LoPAG
Platelets in London

Rachel Moss

May 2013

London Platelet Action Group


Platelets in London are harder to get than a table at The Ivy!

In the beginning we had graphs and the Blood Stocks Management Scheme data

NHS
Blood Stocks Management Scheme

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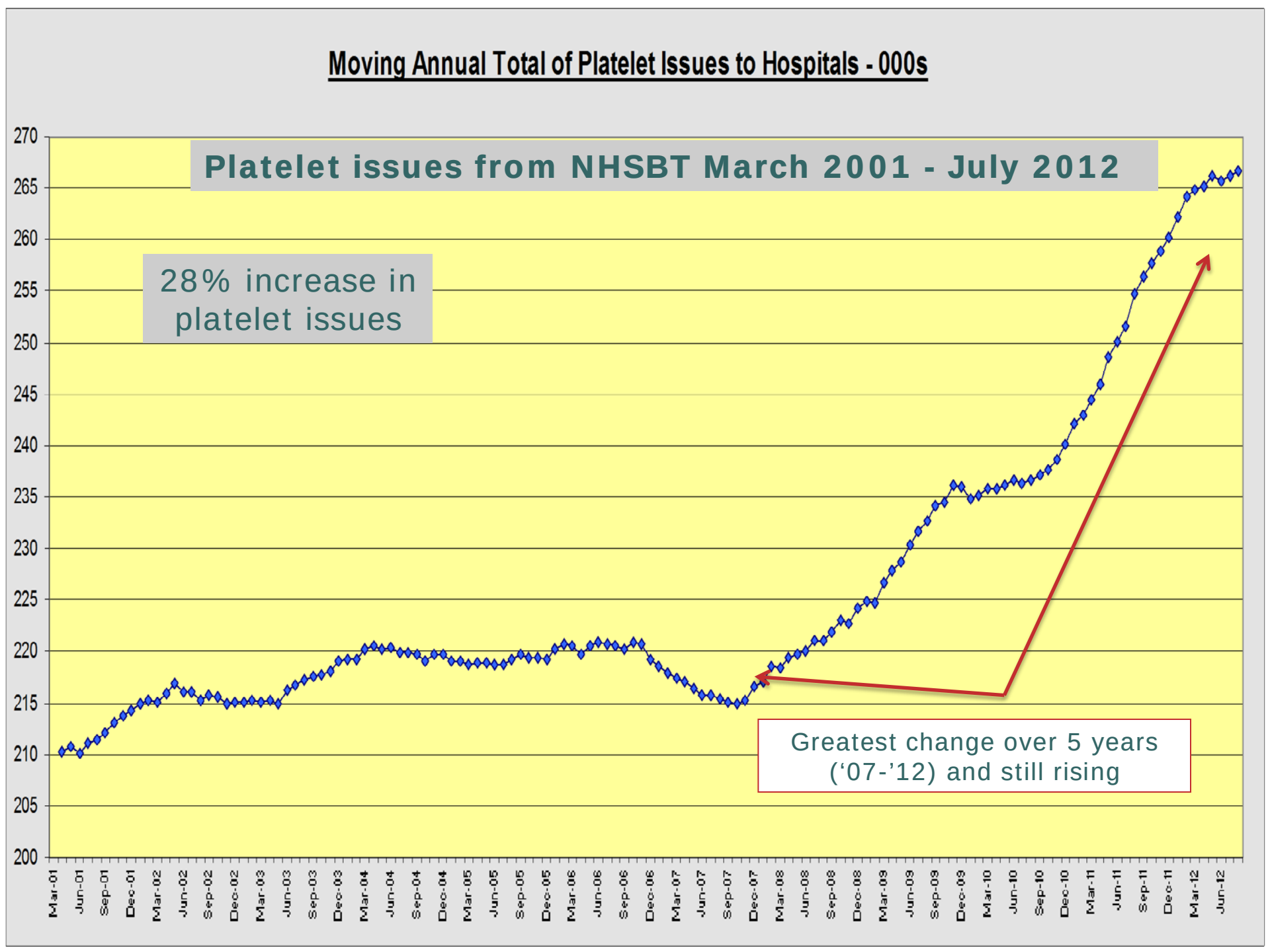
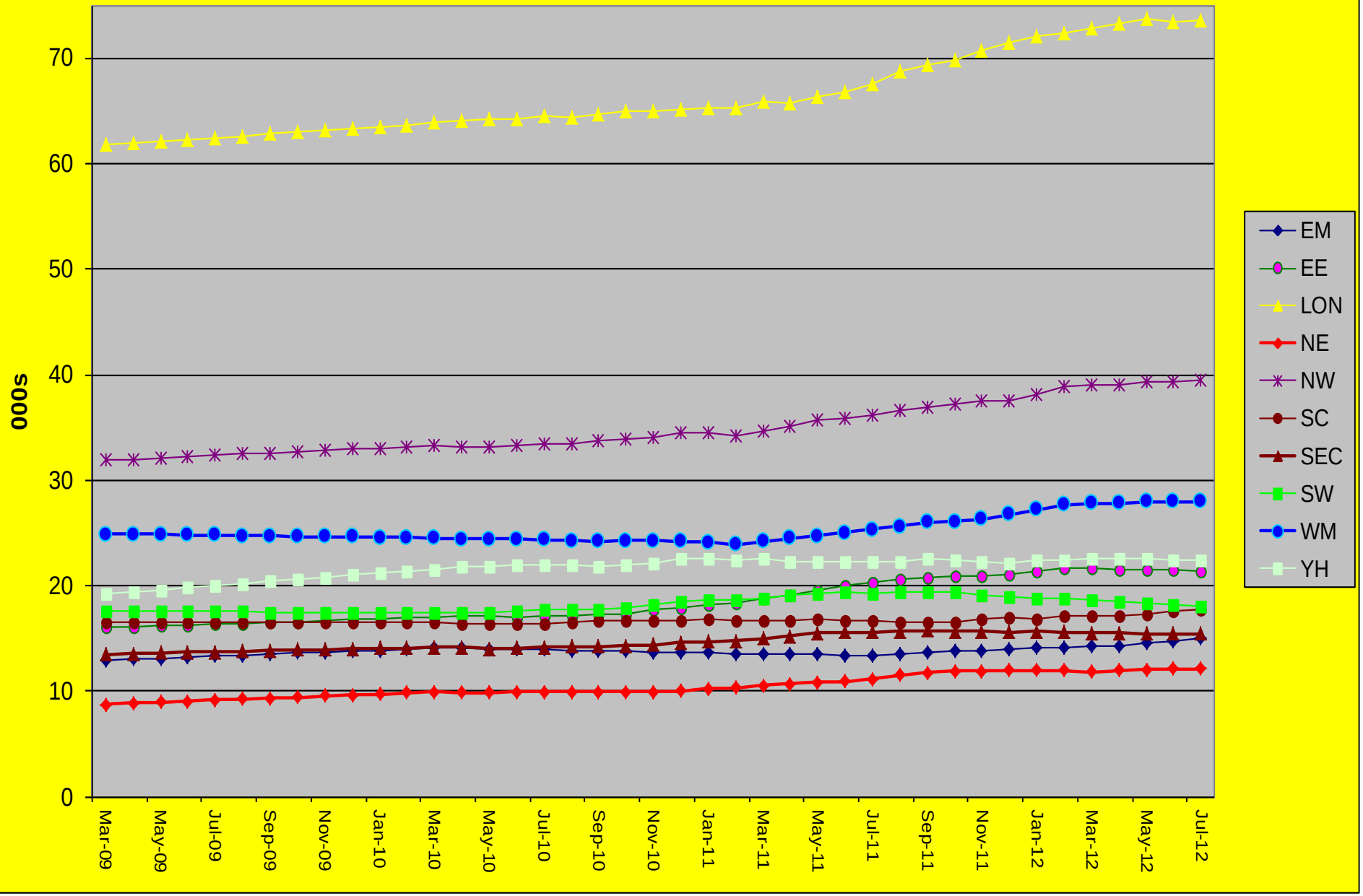
Moving Annual Total of Platelet Issues to Hospitals - 000s



Platelets RTC



RTC Quarterly Hospital RBC/PLT Issue Report

London RTC — Regional Blood Group Distribution Data **

O Pos	O Neg	A Pos	A Neg	B Pos	B Neg	AB Pos	AB Neg
39.0%	5.9%	30.5%	5.1%	13.5%	1.6%	3.9%	0.5%

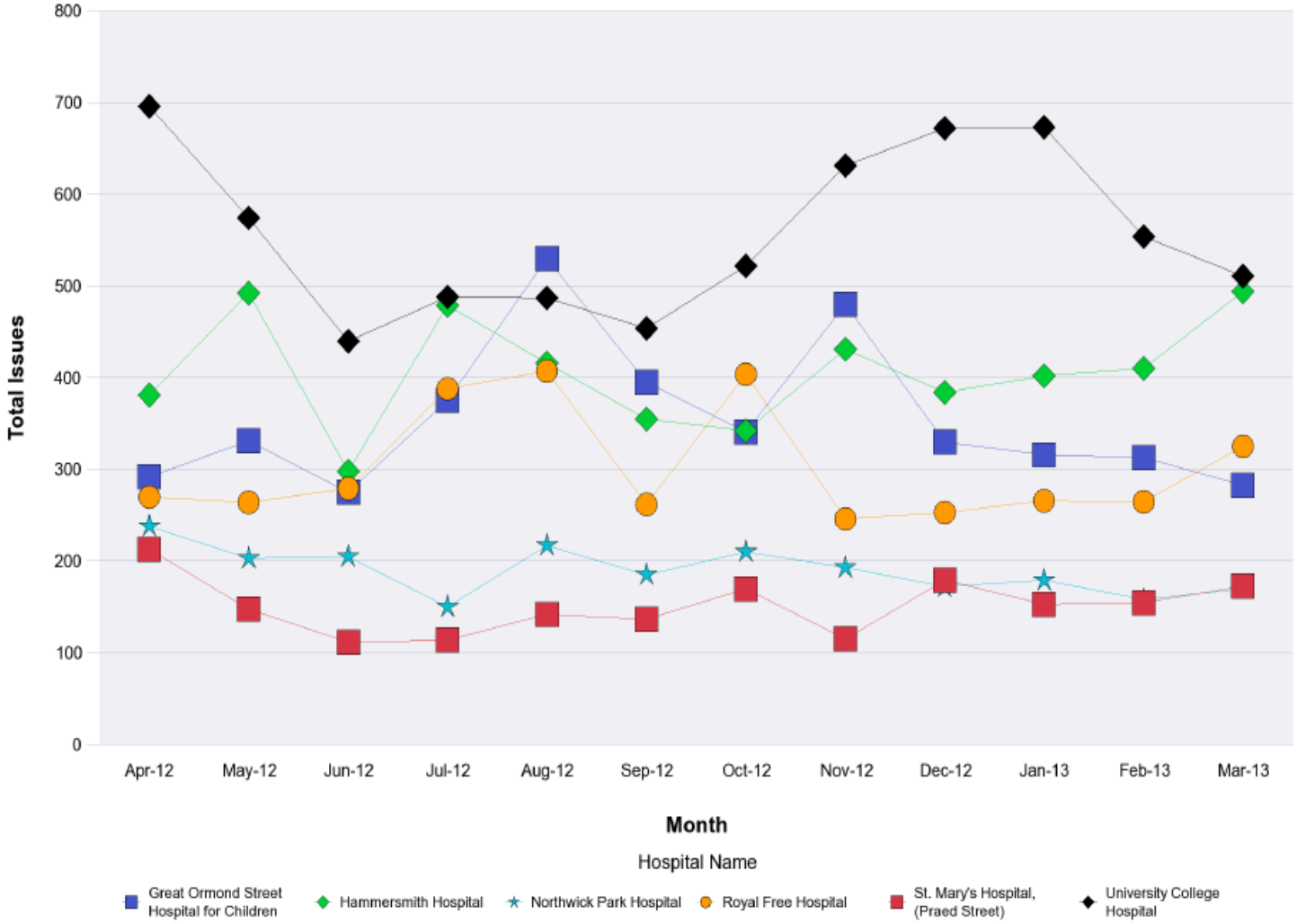
Issues from NHSBT for :- 2012/13 Q3

Hospital Details	Red Cell Issues from NHSBT Centres										RBC Stock Move		Issues	PLT Stock Move	
Hospital Name	O Pos	O Neg	A Pos	A Neg	B Pos	B Neg	AB Pos	AB Neg	All RBC's	% O Neg	Corrected	Total	All PLT's	Corrected	Total
HCA Laboratories	857	191	494	93	169	62	54	26	1,946	9.8%			492		
St. George's Hospital	1,920	488	1,492	270	479	181	115	34	4,979	9.8%			817		
Royal Marsden Hospital, Fulham Road	597	142	358	145	125	66	28	20	1,481	9.6%			324		
Newham University Hospital	396	108	239	91	205	65	33	0	1,137	9.5%			81		
Queen's Hospital (Romford)	965	298	1,093	312	326	92	62	32	3,180	9.4%			469		
Charing Cross Hospital	434	134	419	105	226	38	62	41	1,459	9.2%			134		
Ealing General Hospital	505	131	384	73	261	55	6	14	1,429	9.2%			70		
Princess Royal University Hospital,(Farnborough)	654	149	574	106	70	39	42	0	1,634	9.1%			189		
Kingston Hospital	914	202	794	133	78	33	39	25	2,218	9.1%			283		
King George Hospital	373	99	362	74	109	36	28	12	1,093	9.1%			53		
St. Bartholomew's Hospital	687	176	624	178	238	69	89	0	2,061	8.5%			1,142		
Chase Farm Hospital	412	105	369	82	126	38	40	59	1,231	8.5%			74		
Hammersmith Hospital	1,882	414	1,360	305	705	121	105	46	4,938	8.4%			1,157		
The London Clinic	358	87	323	88	134	34	49	16	1,089	8.0%			390		

Platelet Issues by Usage Category

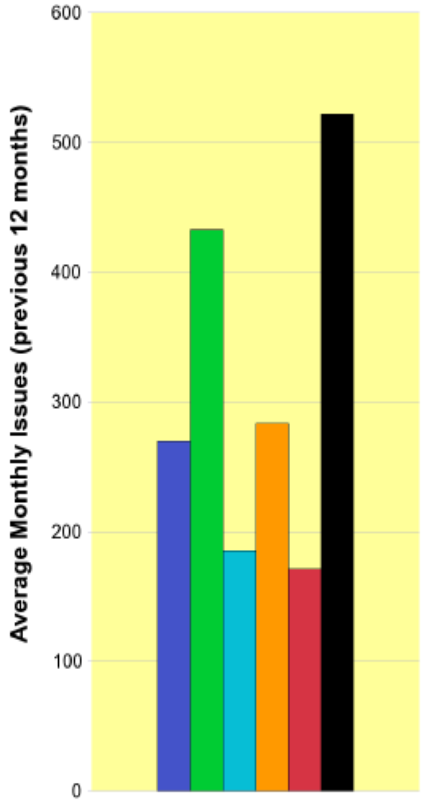
Platelet Usage - Very High

Monthly Issues last 12 months



(Apr 2011 to Mar 2012)

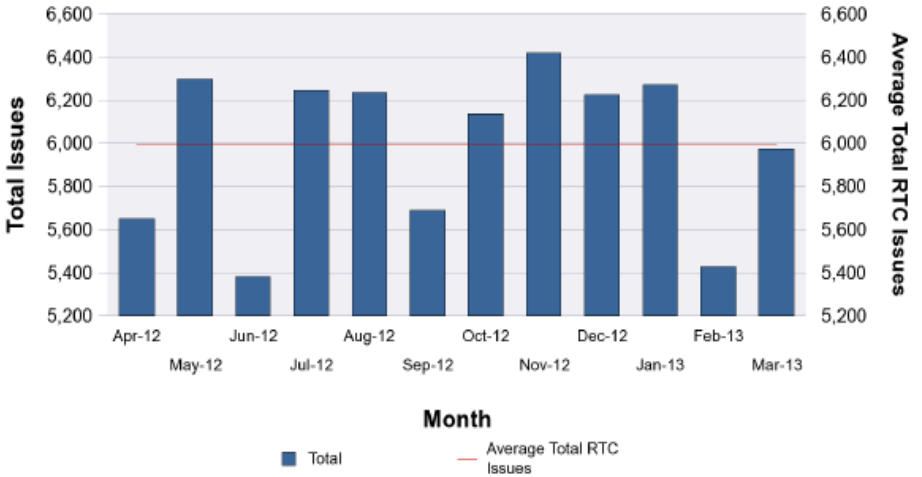
Average Monthly Issues

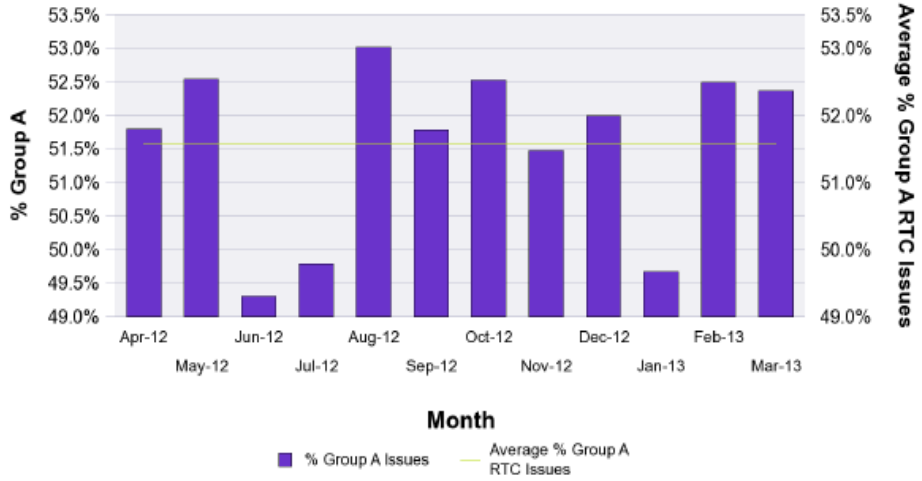


Data provided by the Blood Stocks Management Scheme - Tel 0114 358 4838 03/04/2013

Summary of Platelet Issues in London

Month	Group A total	Total Issues	% Group A Issues
Apr-12	2,926	5,649	51.8%
May-12	3,308	6,296	52.5%
Jun-12	2,653	5,381	49.3%
Jul-12	3,110	6,246	49.8%
Aug-12	3,305	6,234	53.0%
Sep-12	2,946	5,688	51.8%
Oct-12	3,222	6,134	52.5%
Nov-12	3,304	6,418	51.5%
Dec-12	3,237	6,225	52.0%
Jan-13	3,114	6,270	49.7%
Feb-13	2,848	5,426	52.5%
Mar-13	3,128	5,973	52.4%
Total:	37,101	71,940	
Average:		5,995	51.6%





Data provided by the Blood Stocks Management Scheme

03/04/2013

LoPAG had arrived

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LoPAG Proposal

- That all hospitals look at local laboratory and clinical practices that could help to reduce platelet usage by 10%
- If London RTC hospitals achieved this it would improve NHSBT stocks and hence availability
- It would have a huge impact nationally because London RTC hospitals use more than any other RTC
- Every hospital nominate a platelet champion to take the initiative forward

LoPAG Plan

- Email every RTC member and ask for a Platelet Champion from their transfusion team
- Set out 10 Top Tips
- Offer BSMS VANESA training if wanted
- The platelet champion would link in with LoPAG
- LoPAG hoped to learn of more good practice ideas to be shared amongst champions
- LoPAG to offer support and resources for transfusion teams if needed

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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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10 Top Tips

1. Should your hospital stock platelets?
2. Could your hospital share platelets with another local hospital?
3. Could your hospital introduce a locally defined and agreed dereservation period for platelets allocated to a named patient?
4. Consider swapping long-dated platelets for short-dated ones
5. Consider using different ABO group platelets in adults who are bleeding

10 Top Tips

6. Consider using RhD positive platelets in adult males who are bleeding
7. Introduce the National Blood Transfusion Committee Indication Codes for platelets so that any requests outside the accepted criteria can be reviewed if appropriate
8. Double-dose platelets are not indicated in most situations – ‘why use two when one will do?’
9. Review the timeliness of platelet counts or other tests used to inform the decision to prescribe platelets.
10. Work at it – share practice with colleagues in other hospitals – and celebrate success!

LoPAG Survey

- 6 months after Top Ten Tips sent out
- Survey sent to Platelet Champions
- Main premise asking if they do any of the suggested tips and if so how/why
- Results fed back to champions at Platelet Champions Day

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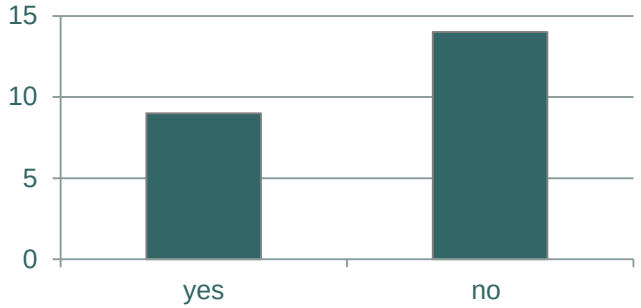
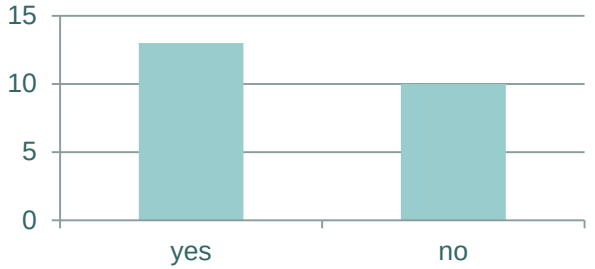
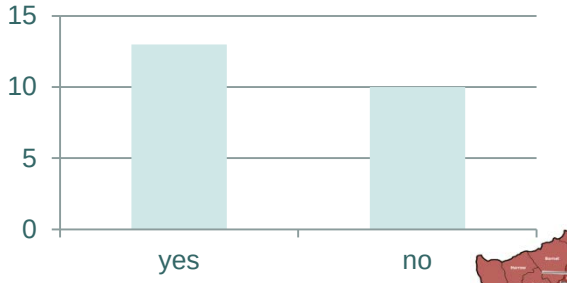
Does your hospital hold “stock” platelets?



Do you share platelets with other local hospitals?



Do you have a defined dereservation period for platelets allocated to a named patient?



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Do you have a defined dereservation period for platelets allocated to a named patient?

De-reservation period	
4 hours	2
12 hours	1
24 hours	3
48 hours	3
24-48 hours	1

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Champions Day – Nov 2012

09:30-10:00	Registration & coffee	All
10:00 – 12:30: the classroom sessions		
10:00 – 10:05	Welcome and introduction	Rachel Moss LoPAG Chair
10:05 – 10:45	Back to basics – what does a platelet actually do?	Andy Miller Senior Scientific Officer NHSBT
10:35 – 11:15	Platelets – it's the special treatment needed	Delordson Kallon NHSBT
11:15 - 11:45	TEG and Platelet mapping – how it works and how it reduces use	Oliver Pearson, Product Specialist , Haemonetics
11:45 - 12:30	LoPAG Survey results – what did we learn?	Carol Cantwell and LoPAG Steering group
12:30 – 13:30	Lunch	All
13:30 – 16:00: the interactive sessions		
13:30 – 14:30	Platelet Training Packs – developing a pack to take back to base	Workshop
14:30: 14:45	Comfort break	All
14:45 – 15:45	Indication Codes – do we use them and what do they bring to the decision to transfuse?	Workshop

Platelet Champions Tool Kit

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Back to basics – what does a platelet actually do?

- Uploaded to You Tube
- Title = **Platelets the basics**: given by Andy Miller London RTC

http://www.youtube.com/watch?v=PXj5Imd8avs

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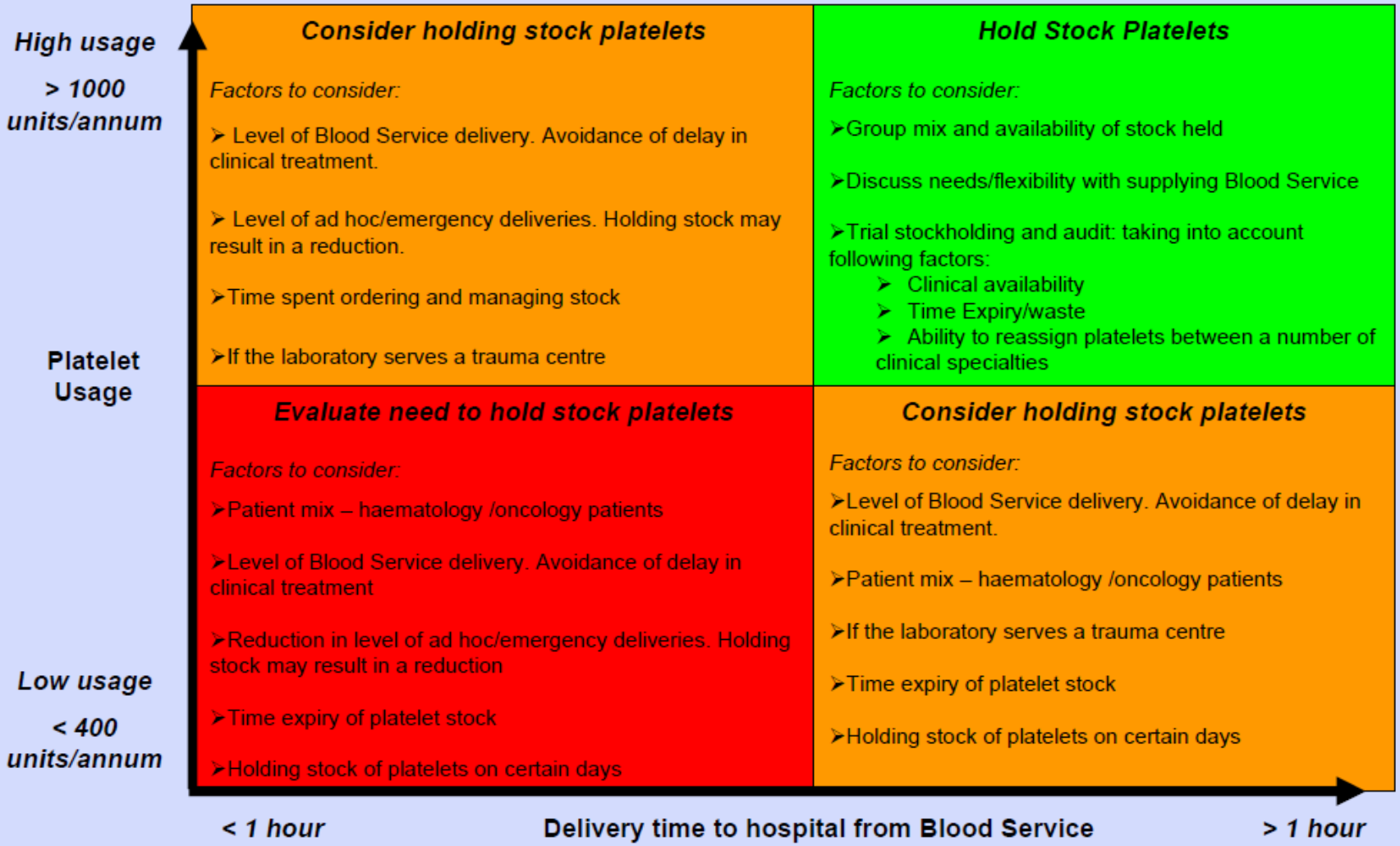
Algorithm to aid hospital decision making for holding stock platelets

The number of hospitals routinely holding a stock of platelets has increased from 10% in 2003 to 22% in 2009 (from 23 hospitals to 51 hospitals). There is anecdotal evidence that the number of hospitals holding stocks of platelets continues to increase.

The objective of the algorithm is to aid hospital decision making for holding platelet stock and has been collated using output from hospital participants at the BSMS regional meetings which took place in May 2011.



Indication Codes for Transfusion - An Audit Tool

NHS Blood and Transplant

Issued 06/09

The indications for transfusion provided below are taken from UK national guidelines for the use of blood components.
Each indication has been assigned a number, which may be used by clinicians when requesting blood or for documentation purposes. Specific details regarding the patient's diagnosis and any relevant procedures to be undertaken should also be provided.
These are current guidelines and may change depending on new evidence.

recently updated indication codes

Red cell concentrates

R1. ***Acute blood loss***

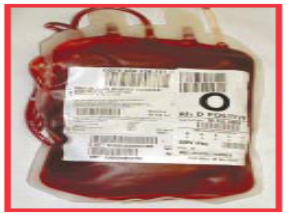
In patients with massive haemorrhage, the haemoglobin concentration (Hb) is a poor indicator of acute blood loss and empirical decisions about the immediate use of red cell transfusion are required by clinicians experienced in resuscitation. The following is a guide to the likelihood of the need for blood transfusion, although estimation of blood losses may be difficult:-

- <30% loss of blood volume (< 1500ml in an adult): transfuse crystalloids. Red cell transfusion is unlikely to be necessary.
- 30-40% loss of blood volume (1500-2000ml in an adult): rapid volume replacement is required with crystalloids. Red cell transfusion will probably be required to maintain recommended Hb levels.
- >40% loss of blood volume (>2000ml in an adult): rapid volume replacement including red cell transfusion is required.

When normovolaemia has been achieved/maintained, frequent measurement of Hb (for example, by near patient testing) can be used to guide the use of red cell transfusion. Where future blood loss is unpredictable (e.g. gastrointestinal haemorrhage), a Hb threshold of 10g/dl to guide transfusion is recommended; otherwise the objective is to maintain circulating blood volume and Hb >7 g/dl in otherwise fit patients, and >8g/dl in elderly patients and those with known cardiovascular disease.

Peri-operative transfusion

Many patients undergoing elective surgical operations will not require transfusion support if their Hb is normal before surgery. Assuming normovolaemia has been maintained, the Hb can be used to guide the use of red cell transfusion.



R2. Hb < 7g/dl.

R3. Hb < 8 g/dl in a patient with known cardiovascular disease, or those with significant risk factors for cardiovascular disease (e.g. elderly patients, and those with hypertension, diabetes mellitus, peripheral vascular disease).

Critical Care

R4. Transfuse to maintain the Hb >7g/dl, and >8g/dl in elderly patients and those with known cardiovascular disease.

Post-chemotherapy

R5. There is no evidence-base to guide practice. Most hospitals use a transfusion threshold of a Hb of 8 or 9g/dl.

Radiotherapy

R6. There is little evidence-base to guide practice. Suggest transfuse to maintain the Hb >10g/dl.

Chronic anaemia

R7. Transfuse to maintain the haemoglobin concentration to prevent symptoms of anaemia. Many patients with chronic anaemia may be asymptomatic with a Hb >8g/dl.

Fresh frozen plasma

(Dose - 12-15 ml/kg body weight equivalent to 4 units for an adult)

F1. Replacement of single coagulation factor deficiencies, where a specific or combined factor concentrate is unavailable e.g. factor V.

F2. Immediate reversal of warfarin effect, in the presence of life-threatening bleeding. FFP only has a partial effect and is not the optimal treatment; prothrombin complex concentrates are preferred.

F3. Acute disseminated intravascular coagulation (DIC) in the presence of bleeding and abnormal coagulation results.

F4. Thrombotic thrombocytopenic purpura (TTP), usually in conjunction with plasma exchange.

F5. Massive transfusion; local protocols for serious bleeding should be followed and may recommend empirical use of FFP and a specific ratio of FFP to red cells.

F6. Liver disease; patients with a PT within 4 seconds of the control value are unlikely to benefit from the use of FFP.

Cryoprecipitate

Dose - 2 pooled packs, equivalent to 10 single units, for an adult).

Cryoprecipitate should be used in combination with FFP unless there is an isolated deficiency of fibrinogen.

C1. Acute disseminated intravascular coagulation (DIC), where there is bleeding and a fibrinogen level <1g/l.

C2. Advanced liver disease, to correct bleeding or as prophylaxis before surgery, when the fibrinogen level <1g/l.

C3. Bleeding associated with thrombolytic therapy causing hypofibrinogenaemia.

C4. Hypofibrinogenaemia (fibrinogen level <1g/l) secondary to massive transfusion.

C5. Renal failure or liver failure associated with abnormal bleeding where DDAVP is contraindicated or ineffective.

C6. Inherited hypofibrinogenaemia, where fibrinogen concentrate is not readily available.

Platelet concentrates

(Dose - 15 ml/kg body weight for children <20kg; 1 adult therapeutic dose for adults and older children)

Bone marrow failure

P1. To prevent spontaneous bleeding when the platelet count <10 x 10^9/l.

P2. To prevent spontaneous bleeding when the platelet count <20 x 10^9/l in the presence of additional risk factors for bleeding such as sepsis or haemostatic abnormalities.

P3. To prevent bleeding associated with invasive procedures. The platelet count should be raised to >50 x 10^9/l before lumbar puncture, epidural anaesthesia, insertion of intravascular lines, transbronchial and liver biopsy, and laparotomy, and to >100 x 10^9/L before surgery in critical sites such as the brain or the eyes.

Critical care/surgery

P4. Massive blood transfusion. The platelet count can be anticipated to be <50 x 10^9/l after 2 x blood volume replacement. Aim to maintain platelet count >75 x 10^9/l, which allows a margin of safety to ensure platelet count >50 x 10^9/l. Keep the platelet count >100 x 10^9/l if multiple, eye or CNS trauma.

P5. Bleeding, not surgically correctable, and with associated acquired platelet dysfunction e.g. post-cardiopulmonary bypass, possibly combined with the use of potent anti-platelet agents such as clopidigrel.

P6. Acute disseminated intravascular coagulation (DIC) in the presence of bleeding and severe thrombocytopenia.

P7. Inherited platelet dysfunction disorders e.g. Glanzmanns thrombasthenia with bleeding or as prophylaxis before surgery.

Immune thrombocytopenia

P8. Autoimmune thrombocytopenia, in the presence of major haemorrhage.

P9. Post-transfusion purpura, in the presence of major haemorrhage.

P10. Neonatal alloimmune thrombocytopenia, to treat bleeding or as prophylaxis to maintain the platelet count >50 x 10^9/l.

References

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09/10 227

Platelet App

Prescribing Platelets?

NHS Blood and Transplant

The New Platelet Transfusion Mobile Site
is designed to give quick easy access to the national guidelines on platelet transfusion and is specifically designed for smartphones and tablets so you have access wherever you need it.

This site works like an app and allows clinicians to check platelet guidelines and thresholds for transfusion at the bedside.

Features include:

- Platelet transfusion thresholds prior to common procedures
- Reasons why prophylactic threshold can be increased
- Contraindications to platelet transfusions
- A paediatric dose calculator.

Your feedback is welcome - email: *NHSBT.CustomerService@nhsbt.nhs.uk*

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Double Dose Platelets

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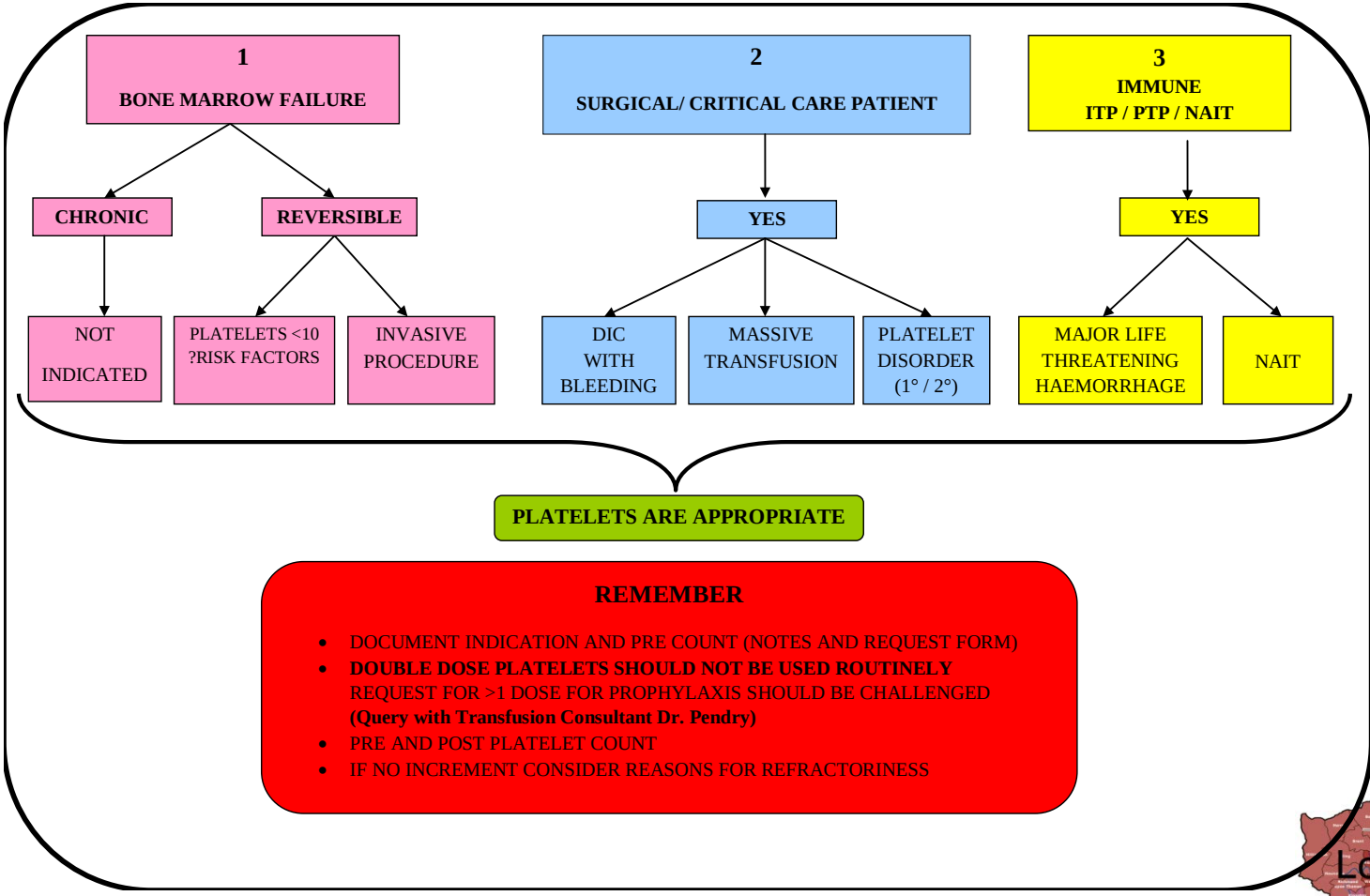
Manchester Platelet Decision Chart



Thanks to Dr Kate Pendry & team

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NEONATES AND CHILDREN

		Keep Platelets above
ROUTINE PROPHYLAXIS FOR NEONATES	STABLE PRE-TERM TERM INFANT	**>20**
	SICK PRE-TERM / TERM INFANT	**>30**
	NAIT (NEONATAL ALLOIMMUNE THROMBOCYTOPENIA)	**>30**
PROPHYLACTIC USE FOR CHILDREN WITH RISK FACTORS	SEVERE MUCOSITIS, LOCAL TUMOUR INFILTRATION	
	PLATELET COUNT LIKELY TO FALL TO < 10, ANTICOAGULATION THERAPY	**>20**
	SEVERE HYPERLEUCOCYTOSIS OR DIC WITH INDUCTION THERAPY	**>40**
	DIC (DISSEMINATED INTRAVASCULAR COAGULATION)	**>20**
PROPHYLACTIC PROCEDURE	ECMO	**>100**
	LUMBAR PUNCTURE	**>40**

ADULTS

		Keep Platelets above
CHRONIC BONE MARROW FAILURE		**NOT INDICATED**
REVERSIBLE BONE MARROW		**>10**
INVASIVE PROCEDURES	LP / CVL INSERTION / TRANSBRONCHIAL / LIVER BIOPSY / LAPAROTOMY	**>50**
	EPIDURAL	**>80**
	EYE / CNS SURGERY	**>100**
MASSIVE TRANSFUSION	NO COMPLICATION	**>75**
	WITH HEAD INJURY / COMPLEX TRAUMA	**>100**
DIC	WITH BLEEDING	**>75**
PLATELET DISORDER	INHERITED	
	ANTI-PLATELET AGENTS (ASPIRIN / CLOPIDOGREL),	
	CARDIOPULMONARY BYPASS, OTHER ACQUIRED PLATELET DEFECT	

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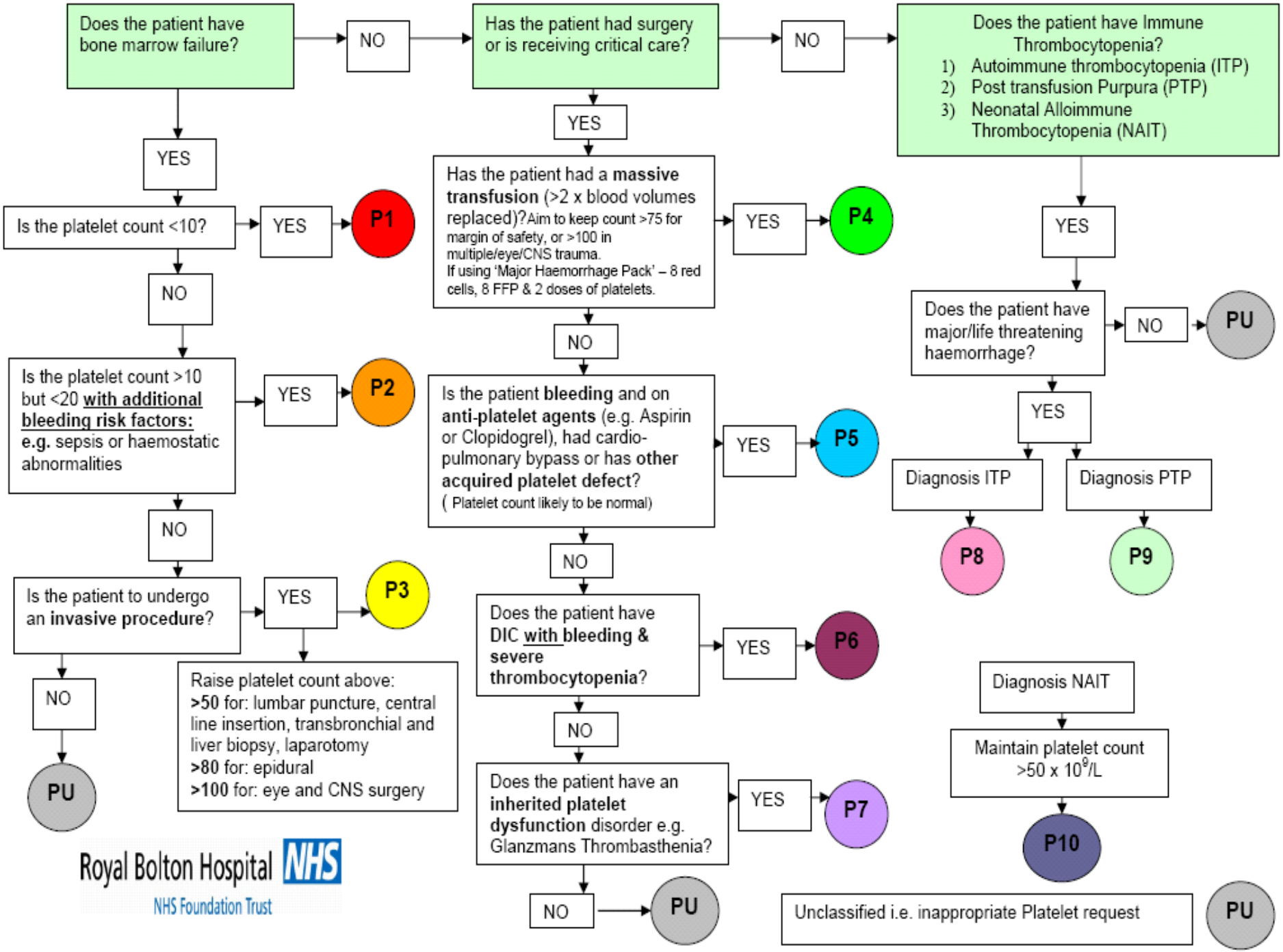

Royal Bolton Hospital NHS
NHS Foundation Trust

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Achieved

- Working group of RTC
- Top 10 tips
- Resources available
- Top 10 tips survey results
- Champions Day
- Talk on You Tube
- LoPAG talks – TP day, SNBTS
- HoT SIG May 2013

Future Plans

- Platelet education pack
- Summer Champions newsletter
- LoPAG Day for SpRs
- Repeat Champions Survey and day 2014

Acknowledgements

- LoPAG members
- Dr Kate Pendry
- Andy Miller
- BSMS Steering Group
- Platelet Champions

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