Northern NSW Local Health District

2019 Blood and Blood Products Audit
Executive Summary

May 2019

National Safety and Quality Health Standards
Standard 7: Blood Management

Report prepared by the NNSWLHD Clinical Governance Unit
Introduction

The Blood and Blood Products audit was trialled in the Richmond network in 2014. Following improvements to the audit tool, annual auditing is now conducted across the LHD.

The audit captures any blood or blood product as per the NNSW LHD Clinical Procedure Blood Products – Administration NC-NNSW-PRO-6975-13. Blood products are defined as

- Fresh and frozen blood components such as red blood cells, platelets, fresh frozen plasma, cryoprecipitate.
- Plasma-based derivatives that are fractionated from large pools of human plasma under pharmacological conditions e.g. albumen and immunoglobulins

In 2019, a total of 131 audits were completed at Ballina, Byron Central, Casino, Grafton, Kyogle, Lismore, Maclean, Murwillumbah and Tweed. Bonalbo, Nimbin and Urbenville did not administer any blood product and therefore were unable to undertake any audits.

Executive Summary

Overall results

- A total of 131 audits were completed at nine facilities in the LHD across a variety of clinical areas.
- This summary should be read in conjunction with reviewing the individual hospital data in the Excel spreadsheet, distributed with this report.
- Each blood product administration episode was audited for appropriateness and completeness of relevant documentation.
- Red blood cells (RBC) were the most common blood product administered, accounting for 97 of the 131 audits (74%). There were 30 audits completed on patients who received immunoglobulin (23%) and the remaining four patients (3%) received platelets.
- The indication for transfusion was documented in the clinical record in 92% of records audited. This is consistent with the 2018 audit result of 93%.
- Written, valid, informed consent must be obtained for all blood product transfusions. A completed consent form was present in 96% of transfusion records audited (126 of 131). This has improved from 90% in 2018.
- Of the five transfusions where no consent form was present:
  - Four transfusions (80%) had other documented evidence of consent being obtained.
  - One transfusion had no evidence of any consent obtained. This was an emergency at Lismore Base Hospital.
- The blood or blood product is to be documented on the patient’s IV Fluid Order or Medication Chart. This was evident in 98% of transfusions audited (128 of 131).
- The appropriate infusion time was documented in 92% of transfusions audited (120 of 131). This has improved from 2018. Previously, some prescribing Medical Officers were documenting the infusion time as “as per protocol”, rather than specifying the infusion time. Casino Hospital has achieved 100% compliance with appropriate documentation of this compared to 38% compliance in 2018.
- 97% of records had a documented transfusion commencement date and time (127 of 131) which has continued to improve. However, only 58% had a documented completion date and time (76 of 131).
Transfusion of fresh blood components must be completed **within 4 hours of removal from controlled temperature storage** and Albumex infusion must be completed within 4 hours of commencement. Compliance was 93% (122 of 131).

Of the 9 occasions where the transfusion/infusion was not complete within the 4 hours:

- 8 involved RBC. It was noted in three of the RBC audits that no completion time was documented, therefore it is unknown if the transfusion was completed within the 4 hours.
- 1 was Immunoglobulin/Albumin.

As per the NNSW LHD Clinical Procedure on Blood Product Administration NC-NNSW-PRO-6975-13, a transfusion should be commenced when appropriately resourced. A transfusion should not be considered between 2000 and 0600 hours unless deemed an emergency. A total of 18 transfusions were administered after hours (14%).

Of these 18 occasions:

- 3 were transfused in Emergency departments
- 1 was transfused in Theatre
- 1 was transfused in ICU
- The remaining 13 were whilst the patient was in a general ward.

The **volume administered** must be documented on the Intravenous Infusion and Additive Order Sheet. This occurred in 71% of records audited (93 of 131). This has improved from 61% in 2018.

Two staff must sign the e blood release form confirming a patient and product check has occurred and is correct and compatible (this excludes immunoglobulin). Compliance was 96% (97 of 101). This has continued to improve from 92% in the 2018 audit.

Patients undergoing blood transfusions are to be closely observed throughout the transfusion. As a minimum, observations are to be documented as per below.

- Pre-transfusion - baseline;
- 15 minutes after commencement;
- Hourly for the duration of the transfusion unless the patient is unwell;
- At the completion of the transfusion;
- 4 hours post-transfusion (if not discharged prior)

Appropriate observations were documented in 80% of transfusions audited (105 of 131). This has improved significantly from 61% in 2018.

One patient at Ballina Hospital had an **adverse reaction** to a red blood cell transfusion. There was documented evidence of the actions taken following the reaction, however the ‘Notification of Adverse Transfusion Reaction Form’ was not completed, nor a notification made in IIMS as required.

Patients are to be provided with information relating to transfusion reactions and advised to return to hospital if they have any concerns. Following the transfusion, patients or carers are to be given the **Blood Transfusion: Delayed Reactions’ brochure.** Only 26% of patients were provided with this brochure when it was relevant (e.g. patients undergoing regular infusions/transfusions may not require this).
**Red blood cells (RBC):**

- A total of 97 audits were completed on red blood cell transfusion.

- Prior to transfusion, the patient’s **haemoglobin** (Hb) should be documented. The patient’s Hb is relevant to the volume of blood/blood product required. 100% of patient records had a pre-transfusion Hb documented.

- **Pre transfusion Hb:**
  - 30% (29 of 97) with Hb <70
  - 64% (62 of 97) with Hb 70-90
  - 4% (4 of 97) with Hb 91-100
  - 2% (2 of 97) with a Hb of >100

NNWLHD Blood Products Prescribing Guidelines state that **RBC transfusion where the Hb concentration is >100 is likely to be unnecessary and is usually inappropriate. Transfusion has been associated with increased mortality in patients with ACS.**

A clinical review was undertaken of both patient records where the Hb was >100 and it was determined that one was clinically appropriate for transfusion, with clear documentation of severe blood loss, whilst there was no clear documentation around the decision to transfuse in the other case.

- For the 97 RBC transfusions, a total of 182 units of RBC were ordered. A total of 193 units were actually transfused.
  - 84% of patients were transfused the same number of units that were initially ordered (81 of 97).
  - 5% of patients received fewer units than were initially ordered (4 of 97)
  - 11% of patients received more units than were initially ordered (11 of 97).

- The National Blood Authority’s Patient Blood Management Guidelines state: **For Hb concentration of 70 – 100 g/L, RBC transfusion is not associated with reduced mortality. The decision to transfuse patients (with a single unit followed by reassessment) should be based on the need to relieve clinical signs and symptoms of anaemia, and the patient’s response to previous transfusions**

- 66 patients had a Hb of between 70 and 100:
  - 25 of these patients (38%) were ordered a single unit -
    - 80% of these patients were transfused a single unit (20 of 25)
    - 20% of these patients were transfused more than 2 units (5 of 25)
  - 37 of these patients (56%) were initially ordered 2 units –
    - 84% of these patients were transfused 2 units (31 of 37)
    - 11% of these patients were transfused a single unit only (4 of 37)
    - 6% of these patients were transfused more than 2 units (2 of 37)
  - 4 of these patients (6%) were initially ordered 3 units and all four patients were transfused 3 units.

- Where the patient has **more than one unit transfused**, they should be **clinically reassessed** prior to any subsequent units. This excludes cancer care/oncology/haematology patients who routinely do not get reassessed between units. This is due to the often regular transfusions of two units or more. The other exception is critical bleeding or massive transfusion.
• Excluding cancer care/oncology/haematology patients, and critical bleeding or massive transfusions, a total of 38 patients were transfused more than one unit; 55% of patients were documented as having a reassessment between units (21 of 38).

**Immunoglobulin/Albumin:**

• A total of 30 audits were completed on immunoglobulin administration.
• A variety of products were administered, including Intragam, Privigen and Flebogamma.
• The product batch number label was documented in 90% of patient records (27 of 30). Last audit this result was 100% compliant.

**Platelets:**

• A total of 4 audits were completed on platelets administration.
• 100% had a documented reason recorded for the platelet transfusion or documentation of a haematologist being consulted.
• 3 of the 4 patients had one unit of platelets ordered and one unit transfused, while 1 patient was ordered and received 2 units.

**Recommendations**

• Consent must be obtained from the patient for a blood transfusion. A consent form must be completed or evidence of that consent must be documented in the patient record. Where a patient is physically unable to give consent due to their medical condition, this must also be documented.
• The risk of harm is dose dependent – every unnecessary unit transfused represents an imbalance towards risk, not benefit. Emphasis should be on individual patient assessment for each unit – not transfusion according to Hb alone, or the traditional request for 2 units.
• Where the patient is prescribed more than one unit of blood or blood product, they must be clinically reassessed prior to any subsequent units being transfused, with the exception of critical bleeding or massive transfusion.
• Patients are required to have observations attended as per the NNSWLHD Clinical Procedure NC-NNSW-PRO-6975-13 Blood Products Administration, for each and every unit transfused.
• Information is required to be provided to all patients undergoing a blood or blood product transfusion and documentation of this must be noted in the medical record. Patients or their carer must be provided with the NSW Clinical Excellence Commission brochure ‘A general guide to Blood transfusion information for patients & families’. Alternatively, it must be documented on the consent or in medical record that the risks / benefits of transfusion and other options available have been discussed with the patient. This includes where the patient has previously been provided with this information.
• All patients should be provided with post-transfusion education. In addition, where a patient is discharged within 4 hours of having a transfusion, they are to be provided with information regarding transfusion reactions and to return to hospital if concerned. Documentation of this information being provided must be noted in the medical record.
- Where any adverse reaction occurs, regardless of how minor, the incident must be documented as a *Clinical* incident in the Incident Information Management System (IIMS). The incident should include an *Incident Type of Blood and Blood Products*. This is to occur regardless of the actual outcome for the patient, including where there was no adverse outcome. The occurrence of any reaction must be documented.

**References**

- NC-NNSW-PRO-6975-13 Northern NSW LHD Clinical Procedure - Blood Products Administration
- NC-NNSW-PRO-6892-13 Northern NSW LHD Clinical Procedure - Blood Products Patient Consent
- NC-NNSW-GUI-6893-13 Northern NSW LHD Clinical Guideline - Blood Products Prescribing Guidelines
- NC-NNSW-POL-6890-13 Northern NSW LHD Clinical Policy - Blood Products Massive Transfusion
- NNSW-LHD-PRO-0492-19 Northern NSW LHD Clinical Procedure - Blood Products – Prescription and Supply of Intravenous Immunoglobulin (IVig) and Subcutaneous Immunoglobulin (SCig)