Wrong Blood In Tube – The Tip of the Iceberg

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Introduction
The Serious Hazards of Transfusion (SHOT) scheme has collected ‘near miss’ events since 1999 with the aim of assisting hospitals to reduce human error in the transfusion process. These are defined as any error which, if undetected, could result in the determination of a wrong blood group or transfusion of an incorrect component, but was recognised before the transfusion took place. ‘Near miss’ events currently constitute about one third of all SHOT reports (1080/3038 in 2011)¹.

Methods
An analysis was performed of all SHOT ‘near miss’ events reported 2010-2011 with detailed analysis of ‘wrong blood in tube (WBIT)’ near miss sample errors in 2010 and 2011.

Fig. 1

For every 1 wrong transfusion
There are 100 near misses
How many are undetected?

Fig. 2

2010
386
IBCT = incorrect blood component transfused
Known WBIT not processed
How many are missed?

2011
469
Known WBIT not processed
How many are missed?

Fig. 3

Table: Wrong blood in tube errors by staff group (%)

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<thead>
<tr>
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<th>2010</th>
<th>2011</th>
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<tbody>
<tr>
<td>Total SHOT reports analysed</td>
<td>2464</td>
<td>3038</td>
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<tr>
<td>Near misses</td>
<td>863</td>
<td>1080</td>
</tr>
<tr>
<td>Sample errors</td>
<td>409</td>
<td>508</td>
</tr>
<tr>
<td>Wrong blood in tube (WBIT)</td>
<td>386</td>
<td>469</td>
</tr>
</tbody>
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Fig. 4

Results
‘Near miss’ events constitute one third of all SHOT reports (Fig. 1). Sample errors contribute 50% of ‘near miss’ events each year and more than 90% of sample errors are incidents of ‘WBIT’¹ ² (Fig. 1). ‘WBIT’ events can result in ABO and/or RhD incompatible transfusion of which there were 3 in 2010 and 5 in 2011 (Fig. 3), showing that clinical episodes are the tip of a large iceberg (Fig. 2,3) with more than 99% ‘WBIT’ fortunately detected prior to transfusion. Doctors are responsible for a disproportionate number of ‘WBIT’sample errors and phlebotomists for considerably fewer (Fig. 4). Most of these were caused by failure to identify the patient correctly at the bedside.

Conclusions
SHOT analysis of ‘near miss’ events highlights sample errors that are detected prior to the release of results or blood components, because historical records have highlighted a grouping discrepancy. The detection rate may indicate the efficiency of the laboratory Quality Management System and demonstrates the importance of linking patient data to historical records. The number of ‘WBIT’ errors is likely to be under-reported as many ABO and/or RhD non-identical transfusions may be uneventful or undetectable if the patient requires no future treatment and has no historical group, and a proportion will fortuitously be ABO and/or RhD identical. The rate of sampling errors has remained static since 1999 despite recommendations in the SHOT annual reports for better training¹.

Learning Point: These errors are avoidable if the basic steps to safe transfusion are properly completed, starting and ending with the correct identification of the patient.