

Blood Supply and Wastage

Katy Cowan PBMP NHSBT

Lab Matters, Oake manor 7th December 2015

Blood supply

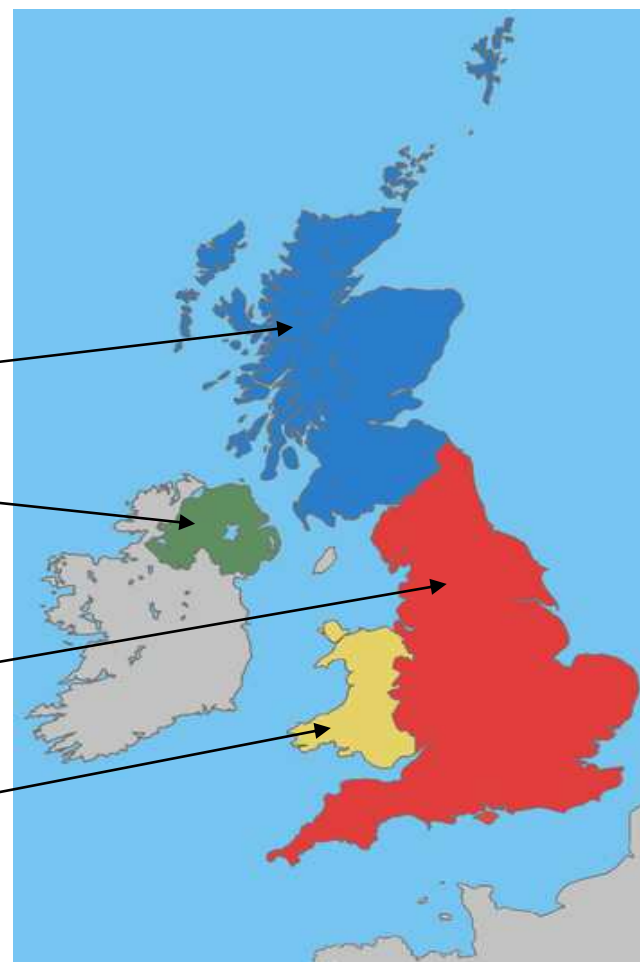
- UK supplied by 4 blood services:

SNBTS

NIBTS

NHSBT

WBS



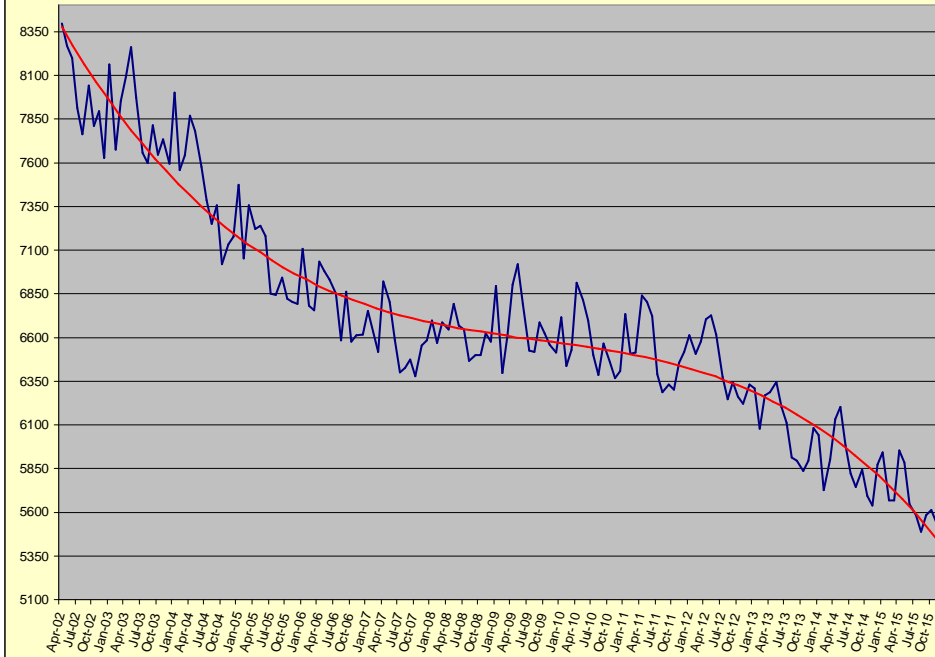
http://commons.wikimedia.org/wiki/File:Uk_map_home_nations.png

Blood supply

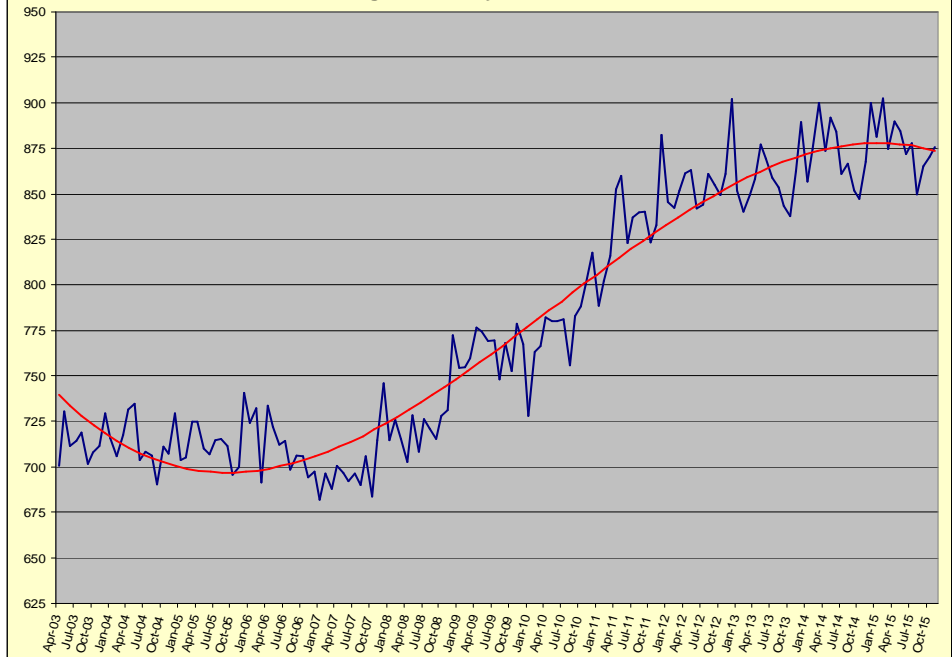
- NHSBT supply to England
- & North Wales (and MOD)
- 2014/15 NHSBT issued to hospitals:

1,659,000 units Red Cells	SW 142,200
275,000 units Platelets	SW 18,800
215,000 units FFP	SW 14,200
33,000 units Cryoprecipitate (pooled)	SW 1,340

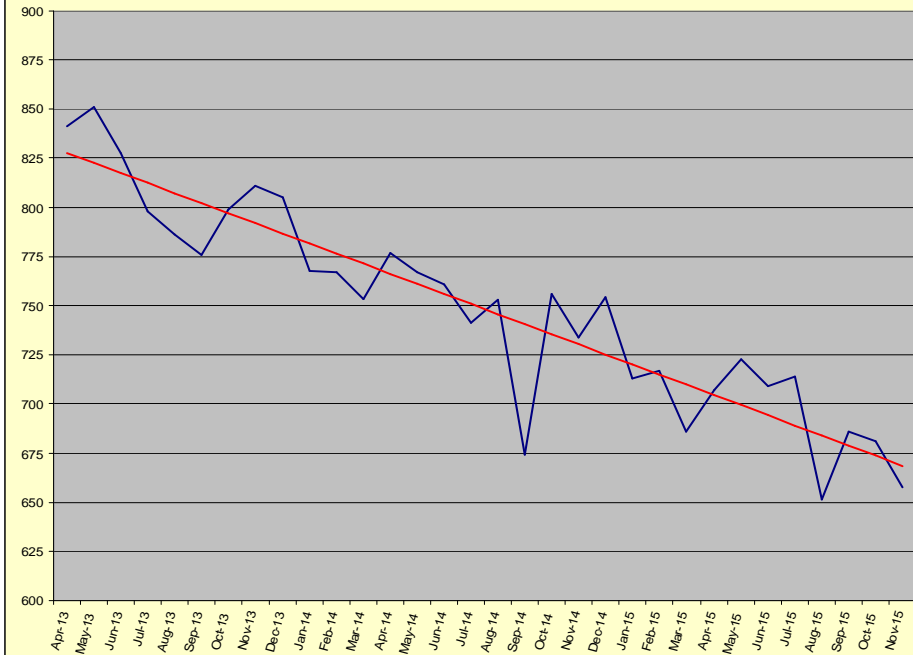
Average Weekday Red Cell Issues



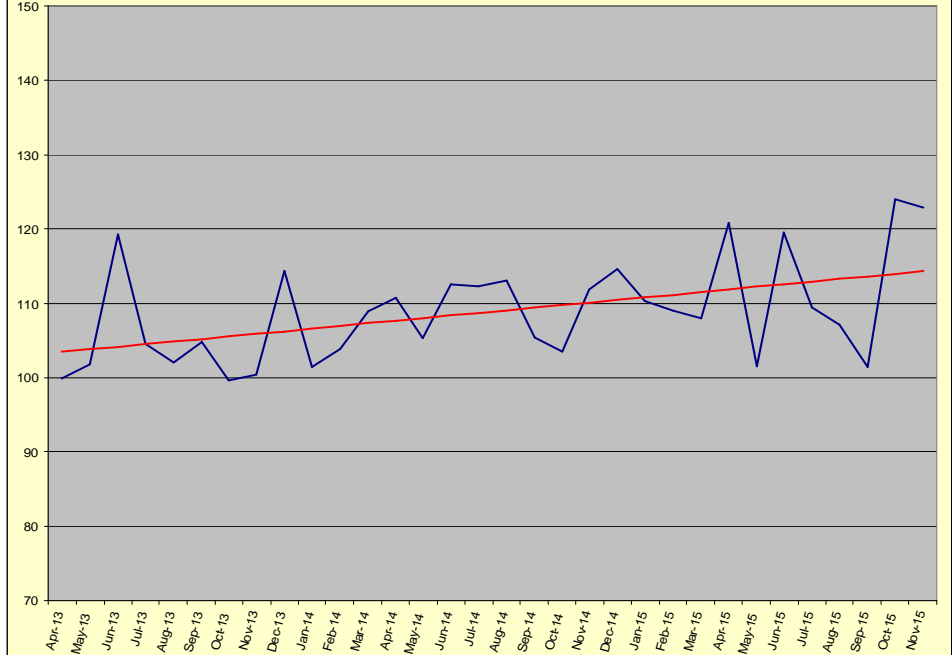
Average Weekday Platelet Issues



Average Weekday FFP Issues

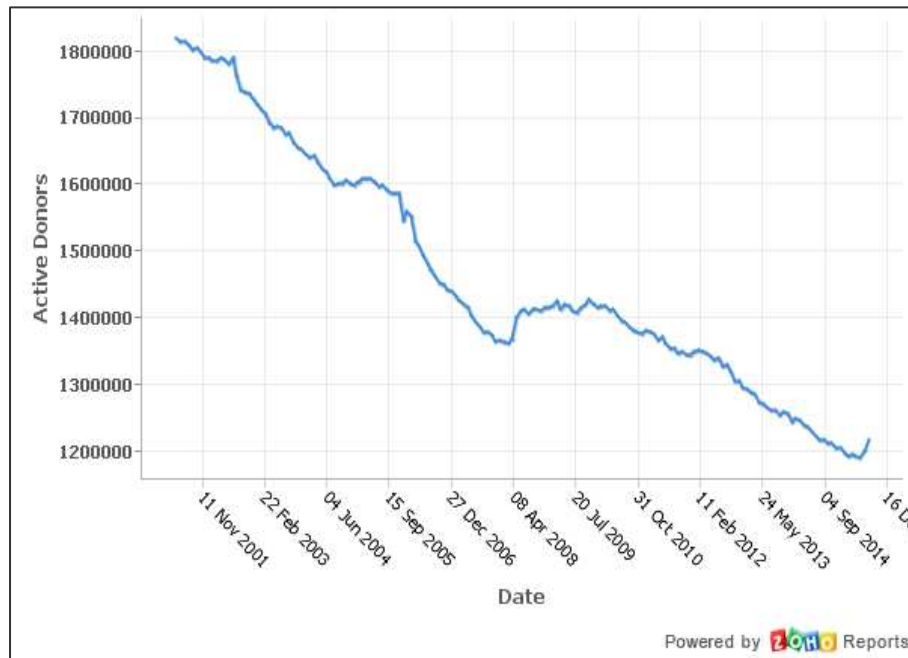


Average Weekday Cryo Pooled Issues



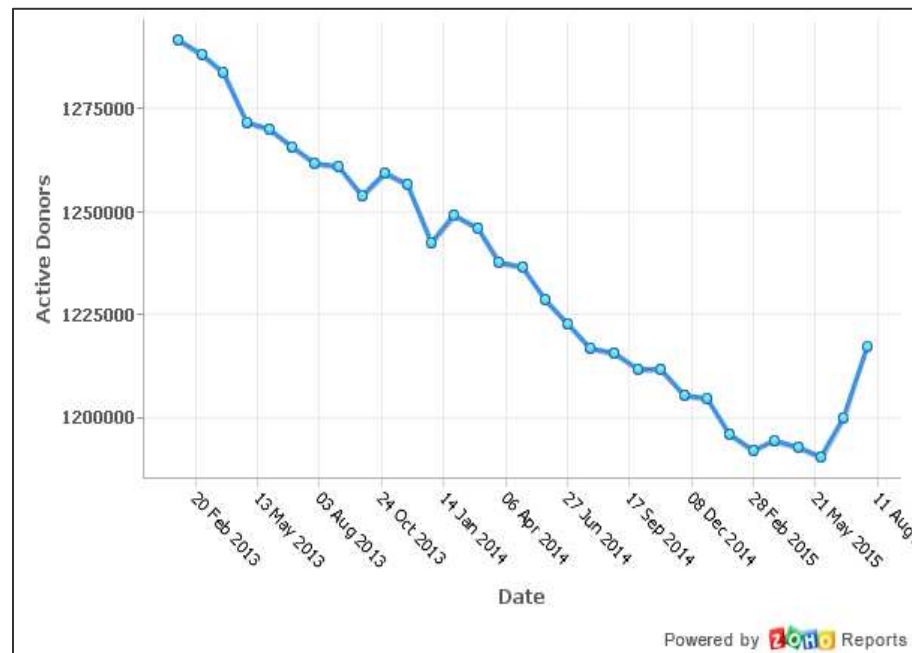
Donating population

Long Term Trend in Number of Active Donors:



Only 4% of adults are currently blood donors (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)

> 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 to start early 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/caveats 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

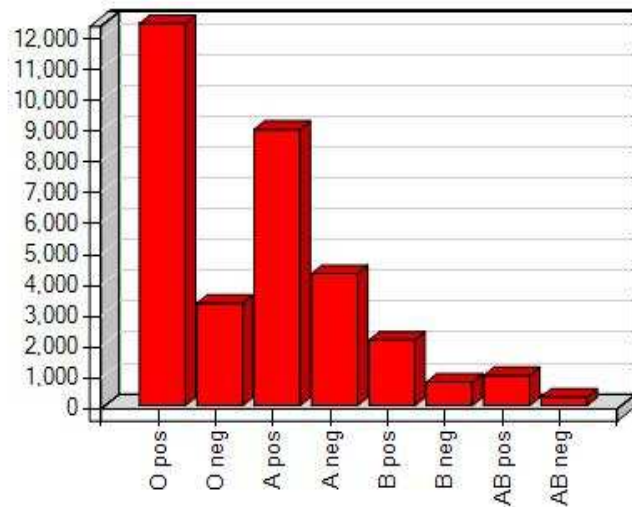


@GiveBloodNHS

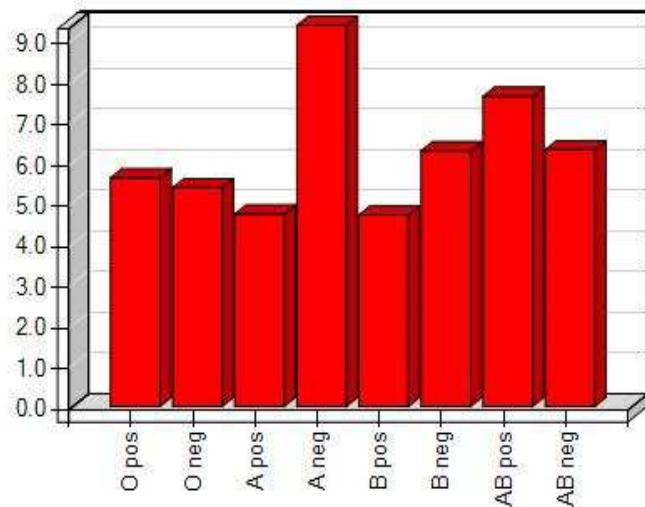


NHSBlood

Blood stocks (23rd Nov. 2015) [Red Cells]

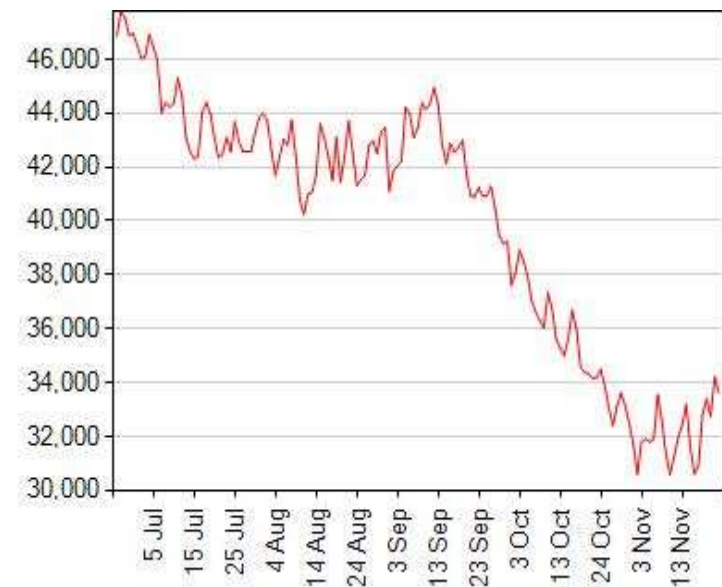


Number of units (by ABO group)



Number of days (by ABO group)

Number of units (all ABO groups)



Source: www.blood.co.uk



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%

Issue data for the following month:-
Sep 2015

NHSBT

Adult Red Cell 'NET' Issues						
Total	Avg month	Total - avg	O Neg	Avg ONeg	ONeg - Avg	O Neg as %
133,808	134,560	-754	16,255	15,919	336	12.1%

South West RTC

Adult Red Cell 'NET' Issues						
Total	Avg month	Total - avg	O Neg	Avg ONeg	ONeg - Avg	O Neg as %
11,346	11,307	39	1,288	1,300	-14	11.3%

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]

www.123rf.com

- 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	Red Cells in Additive Solution Leucocyte Depleted		
Red Book reference	8 th 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 ⁹ /unit)	0.30	<1	
Granulocytes (x 10 ⁹ /unit)	N/A	N/A	
Platelet concentration (x10 ⁹ /L)	N/A	N/A	
Platelet yield (x10 ⁹ /unit)	N/A	N/A	
Factor VIIIc (IU/mL)	N/A	N/A	
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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/>

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NHSBT Portfolio of Blood Components -
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Age of Red Cells at issue (days)

NHSBT Centre	2014/15	Apr-15	May-15	Jun-15	YTD
Leeds	13.0	12.4	12.9	13.8	13.1
Sheffield	11.8	11.2	12.0	13.3	12.2
Birmingham	12.1	11.9	12.3	13.6	12.6
Brentwood	10.8	9.9	10.8	11.6	10.7
Cambridge	13.3	12.3	13.0	15.0	13.4
Manchester	12.3	12.3	13.7	14.2	13.4
Lancaster	12.0	11.8	11.7	12.9	12.1
Liverpool	12.3	11.1	11.5	12.7	11.8
Newcastle	11.4	11.2	12.1	12.3	11.9
Tooting	13.1	12.8	13.6	14.3	13.6
Southampton	13.0	12.0	12.8	13.4	12.7
Filton	11.8	10.4	10.7	12.0	11.0
Plymouth	12.2	11.2	12.3	13.2	12.2
Oxford	12.4	11.0	12.0	13.7	12.2
Colindale	10.1	9.5	10.5	10.7	10.3
National Average	12.0	11.5	12.2	13.1	12.3

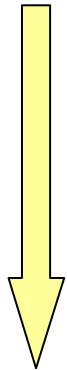
Wastage - reason



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

- ~ 1.65 million units Red Cells issued by NHSBT in 2014/15
- 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