**Background**

- Patients often receive blood products without addressing the underlying cause of a low haemoglobin (Hb) level and consequently, receive further transfusions unnecessarily.
- This project aims to evaluate the documentation of indications for blood transfusions and its necessity.
- National and local guidelines are available for thresholds for transfusion (National Institute for Health and Care Excellence (NICE)) and the British Committee for Standards in Haematology (BCSH).
- Transfusions are expensive and may cause adverse reactions.

According to the NICE guidelines, patients should be clinically assessed and the haemoglobin level should be rechecked after each single-unit red blood cell transfusion, before further transfusions.

The British Committee for Standards in Haematology highlights the following thresholds for transfusion (Figure 1):

<table>
<thead>
<tr>
<th>Hb level</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;70g/L</td>
<td>Usually transfuse. Appropriate not to transfuse if not symptomatic and/or where specific therapy is available.</td>
</tr>
<tr>
<td>70-100g/L</td>
<td>Transfusion appropriate with surgery i.e. major blood loss or signs and symptoms of poor oxygen delivery.</td>
</tr>
<tr>
<td>&gt;100g/L</td>
<td>Transfusion not appropriate unless there are specific indications.</td>
</tr>
</tbody>
</table>

**Aims and Objectives**

- To look at clinical practice of blood transfusions in surgical patients and ensure adherence to the BCSH guidelines and the Blood safety and Quality Regulations (BSQR).
- To promote good transfusion practice at our Trust.

**Methodology**

An initial audit evaluated 50 general surgical cases retrospectively (over a 3 month period) who received blood transfusions and focussed on documentation of the following (Figure 2):

- Indication for blood transfusion in the medical notes and blood transfusion charts.
- Discussions with patients regarding adverse reactions.
- Were alternatives to blood products offered?
- Pre and post-transfusion haemoglobin levels.
- Discharge summaries should include indication for blood transfusion and details of blood transfusion i.e. type of blood product, number of units and adverse reactions, if any.

**Results of the initial audit**

- Poor documentation of discussions surrounding transfusion of blood products, including consent.
- No information regarding delayed adverse reactions were documented.
- No documentation of whether patients were aware that after receiving blood transfusion they can no longer be a blood donor.
- 52% of transfusions met our Trust transfusion threshold.

Following the initial retrospective audit, a sticker was introduced to improve documentation. A prospective re-audit was then undertaken (after a month) to assess the impact of the transfusion sticker (Figure 3).

The sticker aims to:

- Aid better documentation for medico-legal purposes.
- Highlight patients at increased risk of transfusion associated circulatory overload (TACO) - biggest cause of transfusion-related deaths in hospitals.
- Reduce errors by identifying transfusion-related complications sooner.

**Blood transfusion sticker trial**

<table>
<thead>
<tr>
<th>Indications for blood transfusion</th>
<th>Pre-transfusion Hb: ……. Weight (kg): ……. Do they fulfil the trust transfusion threshold?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have haematinics been checked? Yes / No</td>
<td></td>
</tr>
<tr>
<td>Has the patient given consent? Yes / No</td>
<td></td>
</tr>
<tr>
<td>Has the patient received information regarding transfusion? Yes / No</td>
<td></td>
</tr>
<tr>
<td>Post-transfusion Hb ……. Any adverse reactions? Yes / No</td>
<td></td>
</tr>
<tr>
<td>If yes, please state the reaction …………………</td>
<td></td>
</tr>
</tbody>
</table>

**Results of the re-audit**

The sticker has improved documentation of:

- Indication for blood transfusion.
- Consent.
- Recording of pre and post-transfusion Hb levels.
- Haematinics testing (iron studies/b12/folate and blood films).

However it has failed to improve documentation of transfusion in discharge summaries (Figure 4).

**Conclusion:**

- Introduction of a simple, easy to find sticker has shown better adherence to the national and trust guidelines.
- Reduces multiple transfusions which saves on costs.
- Helps improve patient knowledge and promote better patient-centred care.
- Identify transfusion-related complications sooner and reduce morbidity and mortality.
- Improves documentation.
- Encourage alternative treatments to increase haemoglobin levels i.e. iron supplements/intravenous iron infusions/folic acid/erythropoietin (EPO).
- Prompt clinicians to check haemoglobin pre and post-transfusion to avoid further unnecessary transfusions.
- Improves patient’s knowledge on adverse reactions.
- Improves patient safety and costs in the long term.

**Limitations**

- Tertiary centre for Pseudomyxoma patients who receive multiple blood transfusions. Often haematinics are not checked pre and post-transfusion.
- Incomplete data regarding documentation of transfusions in discharge summaries, as the study is ongoing and not all patients have been discharged.
- Poor awareness of the sticker means not all patients who have received blood transfusions have been followed up as part of data collection. Flyers have been introduced on the wards and email reminders sent to improve the use of the stickers.

**Recommendations/action plan:**

- Education of staff about the new stickers to ensure all patients who receive transfusion have a sticker used.
- Introduce stickers to all departments in trust.
- Changes to discharge summaries to ensure blood transfusions documented and change in blood donor status clear on summary.
- Re-audit once introduced trust wide, in all departments.

**References**

2. The British Committee for Standards in Haematology [www.bcsghguidelines.com]