Sharing Data as a Means to Improving Practice

Judith Chapman, BSMS
Clare Milkins, UKNEQAS (BTLP)
Distributes blood group serology exercises with the aim of assessing laboratory performance and highlighting errors. Provides advice and education with the aim of improving practice.

Countries covered - UK and Eire
Collects data on serious adverse events associated with the transfusion of blood components with the aim of:

- *improving the safety of the transfusion process*
- *informing policy within the Transfusion Services*
- *improving standards of hospital transfusion practice*
- *aiding production of clinical guidelines for the use of blood components*

Countries covered include - UK
The Blood Stocks Management Scheme monitors the red cell and platelet inventory and wastage in hospitals and Blood Services in the United Kingdom with the aim of maximising the use of donated blood by increasing understanding of blood supply management.

Countries covered include *England and North Wales, South Wales, Northern Ireland*.  

*Scotland and Eire will join in 2006*
Commonalties

• BSMS, UK NEQAS, SHOT
  – Participant base, data collection and reporting requirements, role in stimulating improvement in laboratory practice

• UK NEQAS and SHOT
  – highlight laboratory errors, make recommendations on and inform UK guidelines

• BSMS and SHOT
  – BSMS provides the SHOT denominator data
Denominator data

- 27 million blood components issued by UK blood services 1996 - 2004
- Hospital wastage of red cells is < 5%
# ESTIMATED RISKS OF TRANSFUSION

<table>
<thead>
<tr>
<th>Adverse event</th>
<th>Incidence per 100,000 blood components issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>All events</td>
<td>9</td>
</tr>
<tr>
<td>Transfusion related death</td>
<td>0.4</td>
</tr>
<tr>
<td>Receiving ‘wrong blood’</td>
<td>6</td>
</tr>
<tr>
<td>ABO incompatible tx</td>
<td>1</td>
</tr>
<tr>
<td>TRALI</td>
<td>0.6</td>
</tr>
<tr>
<td>Bacterial contamination</td>
<td>0.1</td>
</tr>
</tbody>
</table>
Profile of SHOT reporting/non-reporting hospitals

- Large or small?
- How much blood do they use?
- What proportion of national blood use is represented in SHOT?
BSMS hospital ‘clusters’

- Hospital types
  - teaching, DGH, private
- Usage
  - < 6000 red cells pa
  - 6000 - 11000
  - > 11000

- 5 ‘clusters’
  - high use teaching
  - high use DGH
  - moderate use
  - low use
  - private
High DGH

High Teaching

Mod use

Low use

Private

No of hospitals

No of reports

Reporters

Non-reporters

Numbers of reports

86%

80%

62%

44%

13%
High DGH: 19 (86%) Reporters, 3 (14%) Non-reporters
High Teaching: 28 (80%) Reporters, 7 (20%) Non-reporters
Mod use: 69 (62%) Reporters, 42 (38%) Non-reporters
Low use: 21 (46%) Reporters, 27 (54%) Non-reporters
Private: 6 (13%) Reporters, 41 (87%) Non-reporters
67% of hospitals in England reported an incident or ‘near-miss’ in 2004

Those hospitals received 74% of the blood supply
We’re all asking you the same questions

We’re often using the data in isolation

Collection of denominator data 2003
ATLAS
Assembly of Transfusion Laboratory Assessment Schemes
Purpose:
To establish a data catalogue which would enable the group to easily identify and access information from questionnaires held by each scheme, thus avoiding duplication wherever possible.
UK NEQAS knows who’s using electronic issue

If it wants to know how many and what % units are issued by EI it has to ask both questions each time

BSMS knows how many units are transfused but also has to ask if they’re issued by EI
Serological techniques and procedures

• Are these linked to laboratory errors?
• We know when they’re linked to EQA errors
• Is this the same thing?
• SHOT data has the potential to answer these questions but can’t do it in isolation
An Example

- Typing of r’r red cells
- Problems with using anti-CDE for routine D typing of patient samples.
Past exercises

• 01R2
  – r’r cell mis-interpreted as D positive (1) or weak/partial D (2)

• 02R2
  – r’r cell mis-interpreted by 4 participants
Past exercises

- 01R2
  - Reddish jn interpreted as D positive (1) or weak/partial D (2)

- 02R2
  - 9% ERROR RATE!!!!

The 2004 compatibility guidelines recommend that anti-CDE is not used to routinely type patients’ samples
Recent exercise

• 05R5
  – No D typing errors of r’r due to use of anti-CDE reagents

• 05R8Q (data not yet validated)
  – 7% use anti-CDE for routine typing
    • 8% of CAT users
  – 10% in 2002
    • 28% of CAT users
### Another Example - Typing of rr DAT positive red cells

<table>
<thead>
<tr>
<th>Exercise</th>
<th>04R2</th>
<th>05R8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpreted as D pos/D var</td>
<td>17 labs (3.6%)</td>
<td>7 labs (1.5%)</td>
</tr>
<tr>
<td>Potentiated reagent</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>IAT</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

05R8 Q – 5% continue to use an IAT for checking apparent D negatives
SHOT D typing errors

• Between 6 and 19 D typing errors reported every year
  – Mostly unknown or unrecorded causes
  – 1 reagent ‘splash’ in a microplate
  – 1 difficulty in interpreting a DAT +ve cord sample
  – 1 ‘reagent’ problem

Are any of these due to the same underlying causes?
SHOT knows who’s reporting laboratory errors

UK NEQAS knows which laboratories are making EQA errors and often has an understanding of why

Would it be useful to know if these are the same or different laboratories?

Are the root causes the same? Could it lead to a better understanding for all concerned?
What are the confidentiality issues?

- Mutual trust
- No fear of unfair blame
- Freedom of Information Act?
- Blood Safety regulations?
- UK NEQAS has a signed ‘contract’ with participating laboratories
- SHOT and BSMS do not
CONDITIONS OF PARTICIPATION

Conditions of participation by UK Clinical Laboratories In External Quality Assessment Schemes (EQASs) which are under the professional jurisdiction of the Joint Working Group on Quality Assurance (JWG on QA).

EFFECTIVE FROM 1ST MAY 1997

4. The EQAS code number of the laboratory and the assessment of individual performance is confidential to the participant and will not be released by Scheme Organisers to any third party, other than the Chairman and members of the appropriate NQAAP, and in specified circumstances (section 7) to the Chairman of the JWG on QA without the written permission of the Head of the laboratory. In the particular circumstances set out in Section 8, this information may be released as defined in that section.
In Summary

• Shared data between SHOT and BSMS has already been shown to be invaluable
• Is there any mileage in mapping the UK NEQAS PRN to the Pulse code and sharing information between BSMS and UK NEQAS?
• Is there any mileage in mapping the SHOT code and the UK NEQAS PRN?
  – For information
  – For error management