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Enhancing the design of a national audit and feedback programme to improve blood utilization in the UK

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Advancing A&F Scientific Update, Calgary, Alberta



www.city.ac.uk

WHY USE TWO? WHEN ONE WILL DO

Transfusing one unit of blood at a time reduces the risk of an adverse event – **Transfuse one then reassess**



**BLOOD IS A GIFT
USE IT WISELY**

To find out more go to http://staffnet/TransfusionMedicine/blood_is_a_gift.asp



Why blood transfusion?

~1 in 5 transfusions
'unnecessary'
'inappropriate'



Stanworth et al. 2010

NHS
Blood and Transplant

National Comparative Audit



2015	Audit of Lower Gastrointestinal Bleeding and the Use of Blood (PDF)
	Audit of Patient Blood Management in adults undergoing elective, scheduled surgery (PDF)
2014	National Red Cell Survey (PDF)
	Audit of Patient Information & Consent (PDF)
2013	Anti-D Audit Report (PDF)
	Patient Blood Management Survey Report (PDF)
2012	Audit of Blood Sample Collection and Labelling (PDF)
2011	Audit of Blood Transfusion in Adult Cardiac Surgery (PDF)
	Audit of Use of Blood in Adult Medical Patients Part 1 (PDF)

CURRENT FEEDBACK PRACTICE



1. Standards agreed by audit group
2. Hospitals audit consecutive cases over 2-3 months
3. Feedback reports delivered ~ 1 year later

Table 3: Patient Blood Management algorithms: overall performance (see algorithms in Annex 1)

Algorithm	Standard MET	Standard NOT MET	EXCLUDED	INSURANCE
PBM1	1305	1531	1044	
PBM2	28	214	3529	
PBM3	3	129	3655	
PBM4	71	182	3529	
PBM5	340	201	3279	
PBM6	661	134	3027	
PBM7	133	675	3027	
PBM8	669	2088	996	
PBM9	920	1492	1358	
PBM10	1714	312	1748	
PBM11	175	1910	1748	

* MET/(MET+NOT MET)

	Recommendation	Action required by
1	Trust Boards and Clinical Commissioning Groups (CCGs) must work together to encourage change	Trust boards and CCGs

National Comparative Audit of Blood Transfusion
UKAS
Blood and Transplant

12 February, 2016

*****NEW MESSAGE*****

2016 Haematology Audit Organisational Questionnaire

Thank you for contributing data to the 2016 haematology audit – we have getting on for 2,500 cases to date – a terrific response.

To better understand why there might be a variation in practice, we try to understand the organisational factors that might influence the service you deliver. Please take a few minutes to complete the Organisational Questionnaire.

There are 2 ways you can do this – online using Survey Monkey link in the hyperlinks section of this audit homepage, or print off the PDF copy of the form, complete it, and send it to our FREEPOST address.

John GC, David D, Ross Gray and Brendan Duggan

Documents (52)
-- please select section --

Hyperlinks

2015 FBM Online Toolkit
<http://toolkit.affinitie.org>


2016 Haematology Organisational Audit LINK
https://www.surveymonkey.co.uk/r/2016haematologyAudit_NCA

Important Documents

[2016 Haematology Audit Organisational Questionnaire.pdf](#)

[2016 Haematology Audit Booklet.pdf](#)

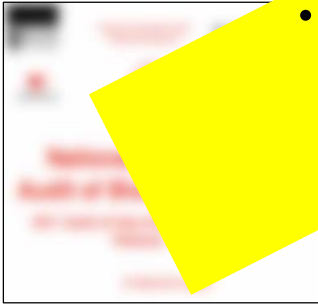
[2016 Haem Audit question.pdf](#)

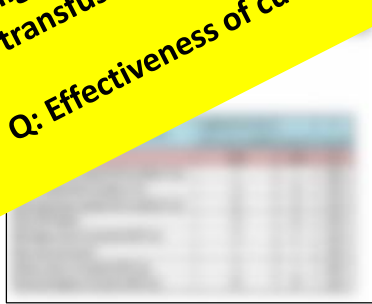


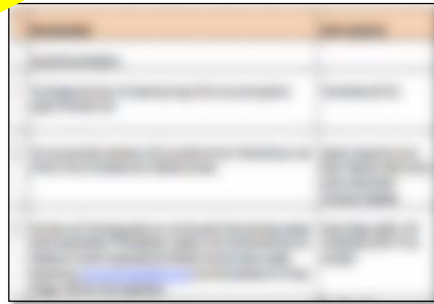
No formalised support
for planning response
to feedback

CURRENT FEEDBACK PRACTICE

1. Audit standards based on clinical guidelines
2. Hospitals audit consecutive cases over 2-3 months
3. Feedback compared to standards/other hospitals







• High proportion (25%) of unnecessary transfusions persist (Estcourt et al. 2012)

• Q: Effectiveness of current A&F strategies?



Development & Evaluation of Audit and Feedback Interventions to Increase evidence-based Transfusion practIcE

AFFINITIE as an A&F laboratory

- Conducted in **partnership with NHSBT**



- AIMS: Use existing NCA programme as platform for...
 1. Applying **behavioural research + theory** to **design** two 'enhanced' feedback interventions
 2. **Evaluating** effectiveness of enhanced feedback interventions against each other and current practice



The AFFINITIE team

NHS Blood and Transplant (UK)

- **Simon Stanworth (PI)**
- Megan Rowley
- John Grant-Casey (NCA manager)



City University London (UK)

- Jill Francis
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- Robbie Foy
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- Suzanne Hartley
- Lauren Morreau



University College London (UK)

- Steve Morris
- Susan Michie



Ottawa Hospital Research Institute (Canada)

- Jeremy Grimshaw



Funded by the National Institute for Health Research

AFFINITIE Programme structure:

Workstream 1 (WS1: Intervention development and piloting) [Months 1-24]

Development, piloting and refinement of two enhanced feedback interventions: 'enhanced feedback reports' and 'enhanced follow on support'

Workstream 2 (WS2: Evaluation) [Months 5-52]

Two, 2x2 Cluster-randomised trial to **evaluate effectiveness** of enhanced feedback interventions compared with usual feedback, with a decision analytic modelling analysis for **cost-effectiveness**

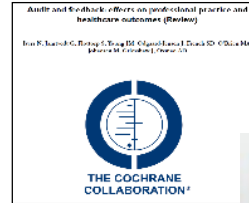
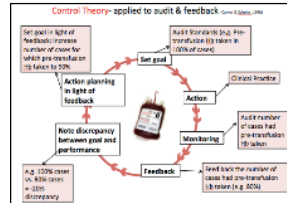
Workstream 3 (WS3: Fidelity) [Months 25-54]

Parallel process evaluation to investigate **fidelity** of interventions as **delivered, received, enacted**

Workstream 4 (WS4: Implementation) [Months 6-60]

Development of **general recommendations** and tools

Intervention development



Int 1: Enhanced 'content'

- *What is delivered to hospitals?*

Int 2: Enhanced 'follow on support'

- *Helping staff respond to feedback*

Int 1: Enhanced content – 'Are current feedback reports theory + evidence-based?'

Content analysis (n=12 reports) for BCTs consistent w/ Control Theory

BCT	N = reports	BCT	N= reports
Goal-setting (audit standards)	11	Review goals (what needs to change locally in light of feedback?)	1
Feedback on behaviour (feedback on current practice)	8	Action Planning (how to achieve change?)	5
Discrepancy between behaviour and goal (practice vs standards)	6	Self-monitoring (local monitoring of practice)	0

Content analysis: evidence-based FB characteristics (Ivers et al. 2012)

Evidence-based FB characteristic	N of FB cycles (n= max 3)
Format: multiple modalities	N = 0 (Always writing)
Source: Supervisor or Peer	N= 0 (Always regulatory body)
Frequency: Monthly, repeated cycles	N = 0 ('one-off,' ~ 12 months)
Baseline performance: low (< 25%)	N= 0 (mean % compliance standards: 75%)
Instruction for improvement: both explicit, measurable goal AND action plan	N= ~ 3 (AP, no review goals, not behaviourally specific)
Comparator: peer performance, particularly achievable benchmark of care (i.e. top 10%)	N= ~3 (Regional peer performance, no achievable benchmark)
Nature of feedback: supportive rather than punitive	N= 0 (no social reward/support BCTs)

Intervention 1 'enhanced CONTENT': Overview

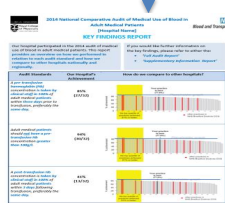
Enhancement guidance manual + template reports:

Theory/Evidence informed enhancements

1. Include all **theory based techniques** in reports
2. **Be specific:** phrase audit standards, feedback, recommendations in terms of **who/what/where/when**
3. **Be relevant:** Only deliver **feedback related to standards**
4. Include **multiple comparators** (i.e. regional/ top 10%)
5. **Re-monitor:** conduct **rapid re-audit** comparing past/present behaviour
6. **Recognise good practice:** Include **positive feedback** (i.e. message of encouragement)

Brief Description and Rationale	How to apply	Consensus Rating (1 low – 5 high)	Quotes from Acceptability and Feasibility Interviews
<ul style="list-style-type: none"> Evidence that guidelines are more likely to be implemented if they are behaviourally specific (Mills et al 2005) Evidence A&F more effective when it includes explicit action plans and goals (Ivers 2012) 	Behavioural specificity = Who should do what, to whom, when, where? <ul style="list-style-type: none"> Who is responsible for performing behaviour (e.g. nurses) What action is performed (e.g. Check wristbands) Who is the recipient of the behaviour (Patient group) When behaviour is performed (e.g. Immediately pre-transfusion) Where behaviour is performed (e.g. At the bedside) Specified behaviour = Nurses should check patients' wristbands at the bedside immediately pre-transfusion.	4.42	This action plan... we can set timeframes within it and we can task people with it so I think that sort of thing trusts would love because it gives you a very concrete thing. This is what we're doing, this is when we will do it by, and check that we do... ...we need this practical stuff. [Regional TP re Action Plan template]

AUDIT STANDARD	FEEDBACK	RECOMMENDATION	ACTION PLAN
A post-transfusion Hb concentration is taken [what] by clinical staff [who] in 100% of adult medical patients [where] within 3 days following transfusion [when], preferably the same day *where not specified	Clinical staff [what] took a post-transfusion Hb concentration [what] in 100% of adult medical patients [where] following transfusion [when]	Clinical staff [what] should take a post-transfusion Hb, if there are good clinical justifications for not taking a post-transfusion Hb, concentration (e.g. clinically transfused patients), alternative outcome measures should be assessed and recorded (e.g. checking symptoms of anaemia) [what]	See action planning template in prototype enhanced reports.



Enhanced feedback reports:
transfusion clinical staff

Graded entry reports:

2014 National Comparative Audit of Medical Use of Blood in Adult Medical Patients (Hospital Name) Blood and Transplant

KEY FINDINGS REPORT

Our hospital participated in the 2014 audit of medical use of blood in adult medical patients. This report provides an overview on how we performed in relation to each audit standard and how we compare to other hospitals nationally and regionally.

If you would like further information on the key findings, please refer to either the "Full audit report" or "Supplementary findings report" regionally.

Audit Standards | **Our Hospital's Achievement** | **How do we compare to other hospitals?**

Standard 1: A pre-operative haemoglobin (Hb) concentration is taken by laboratory staff on 20% of adult medical patients with 10 days prior to transfusion preferably the same day. **80%** (157/192)

Standard 2: Adult medical patients should not have any transfusion of red blood cells (RBCs) or platelets unless they have a transfusion trigger less than 100g/L. **94%** (180/192)

Standard 3: A post-transfusion Hb concentration is taken by laboratory staff in 20% of adult medical patients within 1 hour following transfusion preferably the same day. **41%** (14/35)

SMALL:

Key findings report
1-2 pages

2014 Audit of Patient Blood Management in Adult Outpatient Surgery, Scheduled Surgery

Section 3: How did our hospital perform?

Pre-operative anaemia optimisation

PBM standard 1: Clinical staff must ensure that patients listed for elective major blood loss surgery have an Hb measured at least 14 days pre-operatively and act upon results.

Haemoglobin is defined as Hb of less than 120g/L in men less than 120g/L in women.

A pre-operative Hb was taken at least 14 days pre-operatively by clinical staff in 47% (212) of patients listed for elective major blood loss surgery compared to 49% (1386/2838) nationally (patients with hospital rank of better were excluded).

In relation to pre-operative anaemia optimisation, clinical staff managed patients listed for elective major blood loss surgery appropriately in 47% (212) of cases compared to 46% (1305/2838) nationally.

- Those with anaemia who have had iron deficiency identified and treated
- Those without anaemia, or those with non-iron deficiency anaemia are not expected to be optimised but meet the standard.

How do we compare with other hospitals?

Figure 3: PBM standard 1: Pre-operative anaemia. Each chart shows performance in comparison with the other participating hospitals. The red line illustrates an achievable benchmark of 90% recognition that a standard of 90% would not be commonly achieved.

MEDIUM:

Full findings report
~10 pages

Analysis of compliance with standards was undertaken using a series of algorithms as shown in Appendix 1

Overall performance against standards

Algorithm	Standard	Standard MET	EXCLUSIONS	INDEPENDENT DATA	% standard MET	95% CI (95% MET)
PS01	2001	2124	124	17	40%	37% (31-47)
PS02	28	214	1029	126	12%	9% (6-15)
PS03	1	129	1651	112	7%	5% (3-11)
PS04	71	182	2129	112	20%	18% (15-23)
PS05	340	282	2179	77	67%	65% (62-70)
PS06	651	134	2027	75	83%	81% (79-85)
PS07	128	673	1627	82	12%	9% (6-15)
PS08	600	268	916	144	24%	22% (19-26)
PS09	630	1492	1118	127	38%	35% (32-41)
PS10	2161	32	2168	122	8%	6% (4-10)
PS11	175	110	1108	122	8%	6% (4-10)

Patient Blood Management performance by type of procedure

Procedure	Patients listed for surgery	Patients included in analysis	Patients with Hb measured	Patients with Hb measured > 14 days pre-op	Patients with Hb measured > 14 days pre-op & acted upon	Patients with Hb measured > 14 days pre-op & acted upon & iron deficiency identified
PS01	176	164	120	10	10	10
PS02	46	45	32	1	1	1
PS03	10	10	7	0	0	0
PS04	10	10	7	0	0	0
PS05	10	10	7	0	0	0
PS06	10	10	7	0	0	0
PS07	10	10	7	0	0	0
PS08	10	10	7	0	0	0
PS09	10	10	7	0	0	0
PS10	10	10	7	0	0	0
PS11	10	10	7	0	0	0

Standard 1: Pre-operative anaemia

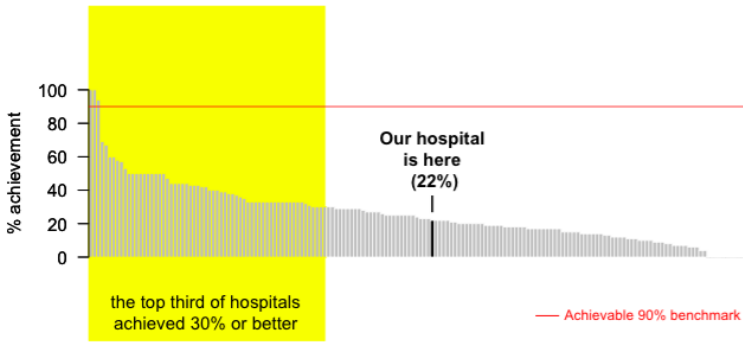
Standard	Patients listed for surgery	Patients included in analysis	Patients with Hb measured	Patients with Hb measured > 14 days pre-op	Patients with Hb measured > 14 days pre-op & acted upon	Patients with Hb measured > 14 days pre-op & acted upon & iron deficiency identified
PS01	176	164	120	10	10	10
PS02	46	45	32	1	1	1
PS03	10	10	7	0	0	0
PS04	10	10	7	0	0	0
PS05	10	10	7	0	0	0
PS06	10	10	7	0	0	0
PS07	10	10	7	0	0	0
PS08	10	10	7	0	0	0
PS09	10	10	7	0	0	0
PS10	10	10	7	0	0	0
PS11	10	10	7	0	0	0

LARGE:

Supplementary findings report
~30+ pages

Post-operative transfusion indicated (PBM standard 8):
In patients who do not have active post-operative bleeding, clinical staff should only prescribe a transfusion if the Hb is less than the defined Hb threshold or for transfusion (70g/L in patients without acute coronary ischaemia 80g/L in patients with acute coronary ischaemia).

Our hospital achieved this standard for 22% (4/18) of patients



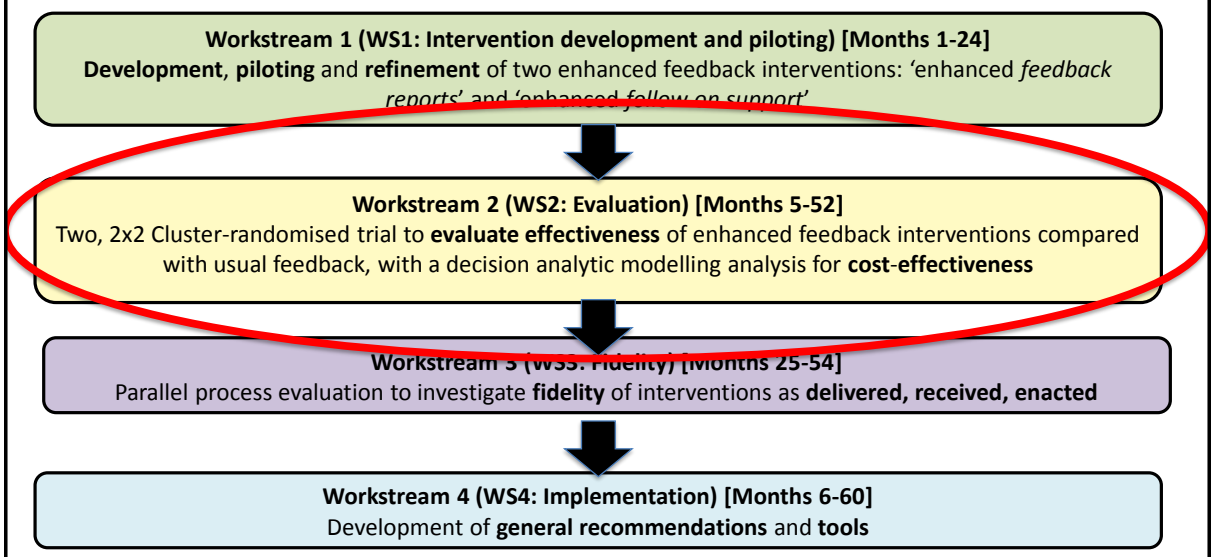
- ✓ Behaviourally specific standards
- ✓ Feedback on performance
- ✓ Clearly related to standards
- ✓ Multiple comparators
- ✓ Multiple modalities

Adapted from: Willis, Thomas A., et al. "Action to Support Practices Implement Research Evidence (ASPIRE): protocol for a cluster-randomised evaluation of adaptable implementation packages targeting 'high impact' clinical practice recommendations in general practice." *Implementation Science* 11.1 (2016): 25.

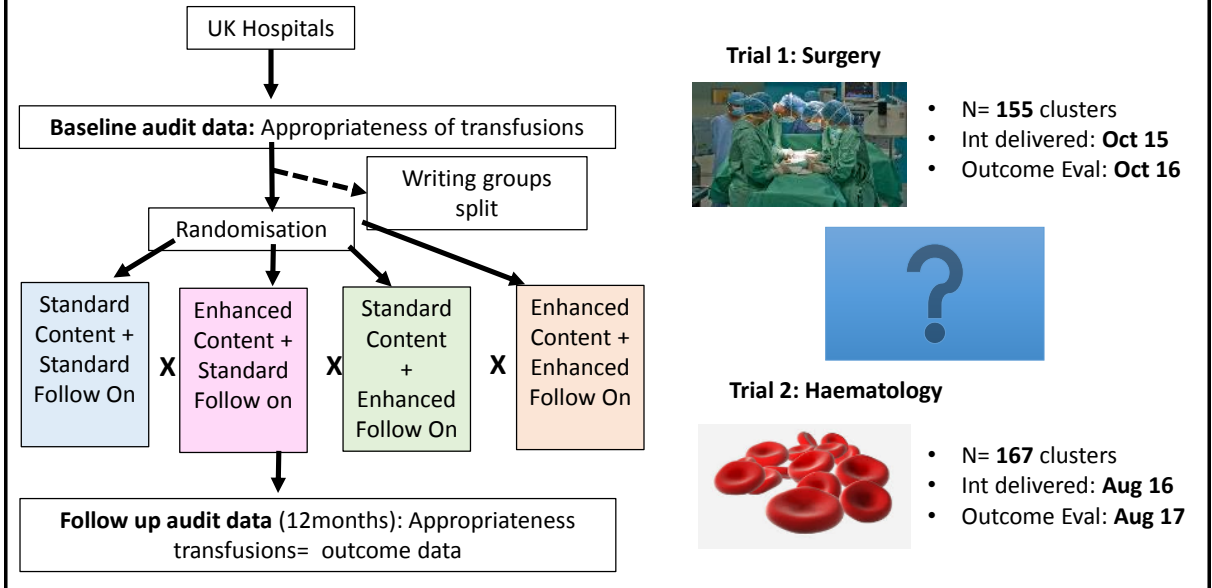
What should we do next? Recommendations:

For our Hospital	For clinical staff responsible for pre-operative management	For the Hospital Transfusion / Patient Blood Management Committee
<ul style="list-style-type: none"> Well done. We showed a high level of achievement in this standard. We are performing within the top third of hospitals nationally. This demonstrates strong support for PBM within our hospital. However, there is room to further improve our practice. We should prepare an action plan that will recognise and build upon our existing good practice to further improve the service that we provide. 	<ul style="list-style-type: none"> Clinical staff should ensure that patients are counselled about the relationship between anaemia, morbidity and mortality, and should be given the opportunity to defer non-urgent surgery until anaemia is investigated and treated. Clinical staff should ensure that anaemia screening occurs between the referral for surgery and decision to proceed in order to allow investigation and correction if appropriate. Even where surgery is urgent, clinical staff should still use whatever time is available before operation for anaemia investigation and treatment initiation. 	<ul style="list-style-type: none"> The Committee should ensure that healthcare pathways are structured to enable anaemia screening and investigation/ correction before surgery. The Committee should work with Commissioners to formalise integrated pathways and funding for the referral of patients found to be anaemic during surgical workup, if the nature of the anaemia suggests that unexpected significant underlying disease is possible. The Committee should work with clinicians to continue monitoring practice in relation to this standard, by conducting further local audits of the number of patients undergoing surgery with anaemia, and feeding back this information to clinical teams.

AFFINITIE Programme structure:



AFFINITIE Cluster RCT with 2x2 factorial design



COMING SOON!

(After lunch!)

- **Intervention 2: 'Enhanced follow on support'**
- *Helping hospitals respond to feedback more effectively*
- **Reflections and implications of partnership process**



for listening!



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National Institute for Health Research

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