Audit of pre-operative crossmatch practices

Background

This audit tool has been designed to help organisations gain an understanding of pre-operative transfusion practice. Additionally, it can be used to provide evidence that an organisation is working towards/meeting the following NSQHS Standard 7 criteria (http://www.safetyandquality.gov.au/wp-content/uploads/2012/10/Standard7_Oct_2012_WEB.pdf):

- 7.8.2 Action is taken to minimising wastage of blood and blood products
- 7.4.1 Quality improvement activities are undertaken to reduce the risks of patient harm from transfusion practices and the clinical use of blood and blood products

The tool is designed to determine the crossmatch:transfusion ratio for the area audited. Generally, crossmatched units remain in blood fridges allocated to the patient for whom they were requested for up to 3 days. After this period the laboratory can accept the units back into their inventory provided that they have been stored and handled correctly and are within expiry. The benefits of reducing the crossmatch:transfusion ratios include:

- reduced numbers of red cell units stored in the blood fridge, which may also reduce the risk of collecting the wrong blood product in error
- reduced workload for hospital staff who facilitate and document the movement of blood products into and out of the blood fridge via a blood register
- Waste minimisation through more effective management of red cell inventory in the transfusion laboratory. Nationally, red cell waste due to expiry prior to use accounts for 68% of total red cell waste (National Blood Authority July 14-April 15).

How to use the tool

The audit tool is designed to be used in conjunction with the blood fridge register. Together these will assist in establishing and documenting the number of crossmatched red cells:

- stored in the blood fridge
- transfused
- returned to the laboratory (see example below).

The simple design of the tool adds to its flexibility and allows it to be used to audit any blood fridge within a health service. The tool can be used to investigate the crossmatch:transfusion ratio for a particular clinical area by monitoring the movement of blood into and out of a fridge for a specified period. Alternatively it could be used to investigate blood ordering practices for a specific patient group (e.g. orthopaedic surgical patients) by monitoring blood movement for patients identified as belonging to this group. The audit period is determined by the user (i.e. weekly, monthly etc.) and the tool lends itself to both real time and retrospective data collection.
### Audit Tool

**Clinical specialty/ ward area:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Prescribing doctor</th>
<th>Patient Name / MRN</th>
<th>Number of red blood cells signed IN for patient</th>
<th>Number of red blood cells signed OUT for patient</th>
<th>Number of red blood cells RETURNED to pathology</th>
<th>Pathology provider</th>
<th>C/T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/3/15</td>
<td>ZZZ</td>
<td>Simon Blood</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>H pathology</td>
<td>3/1</td>
</tr>
</tbody>
</table>

This audit tool is designed to determine the crossmatch to transfusion ratio.
Results

The crossmatch:transfusion ratio is determined by documenting:

- total number of units signed into blood fridge = (C)
- total number of units transfused = (T)
- total number of units returned = (R)

Crossmatch:transfusion ratio = C:T

Per cent (%) red cells returned = (R/C) x 100

Reporting

Results should be presented to the Transfusion/Quality/Governance committee so they can be reviewed and an action plan for reducing the crossmatch:transfusion ratio can be discussed and developed. Re-audit will assist in assessing the success of actions taken. The following table is an example of an easy to understand reporting format.

<table>
<thead>
<tr>
<th>Clinical specialty/ ward area audited</th>
<th>St Elsewhere’s Main Theatres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time period audited</td>
<td>Month of January 2015</td>
</tr>
<tr>
<td>Crossmatch:transfusion ratio</td>
<td>3.6:1</td>
</tr>
<tr>
<td>Number of units crossmatched returned to laboratory</td>
<td>93</td>
</tr>
<tr>
<td>Recommendations</td>
<td>Review Maximum Blood Order Schedule (MBOS)</td>
</tr>
<tr>
<td></td>
<td>Set C:T target and monitor as a KPI</td>
</tr>
</tbody>
</table>

Considerations

When introducing actions/strategies aimed at reducing the crossmatch:transfusion ratio the following points should be considered:

- Clinical staff require assurance that patient blood requirements will be met in a timely fashion
- Assessment of previous blood requirements in particular patient groups (i.e. patients undergoing total hip replacement) can be helpful in predicting future blood use and the development or reassessment of a MBOS
- For patients with clinically significant red cell antibodies red cell units should be crossmatched even if the likelihood of bleeding is low, to ensure the best product is available for the patient should they require blood unexpectedly
- Turn-around-times for providing compatible blood should be determined be each laboratory providing products. These will need to be communicated clearly to clinical staff, along with any possible delays and the actions required in these situations
- Emergency O negative blood should be made available for unforeseen urgent situations
- Changes affecting policy and practice must be made in consultation with treating clinicians & transfusion service provider(s).

Further assistance is available by contacting Blood Matters: phone: 03 9694 0102 or email: bloodmatters@redcrossblood.org.au

Acknowledgement

We would like to acknowledge the South Australian Blood Moves project/ BloodSafe for their ongoing sharing of information and support.