Introduction
The National Comparative Audit of Blood Transfusion programme comprises a series of audits of the safe and appropriate use of blood. It is operated by NHS Blood and Transplant in collaboration with the Clinical Standards Department of the Royal College of Physicians. All hospitals in England and North Wales are invited to participate in the audits, and hospitals in South Wales, Northern Ireland and Scotland are invited to participate through the blood services in those countries.

2007/08 Audit Programme
In 2007-08 the National Comparative Audit of Blood Transfusion programme completed two audits and commenced a third. It also supported a regional audit conducted by the South West and West Midlands Region Transfusion Committees; this audit will not report until Summer 2008.

1. UK Comparative Audit of Upper Gastrointestinal Bleeding and the Use of Blood
This audit involved a collaboration with the British Society of Gastroenterology (BSG). Acute Upper Gastrointestinal Bleeding (AUGIB) is the commonest reason for emergency admission to UK hospitals with a gastrointestinal disorder. Provision of emergency care including therapeutic endoscopy is central to the management of AUGIB, which accounts for over 13% of all red blood cell transfusions in the UK. Data were collected from 217 hospitals, with 208 hospitals supplying 6750 cases for inclusion in the audit, and 205 hospitals providing organisational data.

Results
- 6750 cases were analysed: median age 68 years; 82% (5547) new admissions, 16% (1099) inpatients, 2% other.
- Mortality overall was 10% (675/6750) - a reduction from 14% in a previous audit in 1993/4. Mortality was 7% (379/5547) in new admissions and was 26% (288/1099) among inpatients – both reduced from the previous audit.
- 43% (2922/6750) of cases received at least one red blood cell (RBC) transfusion for AUGIB.
- Measured against UK guidelines 15% of RBC, 27% of FFP and 42% of platelet transfusions were deemed inappropriate.
- The overall rate of re-bleeding following endoscopy was 13% (668/5004).
- Mortality and re-bleeding rates were significantly higher in patients receiving early RBC transfusion (within the first 12 hours) compared to those not transfused (15% vs. 8% for mortality; 24% vs 7% for re-bleeding).
Recommendations

Transfusion

- Fluid replacement strategies need clarifying and guidelines for the appropriate use of blood components in AUGIB need reviewing, as a collaboration between gastroenterologists and transfusion specialists, e.g. BSG and British Committee for Standards in Haematology (BSCH).
- The process of completing transfusion guidelines (for RBC, platelets and FFP) should include the development of strategies for disseminating them amongst gastroenterologists and clinicians caring for those with AUGIB.
- Clinicians should be reminded of the risks of transfusion and the need to document the clinical indication for transfusion in all cases.
- The reasons underlying the apparent high levels of inappropriate transfusion need to be investigated.
- Clinical research is required to develop a stronger evidence base for transfusion in AUGIB.

Next steps

- Further efforts to disseminate and use the findings.
- BSG to consider how to continue the collection of audit data on a regular basis.
- BSG and NHSBT to review and rewrite UK guidelines for the management of acute upper gastrointestinal haemorrhage, and consider new clinical research.

2. National Comparative Audit of Overnight Transfusion

The premise of the audit was that transfusion at night is inherently unsafe, based on a Serious Hazards of Transfusion recommendation (SHOT 2005) that transfusions out of core hours should be avoided unless clinically essential. The audit acknowledges that some transfusions overnight are essential but that some transfusions occur that may not be deemed clinically essential. 229 hospitals were invited to participate in the audit and 204 (89%) were able to contribute some if not all data required.

Results

- 58% of patients transfused had acceptable clinical indications for the transfusion to occur out of hours.
- An additional 1.4% had an understandable, but less acute, clinical reason.
- A further 9% did not have a clinical reason for the transfusion to occur overnight, but a pragmatic (operational) reason.
- For 32% of patients there was no clinical or pragmatic reason for the transfusion to occur overnight.
- 1186/2138 (55%) of patients had observations documented within 15 minutes of the start of the unit.
- 80% of patients had reason for the transfusion recorded in the medical notes.
- There is no time period overnight when transfusion does not take place, so reasons for transfusions need to be examined whatever the time of transfusion.
Recommendations

- Hospitals **may wish** to review the practice for patients who were transfused for pragmatic rather than clinical reasons to ensure that the pragmatic reason for transfusion is justified.
- Hospitals **should** review the practice for patients for whom there appears to be neither a clinical nor a pragmatic reason for transfusing them overnight.
- Hospitals should include guidelines for overnight transfusion in their transfusion policy.
- For all overnight transfusions (as well as day time transfusions), clinical staff should, within 15 minutes of the start of each unit, take and record observations in the clinical notes.
- Overnight transfusions should only be started if observations can be undertaken within 15 minutes of the start time.

Next steps

- Create an audit tool for root cause analysis, enabling hospitals to use the tool locally to discover why units of blood are unnecessarily transfused overnight.
- Create an intervention plan for consideration by hospitals.

3. National Comparative Audit of the use of Fresh, Frozen Plasma

This audit will collect data on the use of fresh, frozen plasma in 40 consecutive patients in each hospital, with the following objectives:

- To audit the clinical use of FFP against the 2004 BCSH guidelines
- To determine dosage of FFP used
- To determine if coagulation testing is performed pre and post administration of FFP.
- To determine types of virally inactivated plasma products used and indications
- To determine use of FFP out of hours

The audit is being conducted from April to June, and expects to report in November 2008. At the time of writing this report, 214 hospitals are participating in the audit.

Impact of the National Comparative Audits of Blood Transfusion

The audit programme is beginning to have a wider impact, with two notable successes stemming from our work on bedside transfusion practice. BCSH guidelines published in 1999 on the administration of red blood cells are being revised and will incorporate some of the recommendations of our previous two audits. More notably, the National Patient Safety Agency has issued a Safer Practice Notice (14) which sets out best practice for safely identifying patients for transfusion. Much of the work included in the Notice is based on our audit recommendations. With the work in hand and the audits to come, we intend that our audits will make a timely impact on and a positive contribution towards improving blood transfusion practice.

Data sharing

Events in the NHS and government sectors led this year to concerns arising over the protection of data and data sharing. An information governance policy is being drafted, but meanwhile steps are being taken to protect the data we are given by hospitals. In particular we have been in dialogue with the Healthcare Commission about what information we might share with them. We have committed to providing the Commission with details of the hospitals that take part in our audits, but we have agreed not to share any other data with them.
We are changing the way we report hospitals’ data in the regional slideshows we produce following each audit. Previously, we have identified participants by using a code letter. With effect from the September 2008 we will include the names of hospitals/Trusts in the regional slideshows for discussion at Regional Transfusion Committee meetings, so that the results included in the slideshow can be associated with the hospital/Trust unless they opt out of having their results included. Further, we will no longer place the slideshows on our internet pages to avoid the risk of the slideshow information being taken out of context or misinterpreted.

Audit governance
To assist in the achievement of consistent quality within the audit programme, Clinical Audit Leads are supported by the use of a document "Managing & operating a national comparative audit". This document sets out the responsibilities of the Clinical Audit Leads and Project Group members and sets out, step by step, how each audit will be designed and managed. A copy of this document is available on request from the Project Manager.

Audit performance indicators
The National Comparative Audit of Blood Transfusion Steering Group has developed a number of performance indicators which we will use to evaluate the effectiveness of the audit programme. These include:

- Recruitment and retention of hospitals to the audit programme.
- Timeliness and readability of audit reports.
- Satisfaction with the audit web tools and regional slideshows.
- Complaints and comments.

We will report progress against these performance indicators in the 2008/09 annual report.

Evaluating the impact of audits in 2007/08
A questionnaire was circulated to 215 hospitals who participated in the audit of the use of blood in primary, elective, unilateral total hip replacement, asking them evaluate the impact of the audit. 35 hospitals replied, representing 16% of those who took part, perhaps reflecting some degree of audit fatigue felt by hospitals. The results are available on request from the Project Manager.

Conclusions
This has been another challenging year for the National Comparative Audit of Blood Transfusion programme. The audit of upper gastrointestinal bleeding and the use of blood, operated in collaboration with and funding from the BSG, was, to date, the biggest investigation into the appropriate use of blood in this group of patients and provided valuable information on the quality and diversity of care.

It raised concerns about the effectiveness and risks of transfusion in these patients and highlighted the need for high quality clinical trials of the effect of transfusion in patients with acute upper gastrointestinal bleeding. The audit of overnight transfusion raised important questions about the decision to transfuse patients overnight, and will continue to challenge practice in an attempt to improve patient safety.

During the last year, the audit programme has developed a firmer relationship with the Healthcare Commission, and dealt with data sharing and audit governance issues. Over 80% of NHS hospitals consistently participate in our audits. While continuing to provide them with high quality, useful and timely audit results, we will strive to achieve a higher rate of participation and to further influence the quality of patient care and patient safety through improved transfusion practice.
### Work programme for 2008/09

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<tr>
<th>Event</th>
<th>Date</th>
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<tr>
<td>FFP audit data collection closes</td>
<td>11th July 2008</td>
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<tr>
<td>FFP audit report and slideshow available</td>
<td>November 2008</td>
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<tr>
<td>2008 Bedside Transfusion Re-audit starts</td>
<td>1st September 2008</td>
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<td>2008 Bedside Transfusion Re-audit reports</td>
<td>May 2009</td>
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<tr>
<td>Audit of the use of platelets in haematology</td>
<td>Scheduled for Spring 2009</td>
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The Steering Group for the National Comparative Audit of Blood Transfusion always welcomes ideas and suggestions for topics to audit. If you would like any further information, and/or would like to contribute any topics or ideas, please contact:

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*Further details about the audit programme can be obtained by visiting our website:*

http://hospital.blood.co.uk/safe_use/clinical_audit/National_Comparative/index.asp