Better Use of Data: The AIM II Trial

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Overview

- Setting the scene:
 - using benchmarking data to support Patient Blood Management
- Overview of AIM II the AIM II dataset
- Progress with the trial
- Benchmarking list for the Trial
 - What could benchmarking look like?
- Action Plan for improvement



Setting the Scene



Benchmarking

'To improve one's own performance by comparing yourself with and learning from others who have achieved high standards of care' Should be structured, continuous and collaborative with the aim of continuous quality improvement

Apelseth et al 2012 Benchmarking: Applications to Transfusion Medicine <u>Transfusion Medicine Reviews in</u> <u>press</u>

Blood Stocks Management Scheme





How can we find out how blood is being used?

• By time consuming retrospective studies or prospective audits



- Or by asking transfusion teams for anecdotal information
- Or by using information produced for recharging cost of blood transfusion to clinical areas

AIM II – Mining the data

- Patient level transfusion data is needed to determine meaningful and appropriate use.
- Where is the data ?



It's in there somewhere...





AIM II – Data Mining



Blood Stocks Management Scheme

Data Elements for Blood Utilization Analysis



Patient ID (encrypted)	 Date and time of transfusion
Date of admission and discharge	 Transfused component
Year of birth	 Donation number
• Gender	Product code
Healthcare Resource Group (HRG)	Expiry date
Ordering physician	
Directorate	 Pre and post transfusion results
Mortality Flag	
Transfusion yes or no?	Adverse events

Progress with the Trial...(12 months in)



- A one month dataset has been extracted and uploaded by ABC from all four sites
- Validation of that uploaded dataset has been done by one site only
 - Two sites are still in talks
 - One site has stalled
- The 24 month dataset collation has yet to be completed.

Challenges

Definition * Making URD/Reg.	 Time and resource from Blood bank manager, Laboratory and LIMS IT specialists Matching the data between LIMS and PAS (easier if there is a data warehousing facility) HRG coding is not ideal
Next Steps	
	 Benchmarking of data between trial sites and internationally (USA, Sanguin) Incorporate coded reason for clinical use chosen at time of request by clinician Future roll out will depend on the success of the trial and the size of the hurdles to be overcome

Benchmarking List for the AIM II Trial

Primary hip replacement Revision hip replacement Repair fractured hip Primary coronary artery bypass grafting Redo coronary artery bypass grafting Coronary artery bypass grafting plus other procedure	Variceal upper GI haemorrhage Non-variceal upper GI haemorrhage Anterior resection Oesophagectomy Gastrectomy Whipples / pancreatectomy Nephrectomy Cystectomy Radical prostatectomy Caesarean section elective Abdominal aortic aneurysm (open)
Paediatrics	Haematological malignancy
Neonatal disorders	Non-malignant haematology

1 month's data from 1 UK Trial Hospital



Transfused Product: 9, Apheresis Platelets, Month of Discharge: Total

10

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per HRG Chapter



One month data Platelet Use in 1 UK hospital by HRG Chapter



HRG Chapter Metrics	Avg Units Transfused My Hospital	Total Units Transfused
Ch - A	1.8	20
Ch - C	1.8	11
Ch - D	1.2	7
Ch - E	3.5	53
Ch - F	3.8	61
Ch - G	2.3	14
Ch - H	4.6	37
Ch-K	1.0	1
Ch-L	2.2	13
Ch - M	1.5	3
Ch - N	1.0	1
Ch - P	2.3	89
Ch - Q	2.9	20
Ch - S	2.8	411
Ch - U	29.0	29
Ch - V	1.7	5
Ch-W	3.3	13

1 month's data RBC in hips and knees



Metrics	My Hospital -	My Hospital - Not	Hospital	Hospital Not
	Transfused	Transfused	Transfused	Transfused
	1	1	50.00%	50.00%
	0	1	0.00%	100.00%
	8	14	36.36%	63.64%
	1	10	9.09%	90.91%
	0	1	0.00%	100.00%
	0	3	0.00%	100.00%
	2	33	5.71%	94.29%
and ⁴	0	14	0.00%	100.00%
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		Metrics My Hospital - Transfused 1 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Metrics My Hospital - Transfused My Hospital - Not Transfused 1 1 1 0 1 1 1 0 1 2 33 1 0 3 3 2 33 1 1 0 1	Metrics My Hospital - Transfused My Hospital - Not Transfused Hospital Transfused 1 1 50.00% 0 1 0.00% 0 1 0.00% 1 0 1 0.00% 0 1 0.00% 0.00% 1 0 9.09% 0.00% 0 3 0.00% 2 33 5.71% 0 14 0.00% 0 14 0.00%

HA12B:Major Hip Procedures Category 1 for Trauma with CC,

HA12C:Major Hip Procedures Category 1 for Trauma without CC,

HA13A:Intermediate Hip Procedures for Trauma with Major CC

HA13B:Intermediate Hip Procedures for Trauma with Intermediate CC,

HA13C:Intermediate Hip Procedures for Trauma without CC)

HB21A:Major Knee Procedures for non Trauma Category 2 with Major CC,

HB21B:Major Knee Procedures for non Trauma Category 2 with CC

HB21C:Major Knee Procedures for non Trauma Category 2 without CC



Time), EA15Z: Coronary Artery Bypass Graft (First Time) with Cardiac Catheterisation, EA16Z: Coronary Artery Bypass Graft (First Time) with Percutaneous Coronary Intervention, Pacing, EP or RFA)

Hypothetical benchmarking

Blood and blood component use in coronary artery bypass surgery



Hypothetical benchmarking



To enable participation in national benchmarking scheme

- Electronic order communications with menu-driven coded reason for transfusion request
- Electronic blood tracking (ideal)
- Trust data warehouse
- LIMS system that supports data retrieval appropriately
- Sufficient IT resource in transfusion, haematology and Trust IT
- Buy in from Trust executive team

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