HOW TO PREVENT ERRORS IN THE TRANSFUSION LABORATORY

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How to Prevent Errors in the Transfusion Laboratory

- Elements of good transfusion laboratory practice.
- Where in the process do errors occur?
- Who is making the errors?
- Why are the errors occurring - which elements of good transfusion practice are failing?
Elements of Transfusion Laboratory Practice

WHO?
• Staff
  – Numbers
  – Training

WHAT?
• Guidelines
• Standard Operating Procedures
Elements of Transfusion Laboratory Practice

HOW?

• Robust Reagents/Methods
• Equipment/Automation

• Information Technology (IT)
Elements of Transfusion Laboratory Practice

MONITORING

• National External Quality Assessment Scheme (NEQAS)
• Audit
• Error Logging
  – Local
  – SHOT
• Error Analysis
Where do Errors Occur? (1)

<table>
<thead>
<tr>
<th>Error Description</th>
<th>No. of errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transcription error</td>
<td>3</td>
</tr>
<tr>
<td>Failure to consult/heed historical record</td>
<td>23</td>
</tr>
<tr>
<td>Grouping error</td>
<td>30</td>
</tr>
<tr>
<td>Missed antibody(ies): Screen error</td>
<td>5</td>
</tr>
<tr>
<td>Missed antibody(ies): ID error</td>
<td>2</td>
</tr>
<tr>
<td>Missed incompatibility</td>
<td>2</td>
</tr>
<tr>
<td>Selection/issue of inappropriate component</td>
<td>24</td>
</tr>
<tr>
<td>Labelling error</td>
<td>8</td>
</tr>
<tr>
<td>Failure to irradiate</td>
<td>9</td>
</tr>
<tr>
<td>Crossmatch error</td>
<td>2</td>
</tr>
</tbody>
</table>
## Where do Errors Occur? (2)

<table>
<thead>
<tr>
<th>Error Description</th>
<th>No. of errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossmatch wrong sample</td>
<td>5</td>
</tr>
<tr>
<td>Failure to follow protocol</td>
<td>11</td>
</tr>
<tr>
<td>Incorrect serological reasoning</td>
<td>3</td>
</tr>
<tr>
<td>Clerical error</td>
<td>7</td>
</tr>
<tr>
<td>Technical error</td>
<td>7</td>
</tr>
<tr>
<td>Failure to clear satellite refrigerator</td>
<td>5</td>
</tr>
<tr>
<td>Failure to detect error by Blood Centre</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>157</strong></td>
</tr>
</tbody>
</table>
Grouping Errors

• 16 D groups, 14 ABO groups
• 17/30 rapid methods
• 12/17 out of hours
• 14/17 emergencies
• 16/17 detected through routine methods
Grouping Errors – WHY?

- Error analysis
- Selection of reagents and methods
- Staff training/experience
Failure to Consult/Heed Historical Record - WHY?

BCSH Guideline for pre-transfusion compatibility procedures in Blood Transfusion Laboratories states that one of the elements in pre-transfusion testing is:

A computer or manual check of records.
Failure to Consult/Heed Historical Record - WHY?

- **Error analysis**
- Should guideline be more prescriptive?
- Interpretation of guideline into local SOP?
- Inadequate IT system?
- Inadequate staff training?
- Staff shortages?
  - Are errors not being addressed?
  - Responsibility passed to another staff group?
Selection/Issue of Inappropriate Component - WHY?

- **SOPs**
  - no perfect SOP
  - must cover all components
  - clear and unambiguous

- **Staff Training**
  - practise makes perfect

- **IT**
  - inadequate
Failure to Follow Protocol - WHY?

• SOP

• Staff Training
  – Initial training
  – Ongoing training
    • theoretical knowledge
    • competency based training
    • frequency of re-training
    • time to read/digest/question SOPs
When are Errors Made and Who Makes Them?

- State Reg BMS: 84 (53.5%)
- On Call BMS working regularly in the blood bank: 16 (10.2%)
- On Call BMS not working regularly in the blood bank: 33 (21.0%)
- Not stated: 20 (12.7%)
- MLA supervised: 1 (0.6%)
- Locum/Agency: 2 (1.3%)
- Trainee BMS: 1 (0.6%)
Conclusion

• Information Technology
• Error Analysis
• Staffing
  – Sufficient Numbers/Appropriate Grades
  – Required Education/Training/Competencies
  – ‘In hours’ and ‘Out of hours’