NHS
Blood and Transplant

Component Wastage

Frances Sear

Patient Blood Management Practitioner - East of England

Caring Expert Quality

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Component Management

- What it is?
- Why it is important?
- What impact does it have?
- What can you do?
- What is available to help you?
- What is the impact of change?

A balancing act

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Stock v supply

Optimising the resources we have to meet all Hospital demand

Optimising the stock you hold to meet your patient demand whilst trying not to waste a precious and costly resource

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Not so simple after all…

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Considerations

Limited supply of donor blood

Demand

Need to maintain supply of right component mix

Cost of wastage to NHS & Hospitals

Are these really significant enough to worry about?

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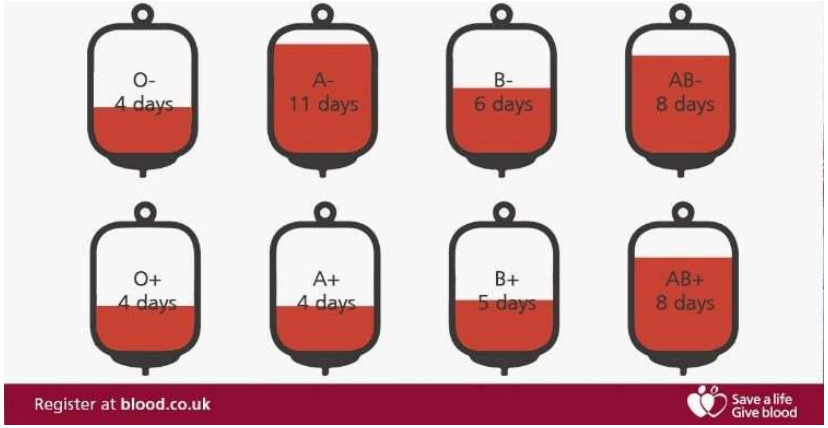
£92,474

EoE Regional red cell wastage just for Quarter 1 2017

Reduced NHSBT stock levels this march



O neg

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URGENT COMMUNICATION

A copy of this letter can be found at hospital.blood.co.uk/

Date: 5 April 2018

To: **Transfusion Laboratory Manager, Transfusion Practitioner, Consultant Haematologist with responsibility for Blood Transfusion**

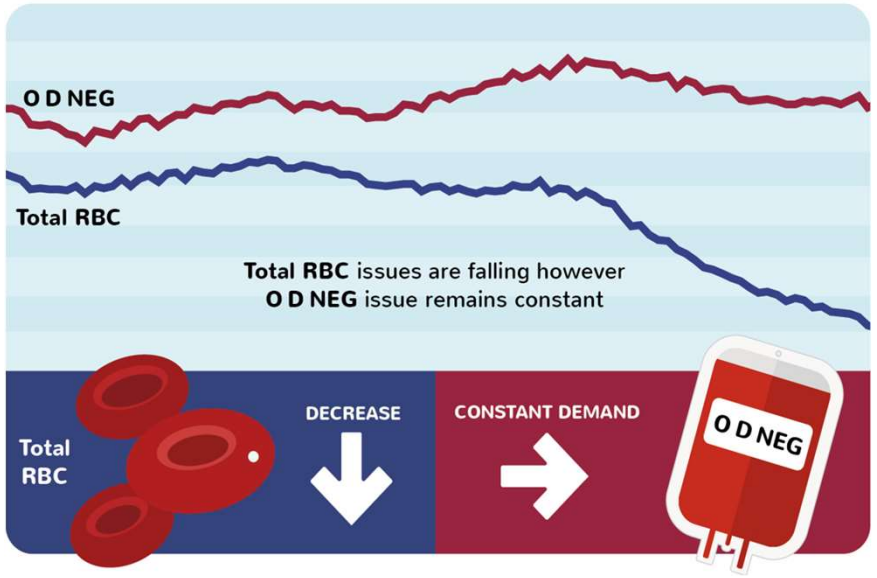
Dear Colleague,

Update on Red Cell Stock Levels – O D negative

Thank you for your help over the Easter period whilst we have rebuilt red cell stocks. Although overall stock levels have improved, including B D negative, we remain challenged with our stock holding for O D negative red cells. Whilst we have had an overwhelming response from donors we still need your support to build our stocks for this particular blood group.

Our ongoing ask is:

1. Please try and reduce your stock levels for O D negative red cells if it is safe to do so. We appreciate that many hospitals have already reduced their stock holding, but further action across more sites would increase NHSBT's central stockholding in the short term.
2. Ensure appropriate use is consistently applied and continue to minimise waste.
3. Consider single-unit red cell transfusion where appropriate - NICE guidelines.
4. Conserve O D negative red cells for group O D negative patients in line with established guidelines.



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What is being done to improve this?

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Regional Component Wastage Reduction Campaign

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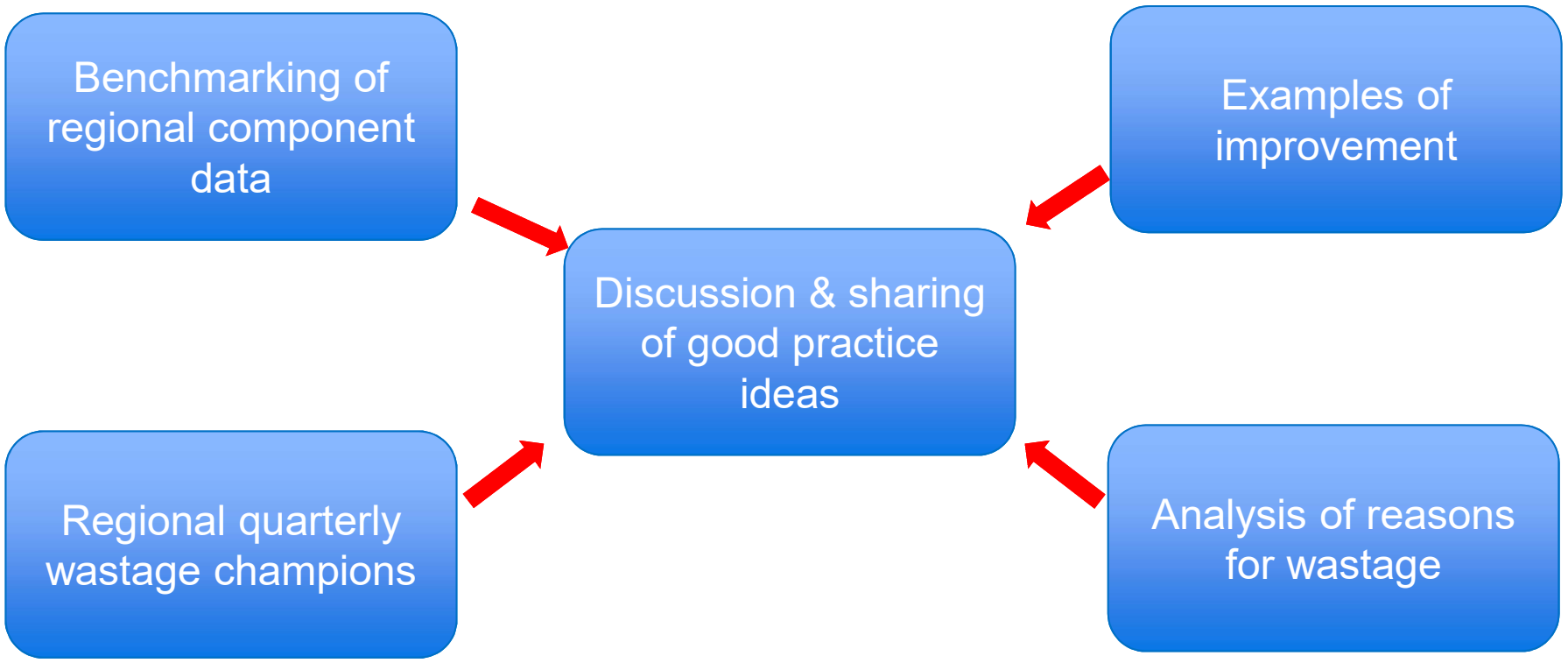
Regional wastage campaign



Looking at reasons for wastage

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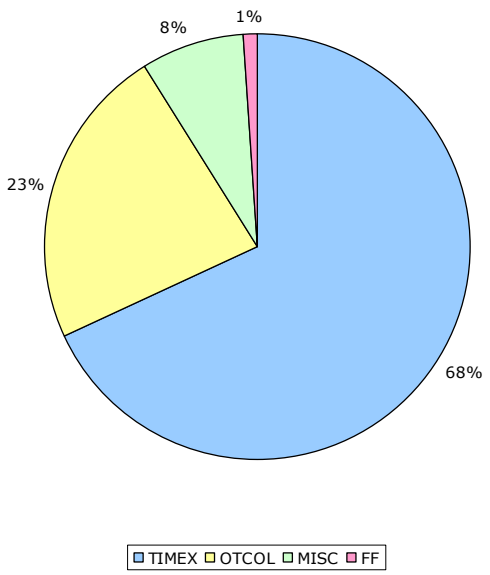
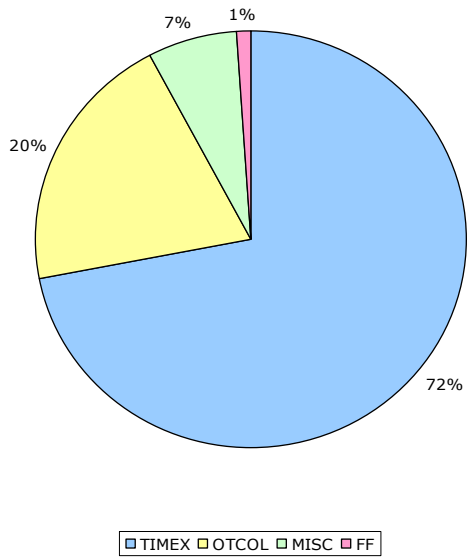
Group O D negative RBC: reasons for wastage Q1 17-18



EoE region: total RBC: reasons for wastage Q1 17-18



Comparing & discussing

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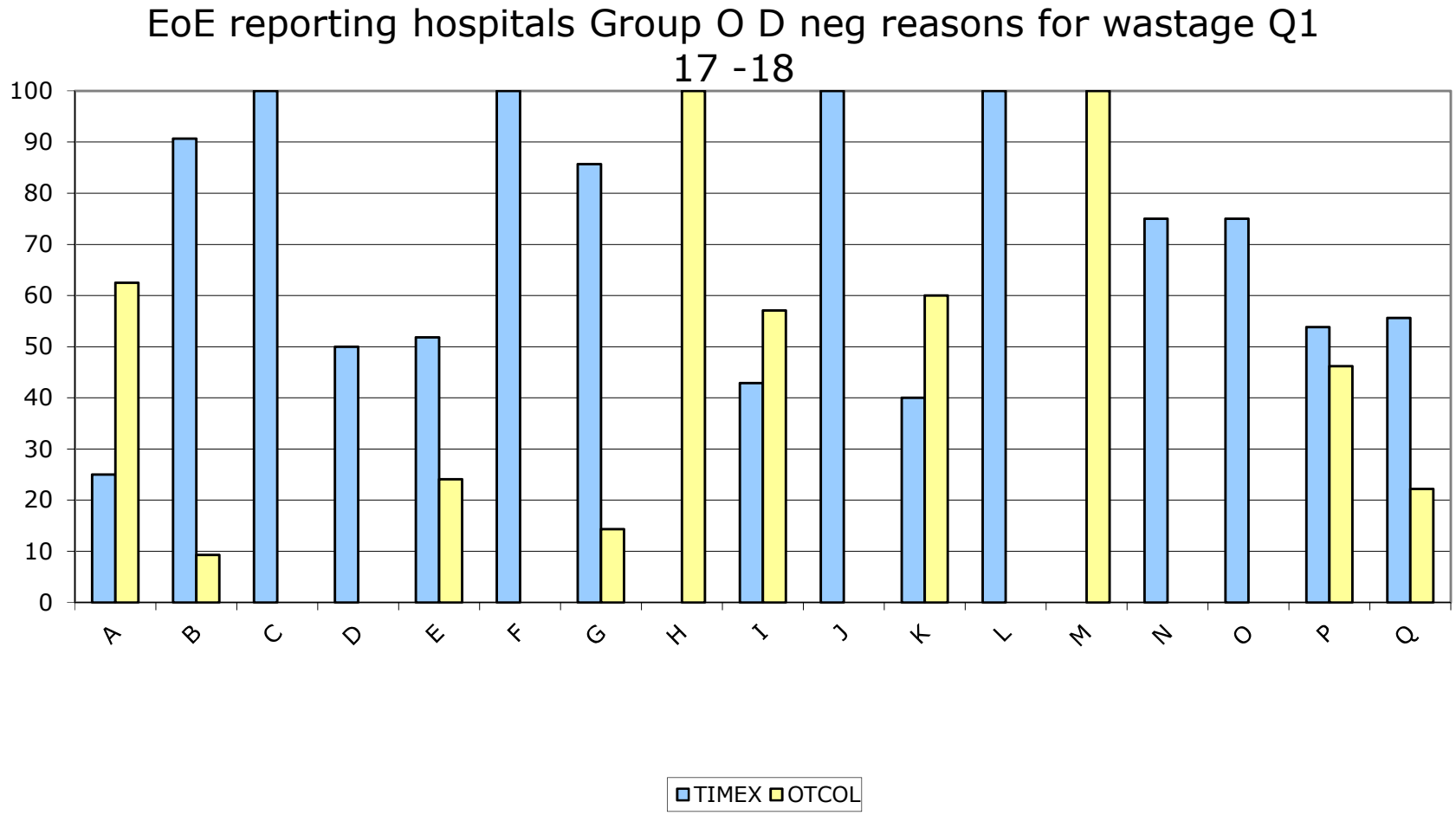

Considering all factors

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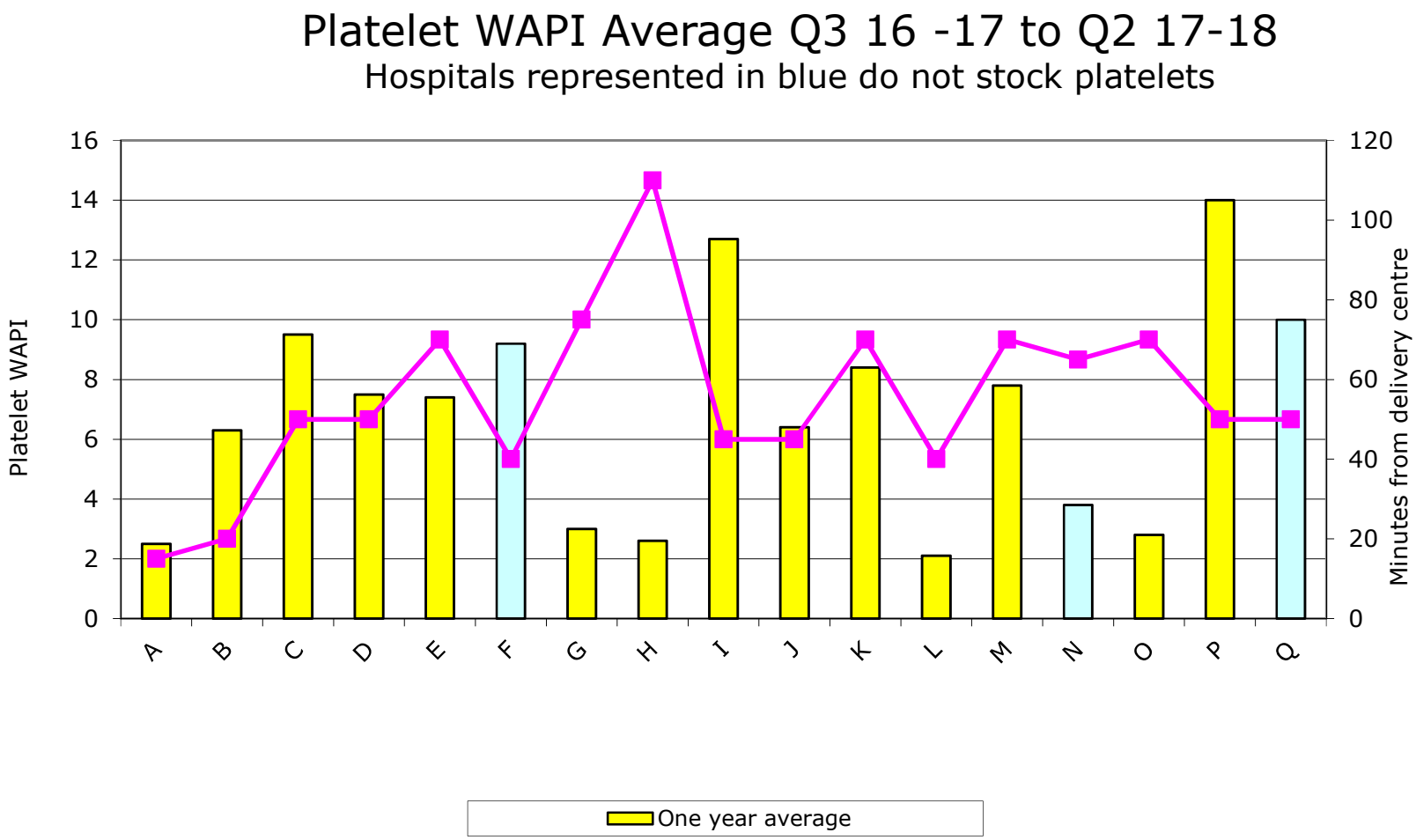

Regional Total RBC WAPI

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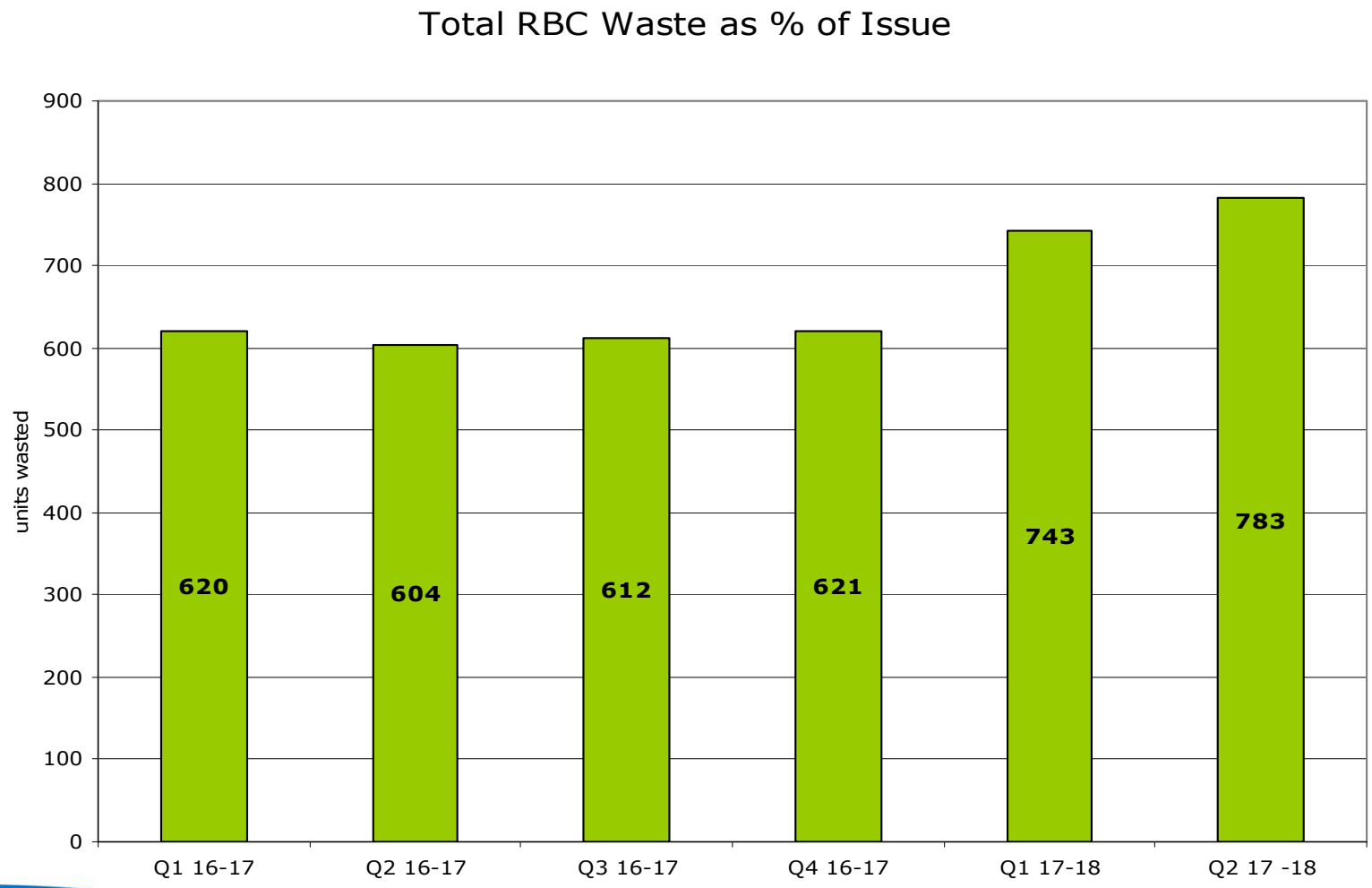

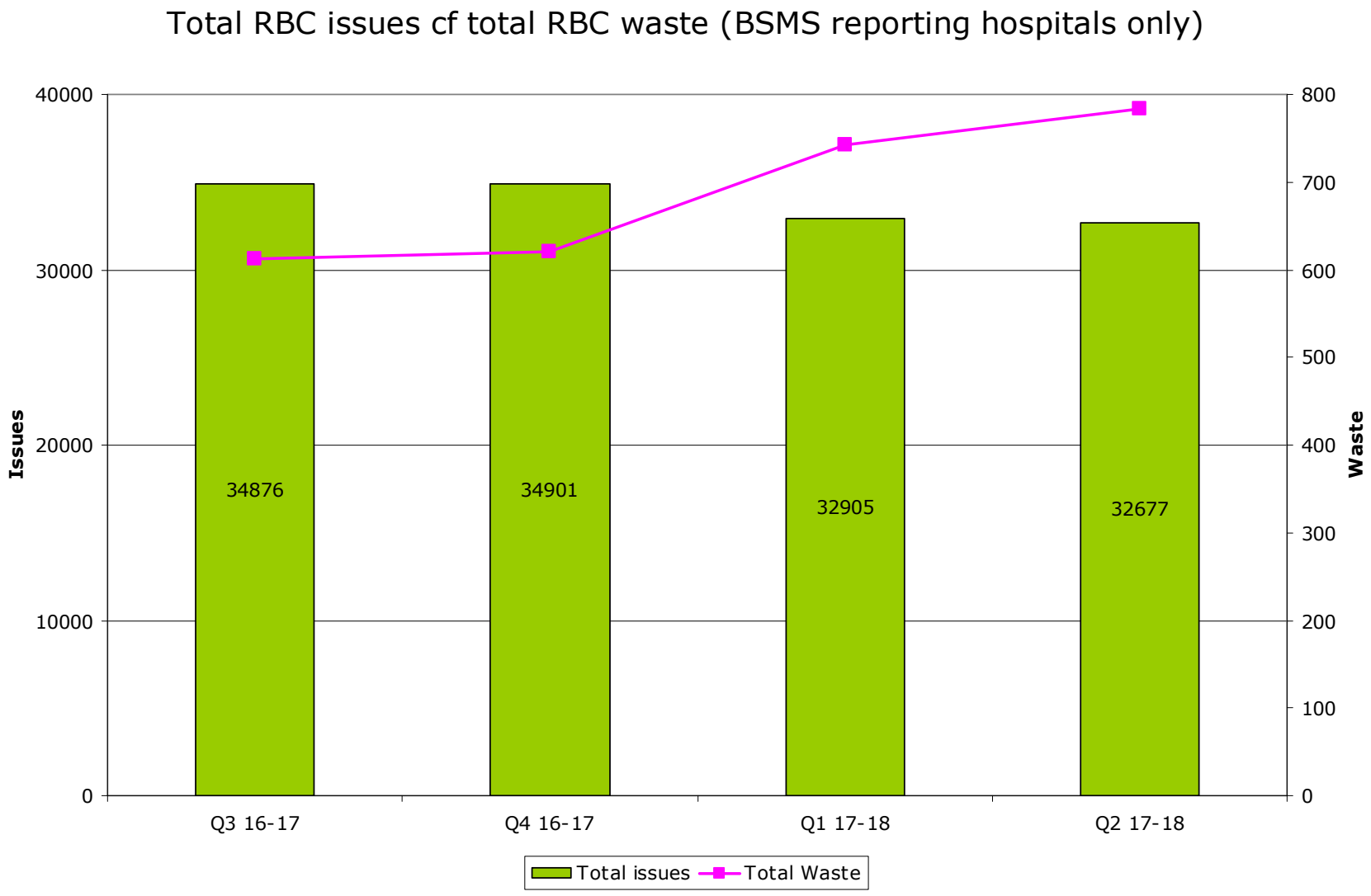
Total RBC issues cf total RBC waste (BSMS reporting hospitals only)
Issues
Waste
40000
30000
20000
10000
0
800
700
600
500
400
300
200
100
0
34876
34901
32905
32677
Q3 16-17
Q4 16-17
Q1 17-18
Q2 17-18
Total issues
Total Waste

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Good Practice shared

- Examples of Stock share between NHS and private hospital
- Stock share of platelets
- Lab empowerment & support by senior clinical staff
- Re-evaluation of stock levels and adjustments
- Reduced reservation time on stock
- More frequent rotation of emergency stock

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- Education
- Audit and review of wasted units
- Trust wide wastage campaigns
- Audit and change to satellite fridge use
- Allocated responsibility for stock rotation and maintenance (and dedicated staff in some case)

So how can you monitor component wastage locally?

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- A monthly 'highlight' report of usage and wastage data is sent out monthly by NHSBT
- The monthly BSMS O neg benchmarked report is sent at the same time
- A number of Hospital specific reports are available via VANESA; *(found as options on the E-Reports tab)*
  - Monthly O Neg – Highlight report
  - Quarterly Red Cell – Top Level report
  - Quarterly Red Cell – Wastage report
- Individual reports and charts can be compiled on VANESA

BSMS O neg report

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NHSBT **East of England RTC**

Percentage of population that are O Neg within RTC 8.67%

		Stock and Issue Data from Feb 2018												O Neg WASTAGE FOR Feb 2018
Hospital Details		NHSBT Issues			Hospital Send or Receive Stock	VANESA NET Issues			Hospital Requests		O Neg Issues-Requests	7 days use Excludes Waste	Average Daily Stock Held	7 days use Includes Waste	
Pulse	Hospital Name	O Neg	Total	% O Neg		O Neg	Total	% O Neg	O Neg Requests	O Neg % Req					
P250	Addenbrooke's Hospital	215	1,485	14.5%					199	13.4%	16	48.7	28.6	44.0	20
P251	Hinchingbrooke Hospital	13	199	6.5%					13	6.5%		5.1	8.0	N/A	No Entries
P252	Ipswich Hospital	53	581	9.1%					53	9.1%		17.4	19.8	17.0	2
P253	James Paget University Hospital	38	431	8.8%					38	8.8%		12.6	13.2	12.2	2
P254	Queen Elizabeth Hospital, (Kings Lynn)	54	305	17.7%					54	17.7%		8.5	13.2	7.8	3
P255	Norfolk and Norwich University Hospital	79	912	8.7%					79	8.7%		23.7	27.7	22.3	6
P256	Papworth Hospital	20	439	4.6%					20	4.6%		10.7	10.1	9.8	4
P257	Peterborough City Hospital	70	558	12.5%					70	12.5%		18.1	13.5	17.4	3
P258	West Suffolk Hospital	68	310	21.9%					68	21.9%		11.9	9.6	N/A	No Entries
P265	Basildon Hospital	83	891	9.3%					81	9.1%		22.1	19.2	N/A	No Entries
P267	Broomfield Hospital	57	387	14.7%					56	14.5%		12.4	14.4	12.2	1
P268	Colchester General Hospital	60	609	9.9%					60	9.9%		18.1	20.3	16.7	6
P271	Harlow Princess Alexandra Hospital	25	338	7.4%	MOVE	36	367	9.8%	25	7.4%		11.1	8.0	N/A	No Entries
P283	Southend Hospital	72	724	9.9%					72	9.9%		14.0	20.9	N/A	No Entries
P290	Nuffield Health Brentwood Hospital	18	50	36.0%	MOVE	7	21	33.3%	18	36.0%		<1	11.6	<1	No Entries
P303	SPIRE Hospital Hartswood	6	12	50.0%					6	50.0%		1.2	4.0	N/A	No Entries
P602	Bedford General Hospital	23	375	6.1%					23	6.1%		8.2	12.0	N/A	No Entries
P619	Lister Hospital, (Stevenage)	47	700	6.7%					44	6.3%		12.9	15.6	12.7	1
P622	Luton and Dunstable Hospital	42	572	7.3%					40	7.0%		9.6	11.5	9.2	2
P637	Watford General Hospital	81	719	11.3%					81	11.3%		14.6	45.6	12.9	7

Data Supplied by the Blood Stocks Management Scheme

Highlight report

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	RBC					Platelets		FFP		Cryo	
	All Issues	RBC vs 12 mth avg	Oneg Issues	Oneg vs 12 mth	Oneg % of issues	Issues	PLT vs 12 mth avg	Issues	FFP vs 12 mth avg	Issues	Cryo v 12 mth avg
East of England	11,527	-0.8%	1,256	0.4%	10.9%	1,606	-3.4%	1,322	15.0%	289	32.3%
National	119,784	0.0%	15,461	0.2%	12.9%	20,748	-2.6%	13,094	1.2%	2,625	-2.0%

Current Month Usage Compared to Average of Previous 12 Months

Month	RBC Issues	Oneg RBC Issues	Oneg % of RBC Issues	Platelet Issues	Aneg Platelet Issues	FFP	Cryo
Mar-18	-13.8%	-1.4%		-35.7%	15.0%	72.4%	-100.0%
Mar-18	674	72	10.7%	74	23	100	0
Feb-18	581	53	9.1%	64	14	37	4
Jan-18	757	98	12.9%	87	23	56	7
Dec-17	812	64	7.9%	149	21	36	4
Nov-17	788	68	8.6%	158	20	54	5
Oct-17	778	70	9.0%	144	19	47	14
Sep-17	892	97	10.9%	124	20	76	12
Aug-17	892	59	6.6%	138	18	52	22
Jul-17	759	62	8.2%	128	25	92	12
Jun-17	833	89	10.7%	81	21	78	10
May-17	770	60	7.8%	97	18	58	24
Apr-17	732	67	9.2%	86	17	46	10
Mar-17	788	84	10.7%	119	23	67	12
12 Mth Avg	782	73	9.3%	115	20	58	11

Wastage taken from data entered into BSMS

Month	RBC	RBC WAPI	Oneg RBC	Oneg WAPI	PLT	PLT WAPI	Aneg PLT	Aneg WAPI
Feb-18	5	0.9%	2	3.8%	1	1.6%	0	0.0%
Jan-18	5	0.7%	0	0.0%	4	4.6%	1	4.3%
Dec-17	3	0.4%	0	0.0%	4	2.7%	1	4.8%
Nov-17	15	1.9%	1	1.5%	3	1.9%	1	5.0%
Oct-17	4	0.5%	0	0.0%	3	2.1%	0	0.0%
Sep-17	6	0.7%	0	0.0%	3	2.4%	0	0.0%
Aug-17	8	0.9%	1	1.7%	6	4.3%	0	0.0%
Jul-17	9	1.2%	7	11.3%	5	3.9%	1	4.0%
Jun-17	13	1.6%	2	2.2%	3	3.7%	0	0.0%
May-17	11	1.4%	3	5.0%	3	3.1%	1	5.6%
Apr-17	7	1.0%	2	3.0%	2	2.3%	0	0.0%
Mar-17	5	0.6%	0	0.0%	3	2.5%	2	8.7%
12 Mth Total	91		18		40		7	

12 Month Total Cost of Wastage Based on Standard Red Cell & Pooled Platelet Price for Hospitals using apheresis Platelets the actual cost may be higher if those units have been wasted.

	RBC	Platelets
Feb-18	£11,303.56	£7,172.48

VANESA Quarterly Red Cell – Top Level Report

NHS Blood and Transplant

Wastage Quartiles show spread of Wastage

Average Hospital Issue Data

Average Hospital Wastage Data

Specific Hospital Issue Data

Specific Hospital Wastage Data

Hospital Quarterly Red Cell Top Level Report (Financial Quarters) for 2017/18 Q2

Average NHSBT Hospital RBC Usage - Very High (NHSBT)		
Current Quarter	2017/18 Q2	% Annual Change
All Red Cells	3,657	-4.1%
O Neg Red Cells	497	-2.0%
% of O Neg RBC	13.6%	

Red Cell Report

Wastage Quartiles for RBC Wastage - Very High (NHSBT)			
2017/18 Q2	Green	Amber	Red
ABO Limits	<= 46	>46 <= 139	> 139
ABO WAPI	<= 1.54%	> 1.54% <= 3.70%	> 3.70%
O Neg Limits	<= 11	>11 <= 45	> 45
O Neg WAPI	<= 2.59%	>2.59% <= 9.18%	> 9.18%
Number of Hospitals	40	% Entering Wastage Data	80.0%

Average NHSBT Hospital RBC Wastage - Very High (NHSBT)			
Wastage Quarter	Wastage Reason	A, B & O	O Neg
2017/18 Q2	Timex	54	17
	OTCOL	28	8
	MISC	13	3
	FF	1	1
Current Quarter	Total Wastage	96	29

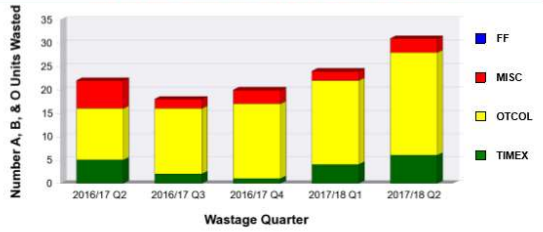
Only Wastage data entered before 14/11/2017 is included in report

Current Quarter	All Red Cell Groups	RBC % Annual Change	O Neg Red Cells	O Neg % Annual Change	% of O Neg RBC's Issued
2017/18 Q2	2,282	-13.1%	285	7.1%	12.5%

Wastage Quarter	Reason	ABO Waste	O Neg Waste	ABO WAPI	O Neg WAPI	Wastage Entries
2017/18 Q2	Timex	6	3	0.3%	1.1%	29
	OTCOL	22	4	1.0%	1.4%	
	MISC	3	1	0.1%	0.4%	
	FF	0	0	0.0%	0.0%	
Current Quarter	Total or Avg	31	8	1.4%	2.8%	29

Historical Hospital Red Cell NET Issue Data

Historical Hospital Red Cell Wastage Data



Data Supplied by the Blood Stocks Management Scheme

Blood Stock Management Scheme

VANESA Quarterly Red Cell – Wastage Report

NHS Blood and Transplant

Hospital Quarterly Red Cell Wastage Report (Financial Quarters) for 2017/18 Q2

Peer Group :- Red Cell Usage - Very High

Number of Hospitals	Number Entering Wastage	% Entering Wastage Data
40	38	95.0%

Wastage Quarter	Wastage Reason	Total A B & O Wastage	Average A B & O Wastage	Total O Neg Wastage	Average O Neg Wastage
2017/18 Q2	TIMEX	2,047	54	655	17
	OTCOL	1,070	28	286	8
	MISC	497	13	125	3
	FF	49	1	23	1
Total or	Average Wastage	3,663	96	1,089	29

NHSBT :- Served Hospitals

Number of Hospitals	Number Entering Wastage	% Entering Wastage Data
254	212	83.5%

Wastage Quarter	Wastage Reason	Total A B & O Wastage	% Change from 2016/17 Q2	O Neg Wastage	% Change from 2016/17 Q2
2017/18 Q2	TIMEX	5,371	4.7%	1,655	5.2%
	OTCOL	2,038	-16.7%	499	-23.9%
	MISC	874	11.8%	229	46.8%
	FF	60	-74.7%	32	-64.0%
Current Quarter	Total Wastage	8,343	-3.0%	2,415	-2.4%

Only Wastage Data entered before 14/11/2017 is included in Report

Wastage Quarter	Wastage Reason	Total A B & O Wastage	O Neg Wastage	Wastage Entries	A B & O WAPI
2017/18 Q2	TIMEX	6	3	29	0.3%
	OTCOL	22	4		1.0%
	MISC	3	1		0.1%
	FF	0	0		0.0%
Current Quarter	Total Wastage	31	8	29	1.4%

Historical Hospital Wastage

2016/17 Q2	2016/17 Q3	2016/17 Q4	2017/18 Q1	2017/18 Q2
14	19	13	22	29

Hospital Wastage Entries made per Quarter

Data Supplied by the Blood Stocks Management Scheme

al Issues

Wastag e

Hospital Informat

c Hospit al

Graph wastage as units

Blood Stock Management Scheme

VANESA

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- A data system where Hospitals usage & wastage data is entered and where data, reports and charts can then be viewed
- Wastage data must be entered by Hospitals
- Hospitals can generate reports & graphs and interrogate data
- Detailed breakdown on data including benchmarking features and reasons for wastage
- Can be used to help determine optimum stock levels

All reports use VANESA data so it is important to complete this or you will have inaccurate reports of wastage

Reports – what to look for in all that data.

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- Look for unusual events – what happened to account for this?
  - Trauma
  - Holiday
  - Fridge failure
  - Over ordering
  - Staff shortage
- How & why did this effect it?
- How can you prevent or modify this in future?

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- Looks for trends – consider;
  - Has activity changed?
  - Does stock need to be reviewed?
  - Is wastage from a certain area?
  - Timex – is stock too high? Over ordered?
  - OTCOL – is there a particular area regularly involved
  - Emergency stock – does this need rotating more often
  - Platelets – are these ordered then not used?

  (Does anyone chase these to try and reallocate?)

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The bigger picture – Understand what influences your stock level?

- Demand;
  - *How many*
  - *What groups*
  - *Does activity differ by day / season*
  - *Speciality demand i.e Haematology / trauma*
- Logistics – Delivery time, how many deliveries, distance from centre.
- What should be your optimum stock levels
- How do you identify these

VANESA for monitoring stock

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- **Issuable Stock** - the number of unreserved ADULT units available for cross matching. (This is entered by the laboratory)
- **Ideal Stock** - A Hospitals ideal stock level. (This is set by the Hospital & can be amended)
- **Nominal Stock** - Calculated by BSMS. How much of each group you use a day. The figure is calculated over a rolling 12 month period and includes any units that are wasted.

By looking at the number of days stock and units held on VANESA you will be able to review your current stock levels to see if they are optimum

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VANESA – Nominal Stock

Select the date you wish to enter data for

17-01-2018

Stock Available

Used in a day (including wastage)

Show Yearly Calendar

Blood Group	Ideal stock	Issuable stock	Nominal stock	Issuable Stock Index
O Pos	60	27	9.28	2.91
O Neg	12	13	3.21	4.05
A Pos	60	36	8.06	4.47
A Neg	12	14	1.72	8.13
B Pos	10	12	2.27	5.29
B Neg	6	10	0.4	25.07
AB Pos	4	4	0.51	7.87
AB Neg	4	3	0.23	13.07

How long that stock will last

Note A Pos ISI similar to O Neg ISI

Enter a comment

Hospital Red Cell Usage Very High – Adult Major Trauma Centre

Blood Stock Management Scheme

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What Can you do to make a difference?

Lots!!

Hands on – The every day things that make the difference

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Key ways to optimise stock management and reduce component wastage;

- Strict rotation of stock
- Appropriate prompt de-reservation times
- Be pro-active - chase requests where possible for platelets and short expiry
- Good rotation of emergency & satellite blood stock
- Promoting single unit practice where appropriate

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- Regular review of component data and optimum stock levels
- Wastage champions / dedicated staff
- Wastage campaigns – utilise posters & resources, get competitive, display & share wastage data internally
- Lab empowerment and challenging poor practice
- Audit and review of wasted units – understand where the problem is
- Audit and review use of satellite fridges
- Cross charging of waste

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- Always check stock levels (including stock out in fridges before re-ordering)
- Consider a stock share agreement for short dated units if appropriate
- Optimal use of electronic issue to avoid reserved blood where not necessary
- Education - target areas with specific issues
- Good system for utilising short dated units – use of white boards?

Share the success – shout about what you are doing well! Internally & externally

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Resources to help you

Blood Stocks Management scheme

http://www.bloodstocks.co.uk/

- Resources, publications and guides
- Link to VANESA

Hospitals & Science website – platelet resources

http://hospital.blood.co.uk/patient-services/patient-blood-management/platelet-resources/

- Resources to support appropriate platelet stock management

Hospitals & Science website O neg Toolkit

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http://hospital.blood.co.uk/patient-services/patient-blood-management/o-d-negative-red-cell-toolkit/

- BSMS - Using the Issuable stock index to help you reduce wastage
- O neg toolkit & Infographics
- London RTC use and monitoring of O neg stock
- Examples of sharing good practice section
- Findings of Audits and surveys
- NBTC recommendations on the appropriate use of O neg red cells

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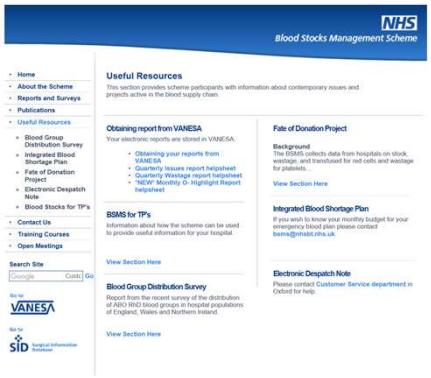

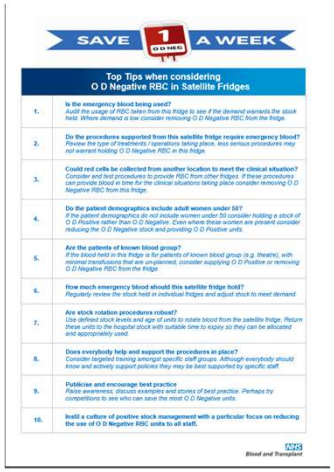

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East of England Regional Transfusion Committee

GROUP O Rh D NEGATIVE RED CELLS
Top Tips to reduce usage and wastage

1	Transfuse Group O Rh D positive red cells to male patients, and female patients over 60, of unknown blood group in emergency scenarios.
2	In an emergency situation, move to group specific RBC as soon as a second test for ABO compatibility has been performed. If necessary review processes to ensure timely release of group specific RBC. Retrieve unused Group O RhD negative red cells from the clinical area following release of group specific blood.
3	Review incidents of Group O RhD negative use in emergency situations and investigate incidents when it's use, or continued use, was inappropriate.
4	To reduce wastage due to time expiry, raise staff awareness to ensure RBCs selected are appropriate to the request (e.g. use short dated RBC for immediate issue.)
5	If Group O RhD negative RBC units are frequently given to non O RhD negative patients to avoid time expiry, consider reducing Group O RhD negative stock. The stated target is for no more than 10.5% of total RBC stock holding to be Group O RhD negative.
6	Empower laboratory staff to query inappropriate requests. Refer to Consultant Haematologist if necessary. In non bleeding patients, transfuse a single unit before conducting clinical review and haemoglobin check.
7	Form a review body (or use your HTT) to regularly monitor clinical activity, usage and stock holding. Investigate wastage including reason and responsibility (e.g. lab or clinical area).
8	Instil a culture of positive stock management to all staff, including out of hours and locum staff, and encourage them to not over order. Delegate responsibility for daily stock rotation and restocking in the blood bank to named members of staff or use a daily checklist.
9	Rotate emergency and satellite fridge Group O RhD negative RBC through main stock on a regular basis (at least weekly). Reduce stock of emergency O RhD negative RBC in satellite fridges to no more than 2 units.
10	Risk assess the clinical activities served by satellite fridges, together with the distance from the laboratory, to determine if there is a need for Group O RhD negative units to be stored there.

Compiled by the East of England Transfusion Advice and Discussion Group

London Regional Transfusion Committee NHS

London Platelet Action Group

Top Tips to reduce platelet usage and wastage

1.	**Should your hospital stock platelets?** *The BSMS has produced a tool which may help you decide if that is appropriate or not.* http://www.bloodstocks.co.uk/pdf/PlateletStockholdingAlgorithm.pdf
2.	**Could your hospital share platelets with another local hospital?** *Some smaller hospitals successfully share with larger hospitals and some Trusts rotate platelet stocks between their hospitals to reduce wastage.*
3.	**Could your hospital introduce a locally defined and agreed dereservation period for platelets allocated to a named patient?** *Hospitals where platelets are ordered to cover specific transfusion events have successfully altered clinical practice so platelets are returned to stock after a short period (4-12 hours) if they have not been transfused.*
4.	**Consider swapping long-dated platelets for short-dated ones** *If you know a patient is going to be transfused, give them the shortest dated platelets.*
5.	**Consider using different ABO group platelets in adults who are bleeding** *Although when used prophylactically ABO matched platelets survive longer, in the bleeding patient a different ABO group will be just as effective at stopping the bleeding.*
6.	**Consider using RhD positive platelets in adult males who are bleeding** *Give RhD negative platelets for RhD negative patients where anti-D would be a problem but in adult males who are actively bleeding, use RhD positive platelets if you have them available*
7.	**Introduce the National Blood Transfusion Committee Indication Codes for platelets so that any requests outside the accepted criteria can be reviewed if appropriate** *This could be done to empower the BMS staff or used as a way of deciding when to get the haematology medical staff to intervene.*
8.	**Double-dose platelets are not necessary in most prophylactic situations – 'why use two when one will do?'** *The PLADO clinical trial (N Engl J Med 2010; 362:600-613) has shown that standard dose prophylactic platelets are just as effective as high dose prophylactic platelets.*
9.	**Review the timeliness of platelet counts or other tests used to inform the decision to prescribe platelets.** *Often platelet orders are made in anticipation of a low platelet count and sometimes platelets are transfused before the count is available. Where possible use of point of care testing and rapid turnaround of laboratory tests to support active clinical decision making.*
10.	**Work at it – share practice with colleagues in other hospitals – and celebrate success!**

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How can a small change can make a difference?

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Using the new BSMS categories, the average annual platelet waste for 2016-17 for all high to very high platelet users was **88** units per Trust.

At a cost of £193 per ATD, this equals about **£17,000** – or the cost of an annual salary of a Band 3 ***who could do your BSMS entries and manage your platelet stocks!***

NHS
Blood and Transplant

If we look at just very high users, the average annual wasted platelet units per Trust was **135**. This translates to the salary of a ***Band 6 scientist!***

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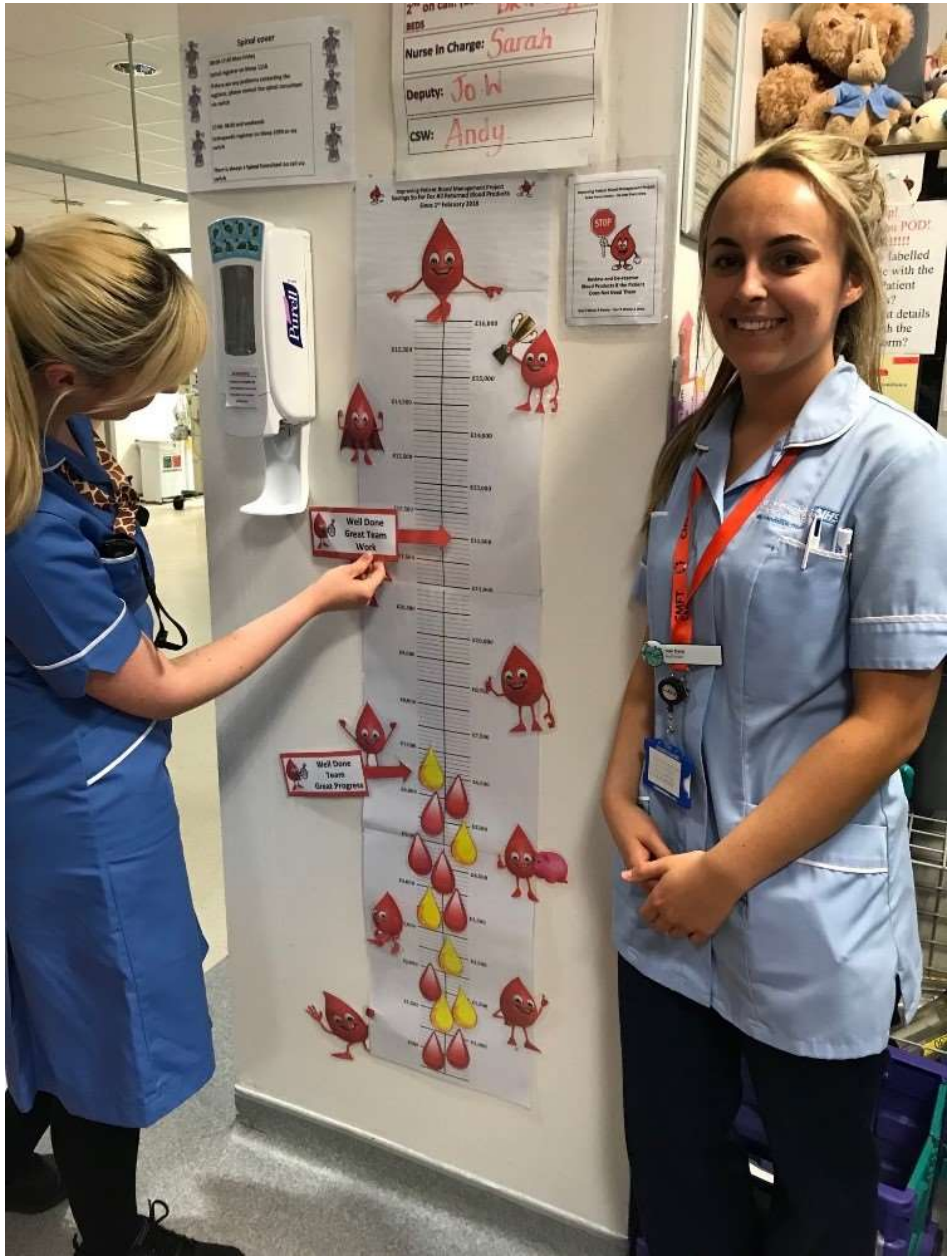

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Key messages

Be alert to component management

Use data to monitor usage, wastage & stock

Rotate & Review

Share bright ideas & good practice

Champion Challenge – What can you do?

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Be our Champion

- Go back & take a fresh look at your lab
- Introduce 1 change to improve component wastage *(however small)*
- Share what changes you have made & what impact they have had