grant-Casey, NCA Office

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Audit Tool Development

- Initially by telecon and e-mail
- ‘Walk-through’ of draft audit tool at two trusts (Salford Royal and Royal Berkshire)
- Further refinement of questionnaire and data sheets
- Development of web-based data entry tool
- Piloted by ~12 Trusts on a small number of patients

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What were the aims of this audit?

- **Establish the percentage of red cell units administered** between the hours of 20:00 and 08:00 hours nationally.
- **Look in detail** at 14 overnight red cell transfusions to see if they were **appropriate** according to pre-defined criteria.
- **Produce a follow-up audit** which hospitals can use to identify reasons why transfusions are given inappropriately out of hours.

Overnight red cell transfusion

What were the aims of this audit?

- **Achieve a reduction in the number** of red cells transfusions which are performed between the hours of 20:00 and 08:00 **unless they are clinically or pragmatically indicated.**

- **Use the data** from the report to compare the quality of patient monitoring in patients transfused overnight during the 2008 re-audit of bedside transfusion practice.

Participation

We invited

- 199 NHS hospitals
- 30 Independent hospitals

Who took part ?

- 190 (93%) NHS hospitals sent information
- 14 (47%) Independent hospitals sent information

Number of patients audited

- Nationally = 2138 *(out of 7206 recorded as overnight tx)*

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Methodology

- Hospitals were asked to identify all units of blood collected for transfusion in the period starting 07:31 Monday 24th September 2007 to 07:30 Monday 1st October 2007.
- They were asked to audit 14 patients who had been transfused in the overnight period (20:00 to 08:00).
- Hospitals selected their own cases, based on a quota suggested by the Project Group.

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Standards used

STANDARD 1

Patients are not transfused overnight unless clinically indicated or for practical, pragmatic reasons.

STANDARD 2

Patients transfused overnight are monitored in accordance with BCSH guidelines.

STANDARD 3

The reason for administration of red cell transfusion is documented in the patients' medical records (BCSH 1999).

Overnight red cell transfusion

Where do overnight transfusions take place?

Clinical Speciality	%
A&E	8
Elderly care	2
Gynaecology	2
Haematology	7
ITU	11
Maternity	4
Medicine	23
Oncology	3
Orthopaedic	7
Paediatric	1
Surgery	19
Other	12

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When do overnight transfusions take place?

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Time range	%
19:31-21:30	26
21:31-23:30	21
3:31-01:30	18
01:31-03:30	12
03:31-05:30	10
05:31-07:30	13

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Categories for overnight transfusion used in the audit

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Group 1 – Acute clinical need

- Patients with active bleeding / haemolysis at the time of transfusion
- Patients with low haemoglobin and symptoms

Group 2 – Less acute clinical need

- Patients transfused while in theatre
- Patients transfused to raise their haemoglobin prior to surgery the following day
- Patients transfused to raise their haemoglobin prior to a procedure the following day

Group 3 – Pragmatic need

- Patients transfused so they can be discharged same/next day
- Oncology/Haematology patients with a limited line time
- Patients transfused out of hours because they are finishing off a transfusion episode

Group 4 – Other

- Patients transfused for reasons that do not fall into the above categories

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Categories for overnight transfusion used in the audit

Acute clinical need	58%
Less acute clinical need	1%
Pragmatic need	9%
Other	32%

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Audit Results – Key Performance Indicators

- 28% patients were transfused overnight
- 80% had the reason for tx in the notes

- **Observations done at 15 minutes**

-	Acute	61%
-	Less Acute	41%
-	Pragmatic	51%
-	Other	48%

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Best Case Scenario

There will always be clinical situations where blood transfusions are required to be given overnight. To minimise risk to the patient they should satisfy the following criteria:-

- A reason for giving the transfusion was documented in medical notes
- A good clinical reason for overnight transfusion was given, defined as active bleeding / haemolysis or low Hb with symptoms
- The patient's temperature, pulse or BP was monitored within 15 minutes of the start of transfusion and the result was documented in the patient's notes.
- An Hb result was available within 2 days before transfusion

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Best Case Scenario

Compliance with 'best case scenario' = 30%

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Audit Recommendations

1. Patients without a clinical need should not be transfused overnight.

2. Hospitals should review the practice for patients in Group 3 who are being transfused to facilitate discharge, since it can be argued that those fit for discharge do not need inpatient transfusions

3. Hospitals should review the practice for patients in Group 4, since there appears to be neither a clinical nor a pragmatic reason for transfusing them overnight.

4. Hospitals should include guidelines for transfusion overnight in their transfusion policy.

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5 For all overnight transfusions, *(as with **all** transfusions),* clinical staff should, within 15 minutes of the start of each unit, take and record observations in the clinical notes.

6 Overnight transfusions should only be started if observations can be undertaken within 15 minutes of the start time.

7 The reason for transfusion, beneficial effects and adverse incidents must be documented in the patients' clinical notes.

FOUR main reasons why transfusion is not started within normal hours

- Patient not available
- Prescription not available
- Units not available from blood bank
- Clinical staff not available / free to administer units

Gather information from laboratory records

- What time was the unit collected ?
- What clinical area was it collected from – if Theatre / ED / EMAU / Maternity then it is generally an acute clinical need.
- What were the clinical details on the request ?
  (May need to look in the notes to confirm acute need)
- What was the pre-transfusion Hb ?

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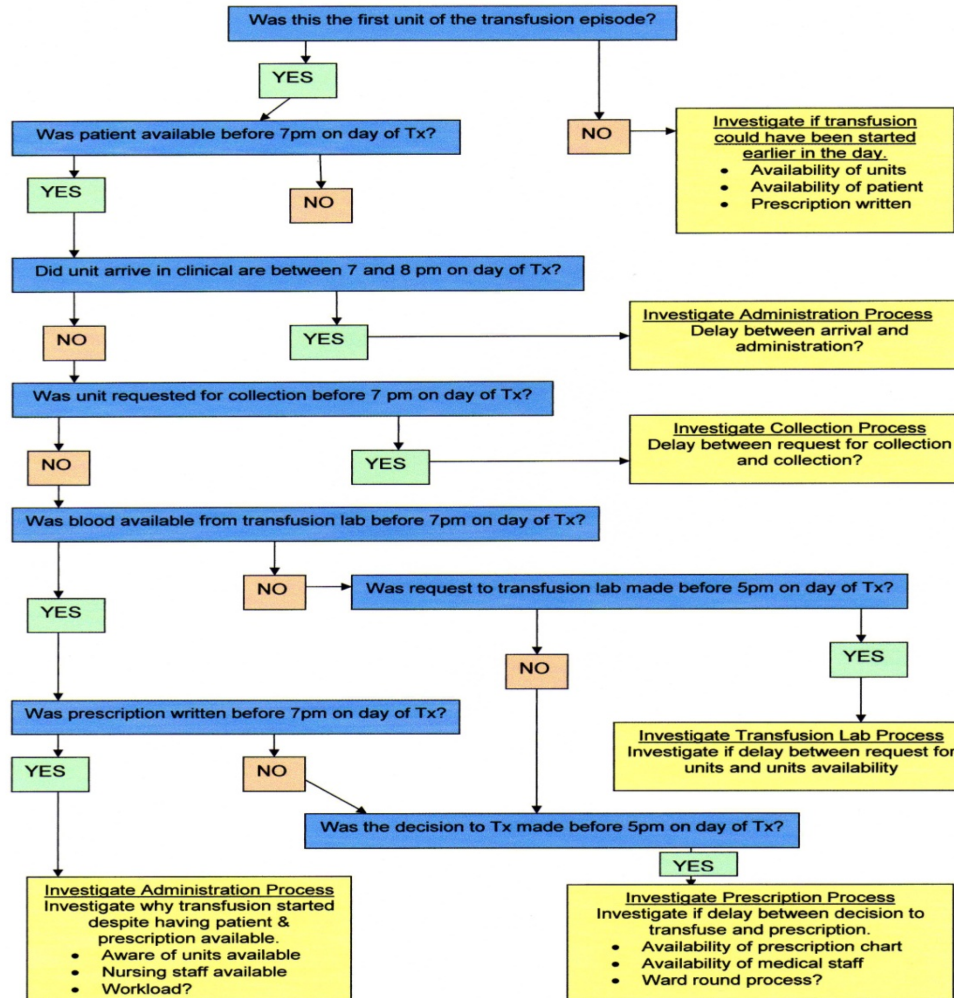
Further Audit Tools



Conclusion

The audit data suggest that many patients are being transfused for good clinical reasons, and are adequately monitored

For a significant minority, these standards are not being met

Individual Trusts need to risk-assess their capacity to perform overnight transfusion

Acknowledgements

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- Hospital staff who collected the audit data

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