

# Blood Supply and Wastage

Rhian Edwards NHSBT

Lab Matters, Oake manor, 18<sup>th</sup> May 2016

# Blood supply

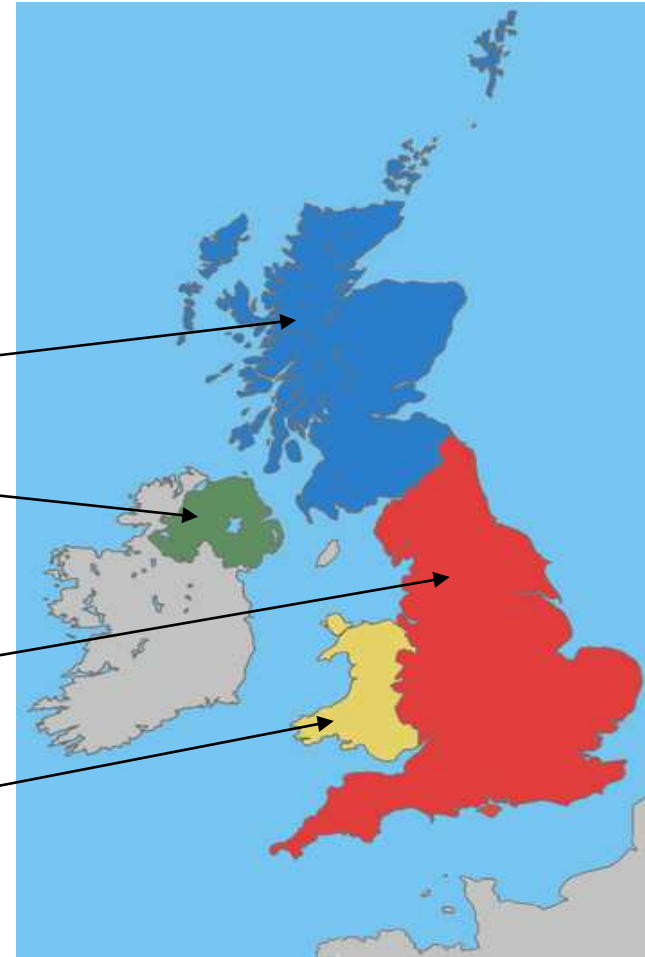
- UK supplied by 4 blood services:

SNBTS

NIBTS

NHSBT

WBS



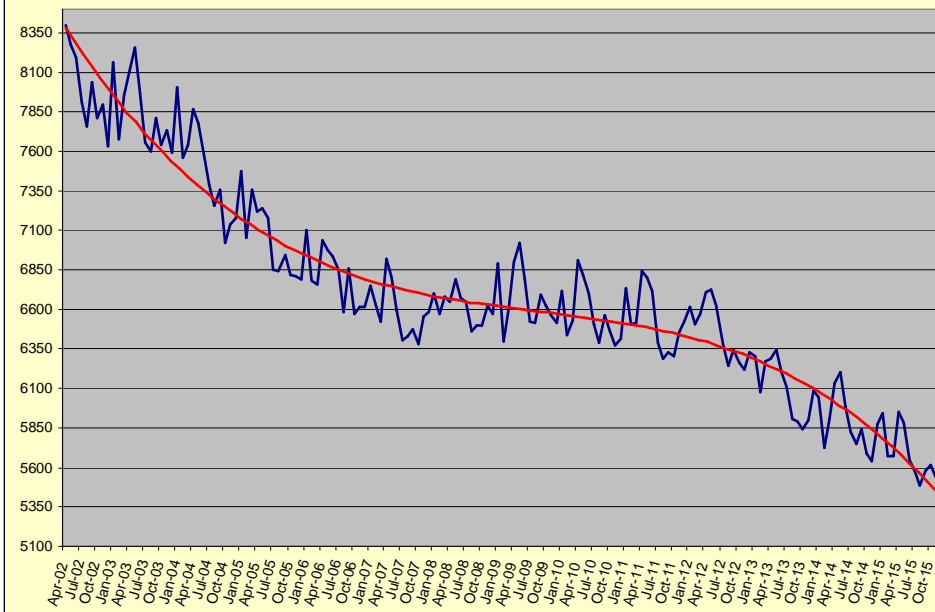
[http://commons.wikimedia.org/wiki/File:Uk\\_map\\_home\\_nations.png](http://commons.wikimedia.org/wiki/File:Uk_map_home_nations.png)

# Blood supply

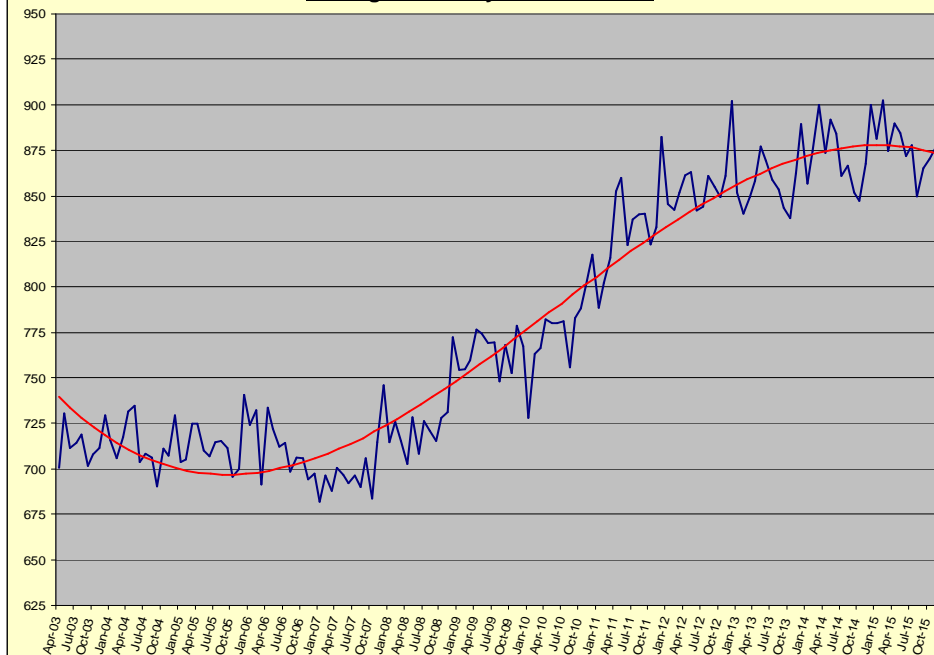
- NHSBT supply England
- and MOD
- YTD 2015/16 NHSBT issued to hospitals: (1000's)

1594	units Red Cells	SW 107
271	units Platelets	SW 15
203	units FFP	SW 11
33	units Cryoprecipitate (pooled)	SW 1

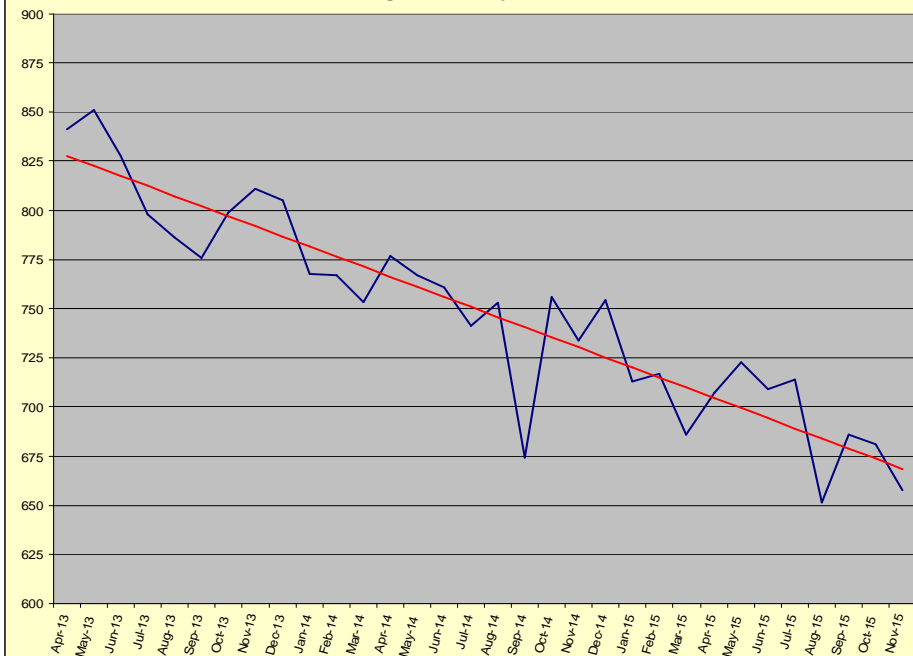
**Average Weekday Red Cell Issues**



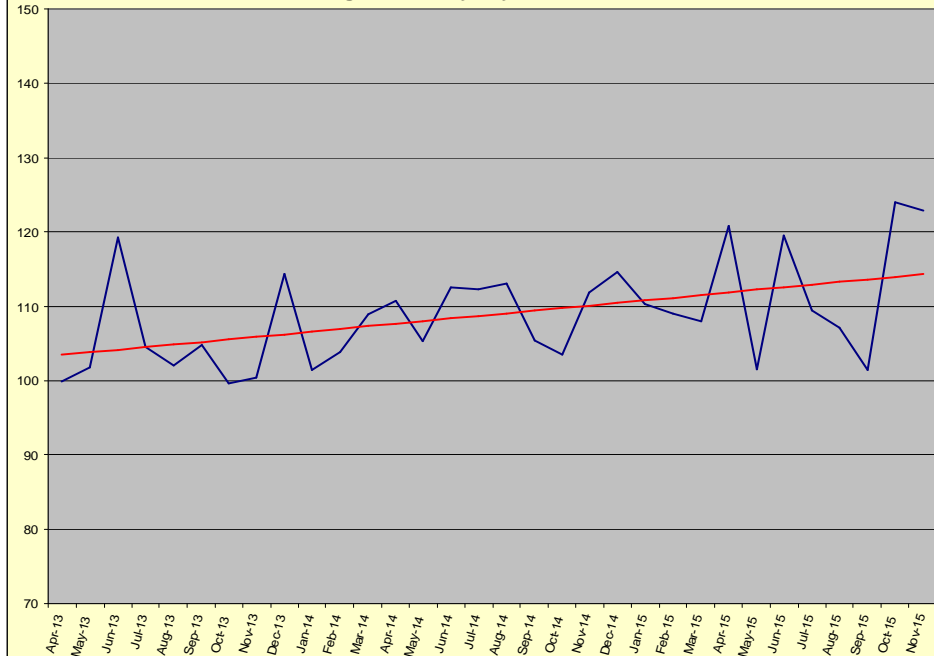
**Average Weekday Platelet Issues**



**Average Weekday FFP Issues**



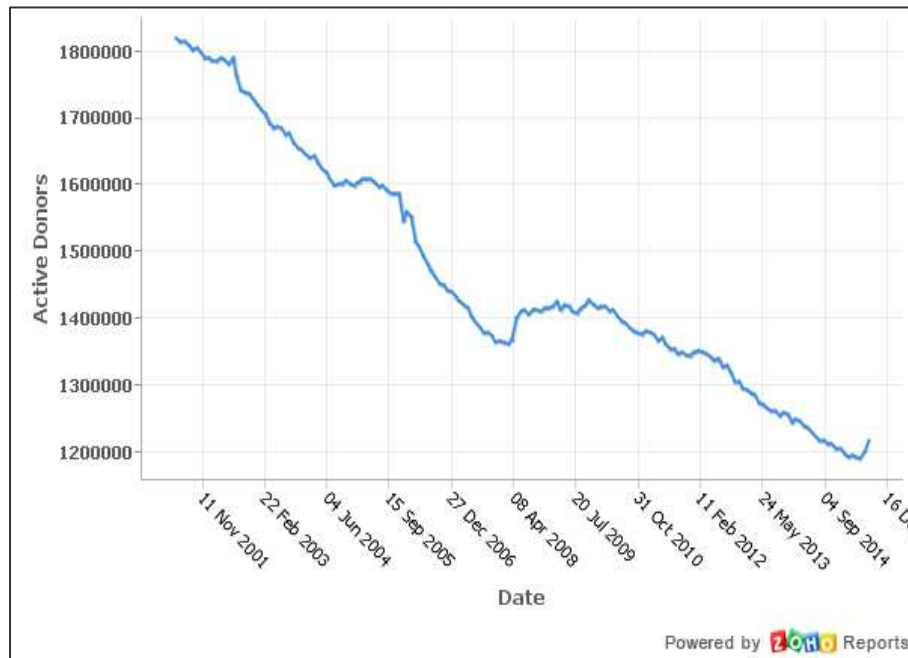
**Average Weekday Cryo Pooled Issues**



# Donating population

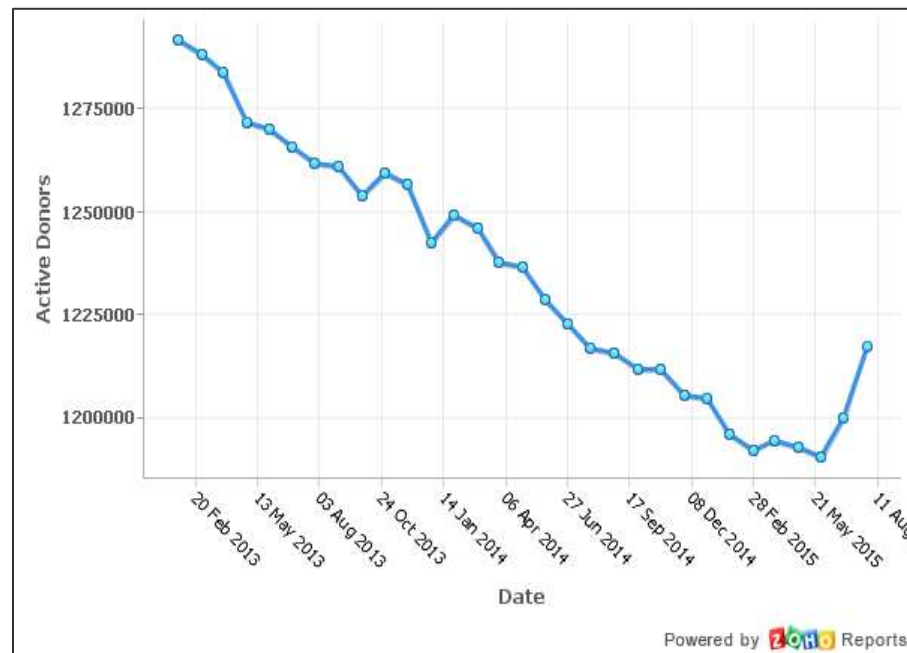
[www.bbc.co.uk](http://www.bbc.co.uk)

Long Term Trend in Number of Active Donors:



Only 4% of adults are currently blood donors ([www.blood.co.uk](http://www.blood.co.uk))

Recent Trend in Number of Active Donors:



# Donor selection and care

Guidelines for the Blood Transfusion Services in the UK (8th Edition):

\* Donor Selection:

> age, weight, Hb, medical history, sex, life style, recent travel

\* Microbiology testing:

> mandatory (HIV, HepB, HepC, Syphilis, HTLV)

> discretionary (Malaria, HepB core, T-Cruzi, West Nile Virus, HEV)

> bacterial monitoring of platelets

\* Minimise bacterial/viral contamination:

> B: arm cleansing, diversion pouch, closed collection system

> V: universal leucodepletion, irradiation

# Donor selection and care

- ♥ Blood Safety and Quality Regulations (BSQR) [2005]
- ♥ Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO) recommendations
- ♥ Clinical Support Teams ~ medical eligibility, 'hold' processing / 'recall' issue of components
- ♥ Donor recognition/awards

*<http://www.transfusionguidelines.org.uk/red-book>*

*<http://www.transfusionguidelines.org.uk/dsg>*

# Donor selection and care

- ♥ No test for vCJD in use at present
- ♥ Patients born after 01/01/96 should ideally receive imported plasma components\* and apheresis platelets (\*SaBTO recommendation)
- ♥ Male only plasma used to make FFP and Cryoprecipitate
- ♥ HepE testing started March 2016 (discretionary)

<http://www.transfusionguidelines.org.uk/red-book>

<http://www.transfusionguidelines.org.uk/dsg>



# Donations

- ♥ Voluntary non-renumerated (WHO 2020 goal)
- ♥ Donor – recipient unrelated
- ♥ No restrictions on patients receiving the blood components....
- ♥ ....but certain donors are selected to provide specific products (e.g. neonatal components)

# Disruption to donation

- ♥ Adverse weather
- ♥ Seasonal illness
- ♥ Events – Olympics
- ♥ Bank holidays
- ♥ Decreasing donor pool – fewer younger donors?

*Thinking of donating?*

<http://www.blood.co.uk>



0300 123 23 23



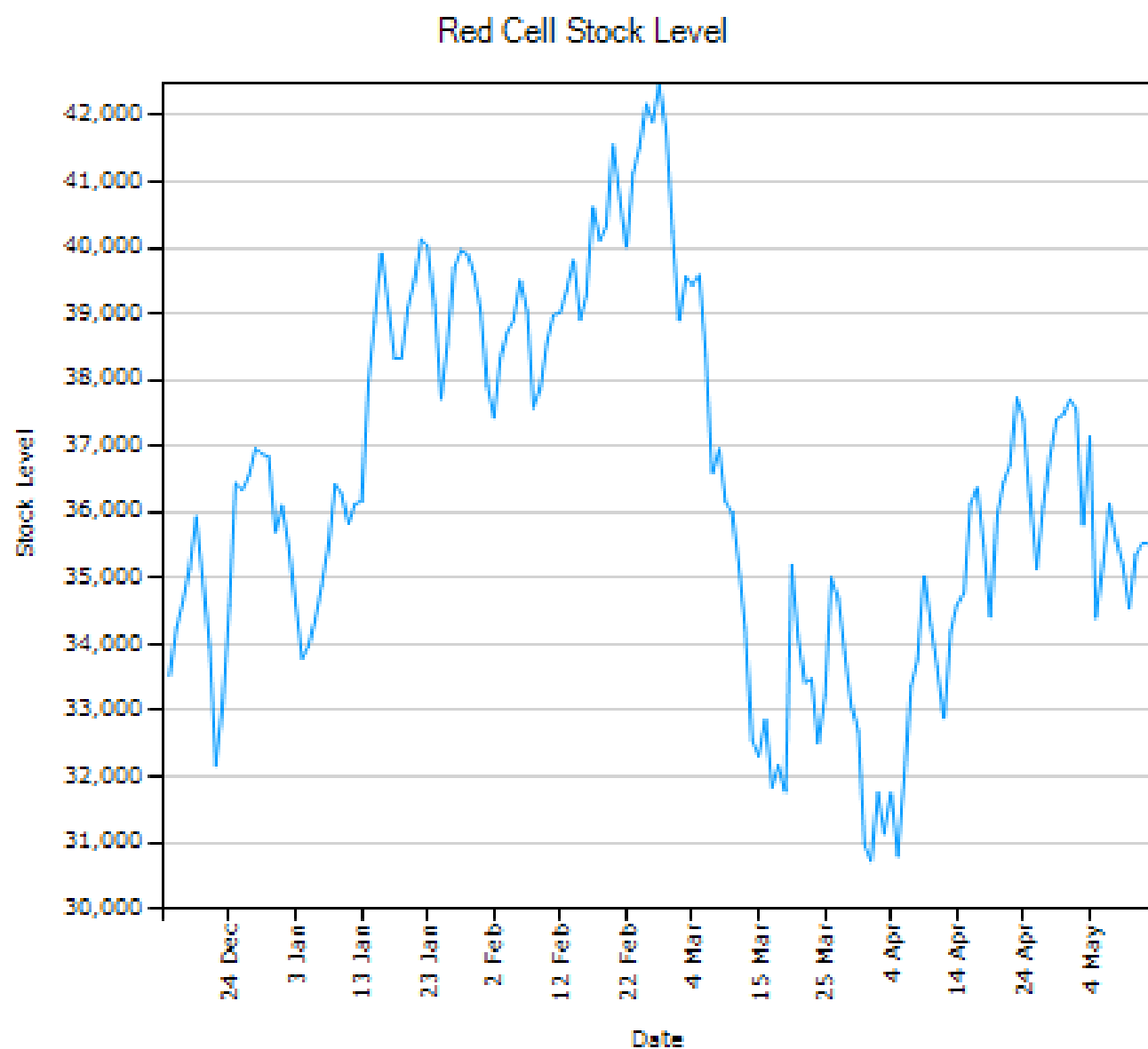
@GiveBloodNHS



NHSBlood

# Blood stocks at NHSBT (May 2016) [Red Cells]

	Red Cells			Platelets
	STOCK	ISI	TARGET	STOCK
O Pos	11575	6.9	16154	403
O Neg	2979	5.1	5590	106
A Pos	10833	7.6	13676	501
A Neg	5083	13.1	3512	225
B Pos	2998	8	3617	81
B Neg	606	5.3	1087	16
AB Pos	1032	10.2	1012	16
AB Neg	412	11.1	352	8
Total	35518	8.4	45000	1356





**URGENT COMMUNICATION - ACTION REQUIRED**

An electronic copy of this fax can be found on the Hospitals & Science "Home Page" via the urgent area highlighted in red - <http://hospital.blood.co.uk/>.

Date: Thursday, 03 January 2013

To: All Transfusion Laboratory Managers in hospitals served by NHS Blood and Transplant (NHSBT)

Dear Colleague,

**Stocks of O RhD Negative Red Cells - Action Required**

NHSBT has been very successful over the last two months in increasing overall stocks to protect the blood supply against winter viruses. We are however now starting to see a reduction in the number of donors attending pre-booked appointments due to illness which is affecting our O RhD negative stocks. Our Blood Supply team has already taken a series of actions to make personal contact with additional O RhD negative donors and you will also see an escalated level of activity in the media to ensure that stocks of this group do not fall any further.

Demand for Group O RhD negative over the last 12 months has increased as a percentage of total issues by over 1% to 11.5% with hospitals citing several reasons for this change. We now need your support to avoid a shortage and to help protect this group in the longer term.

It is important that all hospitals review their O negative usage data regularly and initiate actions to keep this group below the recommended level of 10.5% of total stock. There are some hospitals that are still consistently holding a much higher percentage of their stock as O RhD negative, and this is now increasing the pressure on supply.

**Action required**

We are taking the precautionary measure of asking hospitals to conserve stocks of group O negative red cells for group O negative patients in line with established guidelines.

Hospitals taking >10.5% of their red cells should review stock holding levels of this group and initiate actions to reduce inappropriate use as a priority with members of your transfusion team. Data to support this review outlined below is available via the Blood Stocks Management Scheme.

## Blood groups in the South West

- O+ 36.9%

- O- 7.9%

- A+ 34.8%

- A- 7.7%

- B+ 7.7%

- B- 1.5%

- AB+ 2.8%

- AB- 0.6%

However demand for O- blood in the SW for April 2016 was 12%

# Cost of blood components

- NHSBT price list 2015/16:

Red cells.....£120.00

Platelets.....£193.15

FFP.....£28.46\*

MB FFP.....£178.03\*

Cryoprecipitate.....£177.57\*\*

MB Cryoprecipitate.....£1,080.48\*\*

Granulocytes.....£1,064.67\*\* [ \*4 / \*\*2 required for adults ]

- Additional component charges are applied for further testing (e.g. CMV) or processing (e.g. irradiation)
- Other costs include RCI and H&I sample testing services, and non-routine delivery.

*<http://hospital.blood.co.uk/products/>*

# Blood components – spec.

## Expiry (shelf-life)

- Red cells – 35 days  
14 days (irradiated)
- Platelets – 7 days
- FFP/Cryo. – 36 months

Component name	<b>Red Cells in Additive Solution Leucocyte Depleted</b>		
Red Book reference	8 <sup>th</sup> Edition Section 7.6		
Parameter	NHSBT mean	NHSBT/UK Specification	Note
Volume (mL)	274	220-340	
Haemoglobin (g/unit)	52.43	>40	
Haematocrit (L/L)	0.59	N/A	
WBC count (x10 <sup>9</sup> /unit)	0.30	<1	
Granulocytes (x 10 <sup>9</sup> /unit)	N/A	N/A	
Platelet concentration (x10 <sup>9</sup> /L)	N/A	N/A	
Platelet yield (x10 <sup>9</sup> /unit)	N/A	N/A	
Factor VIIIc (IU/mL)	N/A	N/A	
Factor VIIIc (IU/unit)	N/A	N/A	
Fibrinogen (mg/unit)	N/A	N/A	
Supernatant Hb	N/A	<0.8%	Of red cell mass at the end of shelf life
pH at expiry	N/A	N/A	

*NHSBT Portfolio of Blood Components -*  
<http://hospital.blood.co.uk/products/>



# Age of Red Cells at issue (days)

NHSBT Centre	2014/15	Jan-16	Feb-16	Mar-16	YTD
Leeds	13.0	12.6	12.6	12.6	12.8
Sheffield	11.8	11.9	12.4	11.7	12.2
Birmingham	12.1	12.6	13.7	13.6	12.8
Brentwood	10.8	12.3	13.0	13.0	11.8
Cambridge	13.3	14.6	14.9	14.9	13.9
Manchester	12.3	12.5	13.1	13.0	13.0
Lancaster	12.0	12.4	13.7	13.6	13.0
Liverpool	12.3	12.5	12.7	13.1	12.5
Newcastle	11.4	10.7	11.8	10.7	11.7
Tooting	13.1	12.8	12.9	12.5	13.2
Southampton	13.0	13.5	14.2	13.5	13.3
Filton	11.8	9.8	8.9	10.0	10.8
Plymouth	12.2	13.3	12.6	13.2	12.6
Oxford	12.4	12.8	13.3	13.5	12.7
Colindale	10.1	9.9	10.0	10.1	9.9
<b>National Average</b>	<b>12.0</b>	<b>12.1</b>	<b>12.5</b>	<b>12.4</b>	<b>12.3</b>

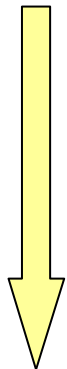
# Wastage - reason



## *Red cells:*

- Time expired
- Out of temperature control outside lab.\*
- Miscellaneous
- Fridge failure

*< \* In 2013/14 almost 10,000 units were taken to the clinical area but not used, and had to be wasted >*



## *Platelets:*

- Medically ordered not used
- Stock time expired\*\*
- Surgically ordered not used
- Miscellaneous
- Wasted outside of lab.

**\*\* Only applies to hospitals that hold a stock of platelets**

# Summary

- ~ million units Red Cells issued by NHSBT in 2015
- All sourced from volunteer unpaid donors
- Donor Health Check, mandatory testing, infection control & leucodepletion = safe 'product'
- Critical balance between stock and issues
- Wastage is avoidable and is in your control

***Blood cannot be made – it must be donated***

***The cost and the value of blood  
are more than just financial***

***Thank You***