Introducing UHCW

- One of the busiest teaching hospitals in the country
- 2 main hospital sites (UHCW/RSX)
- Located in the south of the region
- Very high blood user
- Trauma centre
- 3 MHPs per week (2014)
- Circa 6200 staff
- 1000 + Drs of all grades
- 2400 Registered Nurses / Midwives
Describing where a story takes place

Setting the Scene
NCA of Blood Transfusion in Medical Patients 2011 (Published 2013)

- Audit was in 2 parts
- Part 1: (9123) 53% of these patients had a transfusion outside of the parameters set as standards (4818)
- Part 2: 1592 records 20% (963) patients had an anaemia that could have been treated by other means
  - 18% of patients were not investigated to determine the cause of their anaemia
  - 60% that were investigated were inadequately treated
  - Correlation between body weight and Hb increment
Specific NCA Recommendations

- Anaemia should be investigated for underlying cause
- Decision to transfuse should take into account laboratory findings, patients signs and symptoms and the underlying cause of anaemia
- Clinicians should be made aware that Hb increment is dependant on patients weight
- In medical patients with anaemia there should be medical reassessment after each transfusion
- Further research is required to provide the evidence of appropriate transfusion in medical patients
PBM: Launched July 2014

‘Patient Blood Management’ represents an international initiative to manage their blood use effectively.

Evidence shows that the implementation of PBM improves patient outcomes by on the avoidance of transfusion and reducing the inappropriate use of blood.
The need for change at UHCW…

Evidence of Over transfusion (NCA)

UHCW RBC usage Was starting to increase

1 fatality during July 2014 as a result of TACO
How did we do it?: Phase 1

- Conversations: Medical Director, Associate Medical Directors, and Clinical Directors
- Used HTC members
- Campaign ‘Don’t use 2 until you review’
- Aligned campaign to Trust values
- Presented NCA and local data
- Provided education at speciality level
- ‘Grand Round’
- Engagement on wards (Used Blood Track)
- Adapted Transfusion Pathway (Added weight)
- Implemented Transfusion Algorithm and RBC Calculator
Making single unit transfusions work

- Implemented November 2014
- Trust wide
- However ultimate focus on specific wards
- Transfusion Dashboard
Phase 2

- ‘Birds eye view’
- PBM Practitioner (12 month secondment)
- Pre Op Algorithm and education
- GPAU (Follow the transfusion)
- GP Algorithm / Gateway
- GP education
Trust Wide Performance

**IMPROVE**

- Nurse led injection service within Ambulatory Care
- Stop Before you Block re-launched by Anaesthetics
- Roll out of WOWS across the hospital to support timely TTO management
- Single Unit Transfusion project
- Piloting a GP SAU on Ward 22 from June 2015
- UHCW named NHS Clinical Research Site of the Year 2015
- Exploring city centre based Xray and Ultrasound
- Centre of Excellence for Digital Pathology

Openness  Partnership  Improve  Learn
Results so far

- RBC usage has decreased
- We produce a quarterly report
- Patient activity has increased by 4.9% (April 2014 – March 2015)
- Recent request audit demonstrates 1/5\textsuperscript{th} of all transfusions are single unit

- Recent transfusion data demonstrates further reductions in RBC usage
- Our challenge is to maintain the momentum!
- We need to audit and research this change

### RBC Usage Comparison to previous year:

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Total</th>
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<tr>
<td>2013/14</td>
<td>4556</td>
<td>4669</td>
<td>4505</td>
<td>4158</td>
<td>17888</td>
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<td>2014/15</td>
<td>4484</td>
<td>4647</td>
<td>4295</td>
<td>4028</td>
<td>17454</td>
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<td>Difference</td>
<td>-72</td>
<td>-22</td>
<td>-210</td>
<td>-130</td>
<td>-434</td>
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<tr>
<td>Cost (Saving)</td>
<td>-£8,773.20</td>
<td>-£2,680.70</td>
<td>-£25,588.50</td>
<td>-£15,840.50</td>
<td>-£52,882.90</td>
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The Role of the PBM Practitioner

- Change attitude towards RBC usage
- Create Leads/ Make contacts
- Patients advocate
- Audit and Re-audit
- Evidence based practice
- Time management
- Different focus
How to make PBM a SUCCESS!!!

- Combating common attitudes towards change
- Behavioural change - easier said then done!
- Acceptance of change - Evidence!
- Provide advice, be visible and approachable
- Take and make opportunities
- Networking/Contacts/Leads
Education, Promote, Monitor

- Generate conversations
- Generate ideas
- Can we learn from international citizens?
- Consultants - Are they ‘on board’?
- Ward presence
- Roving Board
- Competition
THINK! EVERY SINGLE TIME
Importance of Audit

- PBM Audit
- Request Audit
- GCC Iatrogenic Audit
GCC Auditing Iatrogenic Anaemia

• Iatrogenic - of or relating to illness caused by medical examination or treatment.

• Iatrogenic anaemia in critically ill patients is one of the biggest causes of anaemia in this patient group.

• Finding the balance.
Key Findings: Week 1

- Average blood loss total: 265.4 mls
- Total loss range from 190 – 305.8 mls
- Laboratory range from 60 – 129 mls
- Arterial gas range from 123 – 390 mls
Key Findings: Week 2

- Average total blood loss: 241.8 mls
- Total loss range: 210.8 – 273.6 mls
- Arterial Gases loss range: 140.4 – 197.6 mls
- Laboratory Test loss range: 60 – 80 mls

![Total Volume Blood Loss (Arterial&Lab Test) Week 2](chart.png)
So how do we compare?

- Andrews et al (1999) daily loss of 45.7mls arterial gases only
- Ellstrom (1989) daily loss 39mls for arterial gases only
- Tarpey & Lawler (1990) 66mls per day total blood loss (arterial gases 23.6mls)
- Low et al (1995) 57mls daily total blood loss
- UHCW (2015) 50.72mls daily total blood loss

Observations

- Patients on average lost 265.4mls per person in the first 5 days. This is the equivalent volume of one unit of blood and 5.3% total blood volume.
- Daily blood lost on average was 53.8mls higher than some international studies.
- Patients over 70 had a higher number of samples taken in week one.
- It cannot be concluded that samples are being unnecessarily drawn, given the dynamic state of critically ill patients.
- Laboratory tests are taken at a regular frequency, could this be a pattern that could be reviewed?
What Next?

- Reduce the volume of blood taken for phlebotomy by taking smaller samples
- Lower Vacuum Set Blood Bottles
- Liaise with Pathology
- Liaise engineers
- Liaise with GCC
- Make it real - Present findings
- Pilot!!
Producing Patient Information

- Anaemia: The Basics
- Diet and Anaemia: Eating to best manage anaemia
- How can I increase iron in my child’s diet?
- IV Iron Therapy
- Erythropoietin: What is EPO?
Future Projects
TEG in Trauma

- Engagement
- Support
- Trial
Policy

- Anaemia Policy
- Guidance
- Evidence base
- Where do you draw the line?
Do you need someone like me?

- Time
- Out on the wards
- Audit data collection- In depth
- Different focus
- Education
- Facilitate
- Policy

- Measure success