Transfusion in the Night
Clinical risk approach to improve process & practice

Central Coast Local Health District
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Overview of Project

Key Problem: Diagnostic groups (DRGs) in MAU showed 126 episodes over 12 months related to primary diagnoses requiring blood products with a length of stay (LOS) of 3.8 compared to NSW health peers1 of 3.3 days with a decrease in patient experience.

Aim: Safely decrease the LOS of patients requiring blood transfusions in MAU by 8 hours within 6 months through a clinical risk approach.

Description of undertaking: Diagnostic evaluation of service and practice identified issues related to admission times and a local procedure which states blood products cannot be administered between 2200-0600 unless haemodynamically unstable which the MAU were not deemed to be. Risk assessments, audits & practice review supported the August 2014 endorsed ‘Overnight transfusion of haemodynamically stable patients in the MAU’ guideline with risk minimisation strategies to improve LOS, patient experience and meet the MAU model of care & key performance indicators (KPIs).

Outcome: Post implementation audits and review showed;
- Practice compliance of 96.7%, higher overnight
- Decrease LOS from 3.8 to 3.2 days (14.4hrs) for patients transfused overnight
- Improved patient stories relating to practice change
- Nil identified clinical practice incidence or issues post implementation
- Practice supports the MAU model of care aims and KPIs.

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Health Service: CCLHD
Key Problem

MAU model of care & KPIs are designed to support patient flow and patient experience.

Diagnostic Related Groups (DRGs) of the MAU service identified;

- 126 separations in one year where patients were admitted with a primary diagnosis related to transfusion medicine.
- Q618 (RBC disorder without catastrophic or severe CC) (4th highest DRG for both units)
- Q61A (Red blood cell disorders with catastrophic or severe CC)

The Length of Stay (LOS) of these patients was higher than our peer hospitals.
Aim of this innovation

Safely decrease the LOS of patients requiring blood transfusions in MAU by 8 hours within 6 months using a risk assessment approach.
Baseline Data

The LOS of this group was 3.8 compared to our peers 3.3 days.
Separations & LOS

Q61A
3rd highest separations
3rd highest LOS

Q61B
3rd highest separations
2nd highest LOS

<table>
<thead>
<tr>
<th>Episodes</th>
<th>ALOS Q61A: RED BLOOD CELL DISORDERS + CSIC</th>
<th>Episodes</th>
<th>ALOS Q61B: RED BLOOD CELL DISORDERS - CSIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athene</td>
<td>48</td>
<td>4.631076042</td>
<td>62</td>
</tr>
<tr>
<td>Blaze</td>
<td>131</td>
<td>6.92334571</td>
<td>115</td>
</tr>
<tr>
<td>Capella</td>
<td>80</td>
<td>4.597916313</td>
<td>92</td>
</tr>
<tr>
<td>Cosmos2</td>
<td>65</td>
<td>5.668589431</td>
<td>110</td>
</tr>
<tr>
<td>Demeter</td>
<td>85</td>
<td>3.521568329</td>
<td>132</td>
</tr>
<tr>
<td>Fox</td>
<td>66</td>
<td>3.977903742</td>
<td>76</td>
</tr>
<tr>
<td>Frost</td>
<td>99</td>
<td>6.143097303</td>
<td>135</td>
</tr>
<tr>
<td>Gemma</td>
<td>36</td>
<td>3.70833056</td>
<td>60</td>
</tr>
<tr>
<td>Hawk3</td>
<td>50</td>
<td>4.44083304</td>
<td>74</td>
</tr>
<tr>
<td>Jason</td>
<td>85</td>
<td>4.155882059</td>
<td>125</td>
</tr>
<tr>
<td>Malibu</td>
<td>38</td>
<td>5.985745184</td>
<td>41</td>
</tr>
<tr>
<td>Quokka</td>
<td>40</td>
<td>3.4229163</td>
<td>98</td>
</tr>
<tr>
<td>Salus</td>
<td>72</td>
<td>3.270833056</td>
<td>54</td>
</tr>
<tr>
<td>Vega</td>
<td>54</td>
<td>2.922067537</td>
<td>45</td>
</tr>
</tbody>
</table>
Baseline Data / Current Situation

Contributing factors included;
- admission times
- local policy stating that “Blood products and components are to be administered between the hours of 0600 and 2200 hours unless the patient is critically bleeding or is otherwise unstable.”

Based on national guidelines.

• Patient & staff stories;
  “I am sent here by the doctor then nothing happens till the next day”
  (patient)

  “It’s like a sleep over for a lot of them, we don’t treat them, we just keep them”
  (medical)
Key Changes Implemented

Diagnostics:

- Process mapping
- Review of internal & external audits relating to transfusion practices
- Patient & staff stories
- Review of clinical incidents
- Literature review
- Review of other organisations

Solutions:

- Exception from the local procedure precluding blood transfusions overnight for MAU patients
- A RISK assessment on proposed practice change utilising NSW Health Risk Matrix\(^4\) (Medium risk identified)
- Map current risk minimisation strategies to the risks identified to highlight gaps
- Document additional risk minimisation strategies required to optimise patient safety
- **ENDORSED GUIDELINE TO ALLOW OVERNIGHT TRANSFUSIONS WITHIN THE MAU ON HAEMODYNAMICALLY STABLE PATIENTS**
### Example of risk strategy mapping

<table>
<thead>
<tr>
<th>Identified Risk</th>
<th>Existing Risk Minimisation strategies</th>
<th>Required strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Increase Falls/trip</strong></td>
<td>✓ Risk Assessment Tools &amp; plans – Falls, cognitive, mobility</td>
<td>Lighting</td>
</tr>
<tr>
<td></td>
<td>✓ Falls Audits = high compliance</td>
<td>High visibility room</td>
</tr>
<tr>
<td></td>
<td>✓ Fall rates Gosf 0.9 Wy 1.1 per 1000 bed days Oct 15 CCLHD KPI &lt;4)</td>
<td>Audit of compliance</td>
</tr>
<tr>
<td></td>
<td>✓ Cohort pts. face similar risk without significant clinical issue identified</td>
<td>Staff awareness</td>
</tr>
<tr>
<td></td>
<td>✓ Monthly review &amp; plans of IIMs</td>
<td>Continue IIMs review</td>
</tr>
<tr>
<td><strong>Incidental observations</strong></td>
<td>✓ Geographical layout of units</td>
<td>Lighting</td>
</tr>
<tr>
<td></td>
<td>✓ Transfusion procedure has set minimum standards</td>
<td>High visibility room</td>
</tr>
<tr>
<td></td>
<td>✓ MAU has demonstrated highest blood administration practices of all audits attended within CCLHD</td>
<td>Audit of compliance</td>
</tr>
<tr>
<td></td>
<td>✓ CERS 24hrs 7 days week active</td>
<td>Staffing / acuity level assessment</td>
</tr>
<tr>
<td><strong>Transfusion practice &amp; ID of a reaction</strong></td>
<td>✓ Risks don’t increase at night</td>
<td>Minimum standards for transfusions &amp; medical plans</td>
</tr>
<tr>
<td></td>
<td>✓ Competency tools - includes risks, monitoring, administration needs.</td>
<td>Monitor administration competency levels – 97%</td>
</tr>
<tr>
<td></td>
<td>✓ Availability &amp; access to resources including flipping blood books in hard copy &amp; on intranet.</td>
<td>Lighting</td>
</tr>
<tr>
<td></td>
<td>✓ Above audits</td>
<td>High visibility room</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Audit of compliance</td>
</tr>
</tbody>
</table>
### Identified Risks

<table>
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<tr>
<th>Risk Consequence</th>
<th>RISK ANALYSES</th>
</tr>
</thead>
</table>
| Describe what can happen/where/when/why - the magnitude of the problem | - Potential for pathophysiological transfusion reactions for patients are unchanged for overnight transfusion  
- Potential for failure to recognise patient experiencing an adverse event due to:  
  - fewer staff to monitor  
  - poor lighting  
  - absence of “incidental observation” evident during daylight hours.  
  - reluctance to wake patients to perform observations;  
  - Increased incidence of human factor errors overnight (Johnson et al 2014) |

<p>| | |</p>
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<tr>
<td>- Potential for increased risk of falls due to decrease lighting, need for IV pole during transfusion. Patients at risk of fluid overload may be prescribed routine diuretics based on fluid intake which will affect urgency to void compounding this risk for this group.</td>
<td></td>
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</table>
Pre Implementation

• MAU staff aware of ongoing project, education on specific risk strategies and LIMITATIONS of service given – Nursing & medical

• Communication with patient flow, site managers & ED on endorsed service & LIMITATIONS

• MAU clinical guidelines updated to reflect clinical risk needs for overnight transfusion

• Encourage staff to provide feedback, reporting mechanisms related to practice change

  e.g. shift summary reports, IIMs, directly to NUM/CNC
Evaluation

- Tracking patients receiving overnight blood transfusions
- Staff and patient feedback / stories
- Repeat audit of blood transfusion compliance and risk assessment comparing day to night practices
  - CCLHD standard Monitoring Transfusion Practice: Ward based clinical audit and
  - Clinical risk and control requirements outlined in the endorsed Guideline.
Results

• Increase compliance overnight-
  – the average compliance for all blood product administration of 96.7%. (Daytime 93%)

• Decrease in LOS from 3.8 to 3.2 days (14.4hrs) for those transfused overnight.

• No clinical incidence were identified since commencement

• Increase in patient & staff satisfaction
Patient & Staff Experience

From -

“I am sent here by the doctor then nothing happens till the next day”
(patient)

“It’s like a sleep over for a lot of them, we don’t treat them, we just keep them”
(Medical Staff)

To -

“like a F1 pit stop, I was surprised how quick I was allowed to go”
(Patients)

“the staff are great but its nice to get home so quickly”
Lessons learnt

• Your service is only your priority
  – Engagement, identification of stakeholders early to gain support and momentum

• Formal processes / endorsement results in long term change

• Limitations as important as improvements

• Ask the questions – answers are rarely predictable

• The staff and the patients know before the service does

• Risk assessment approach is transferable and can be replicated to other areas of practice – TIAs in progress
Questions?

Acknowledgments:
Penny O’Beid (CNC TM)
Tracy Southwood (Gosf NUM)
Fiona Burns (Wyong NUM)
Paul Roach (MAU medical lead Gosford)
MAU staff CCLHD
References


2. The Australian New Zealand Society for Blood Transfusion and Australian College of Nursing, Guidelines for the Administration of Blood Products (2011)


5. The Health Roundtable | 17/10/2014 | Report v1c | Database: Continuum_v57 | Briefing set
Contact for this Innovation

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