



Blood and Transplant

Blood Supply and Wastage

Emma Taylor - NHSBT

Lab Matters Day, Oake Manor, 26th June 2019



Blood Supply in the UK

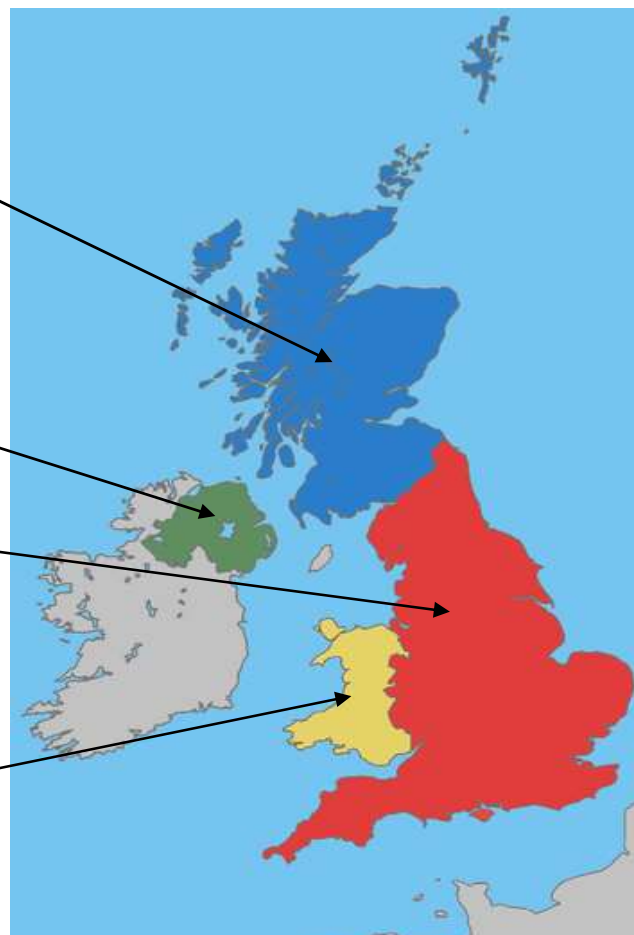
NHS

Blood and Transplant



NHS

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

Blood supply

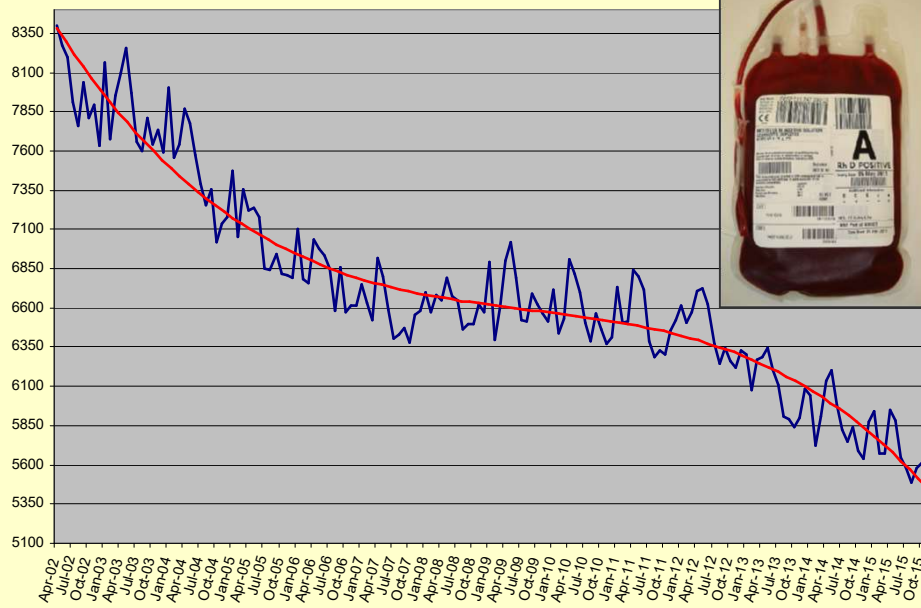


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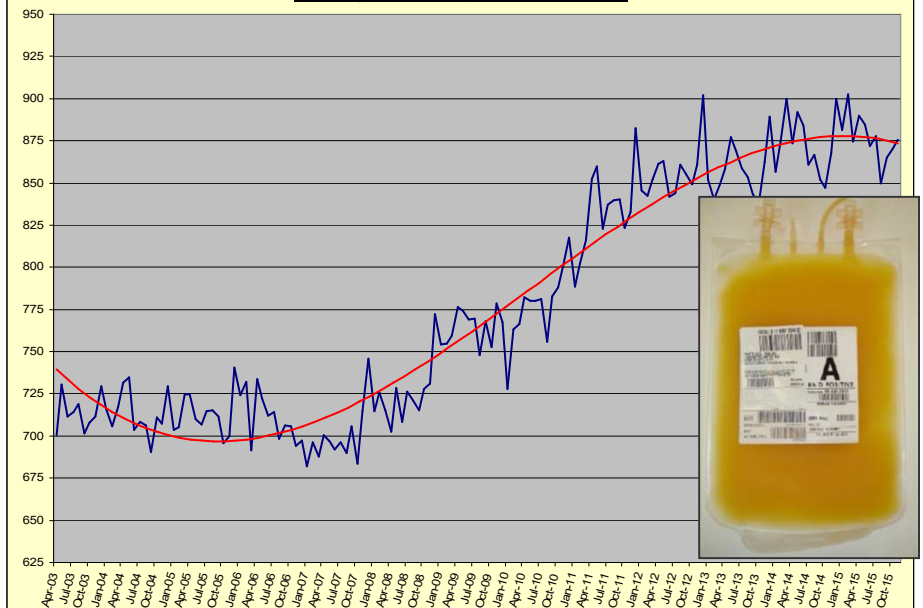
- NHS Blood and Transplant supply England
- And the Ministry Of Defence
- Last year 2018/19 NHSBT issued to hospitals:
 - ✓ 1,417,000 Units of Red Cells
 - ✓ 253,000 Units of Platelets
 - ✓ 168,000 Units of FFP
 - ✓ 35,000 Units of Cryoprecipitate (pooled)



Average Weekday Red Cell Issues



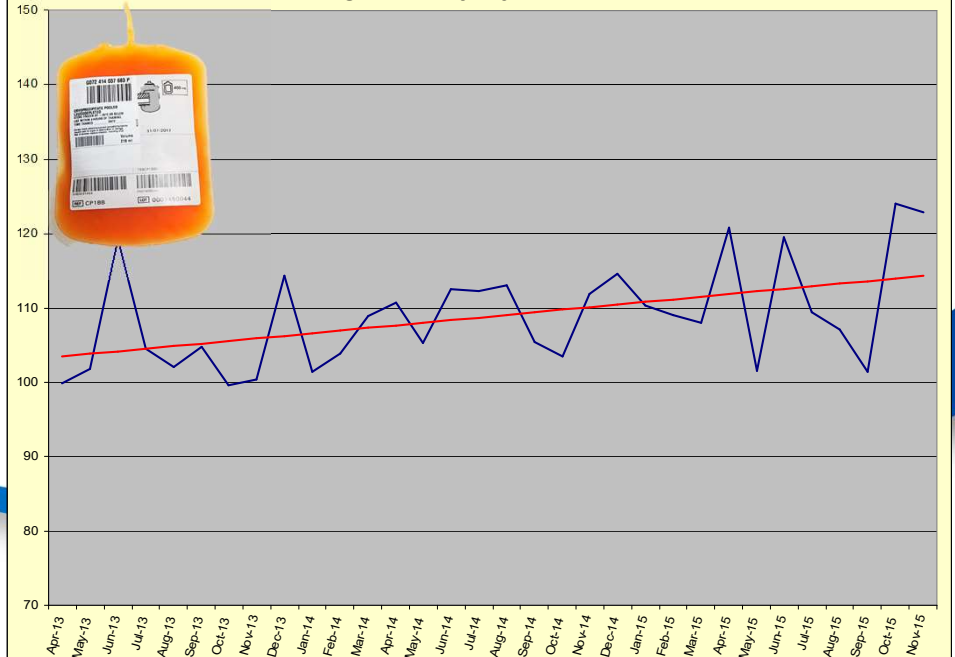
Average Weekday Platelet Issues



Average Weekday FFP Issues



Average Weekday Cryo Pooled Issues

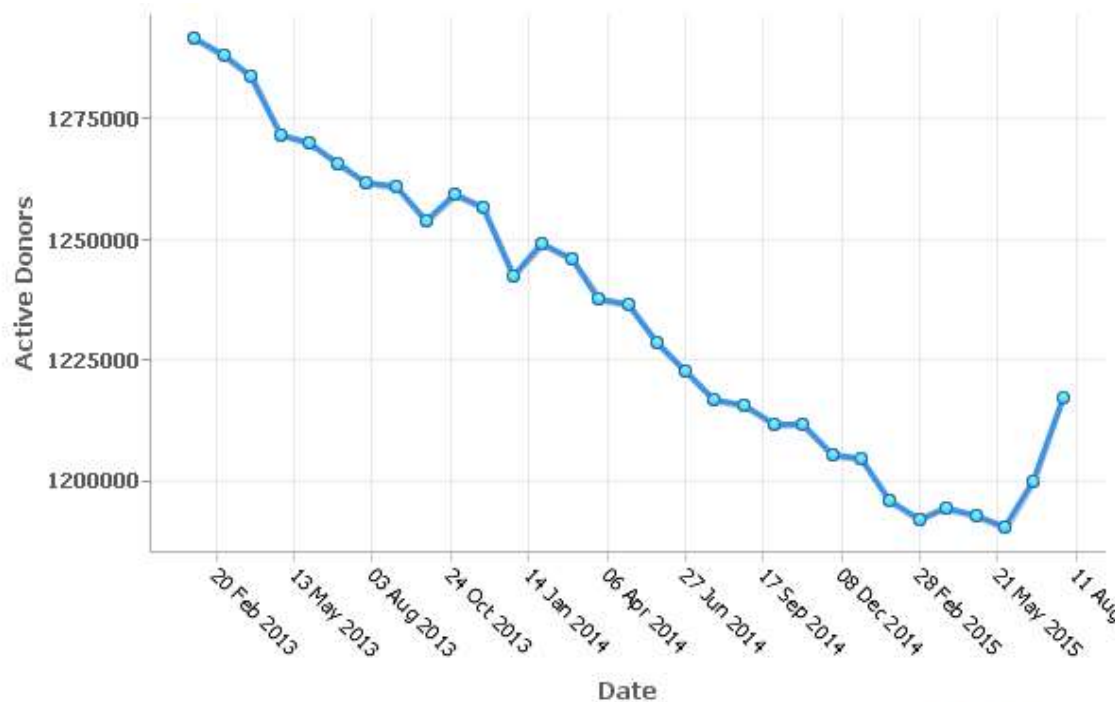


Donating population



Blood and Transplant

Recent Trend in Number of Active Donors:



www.bbc.co.uk

www.bbc.co.uk

Powered by  Reports

~4% of adults are blood donors

Donating population

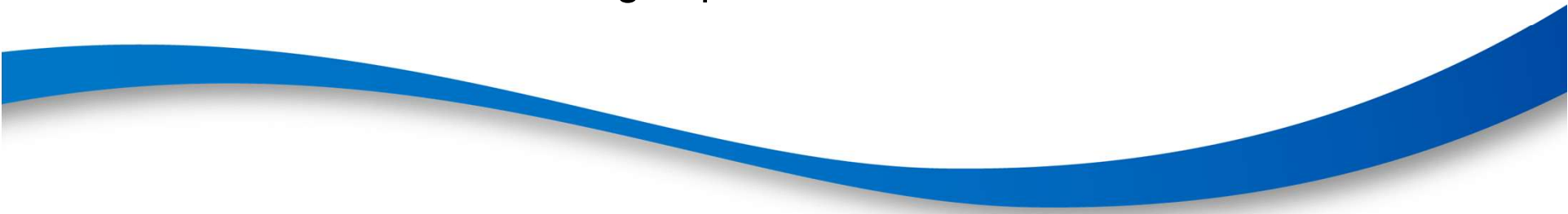
- >6000 blood donations required every day
- 200,000 new donors needed per year
- Most people aged >17 are able to give blood, no upper age limit.
- Around half of our current donors are over the age of 45
- We are actively encouraging the BAME (Black, Asian and Minority Ethnicity) populations to donate to ensure we can provide the most suitable blood for the BAME population



Donor selection and care

Blood and Transplant

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

- ❑ Donor Selection:
 - Age, weight, Hb, medical history, lifestyle, recent travel
 - ❑ Microbiology testing:
 - Mandatory (HIV, HepB, HepC, HepE, Syphilis, HTLV)
 - Discretionary (Malaria, HepB core, T-Cruzi, West Nile Virus)
 - Bacterial monitoring of platelets
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Donor selection and care

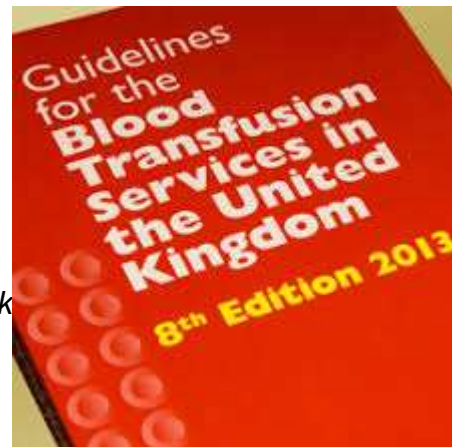


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- Blood Safety and Quality Regulations (BSQR) [2005]
- Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO) recommendations
- Clinical Support Teams ~ medical eligibility, 'hold' processing / 'recall' issue of components
- Donor recognition/awards

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

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



Donor selection and care



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- 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
- Hep E testing mandatory March 2016

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

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



Donations

NHS

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- 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



Blood and Transplant

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

Thinking of donating?



0300 123 23 23

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



@GiveBloodNHS

Blood stocks at NHSBT

(June 2019)



Blood and Transplant

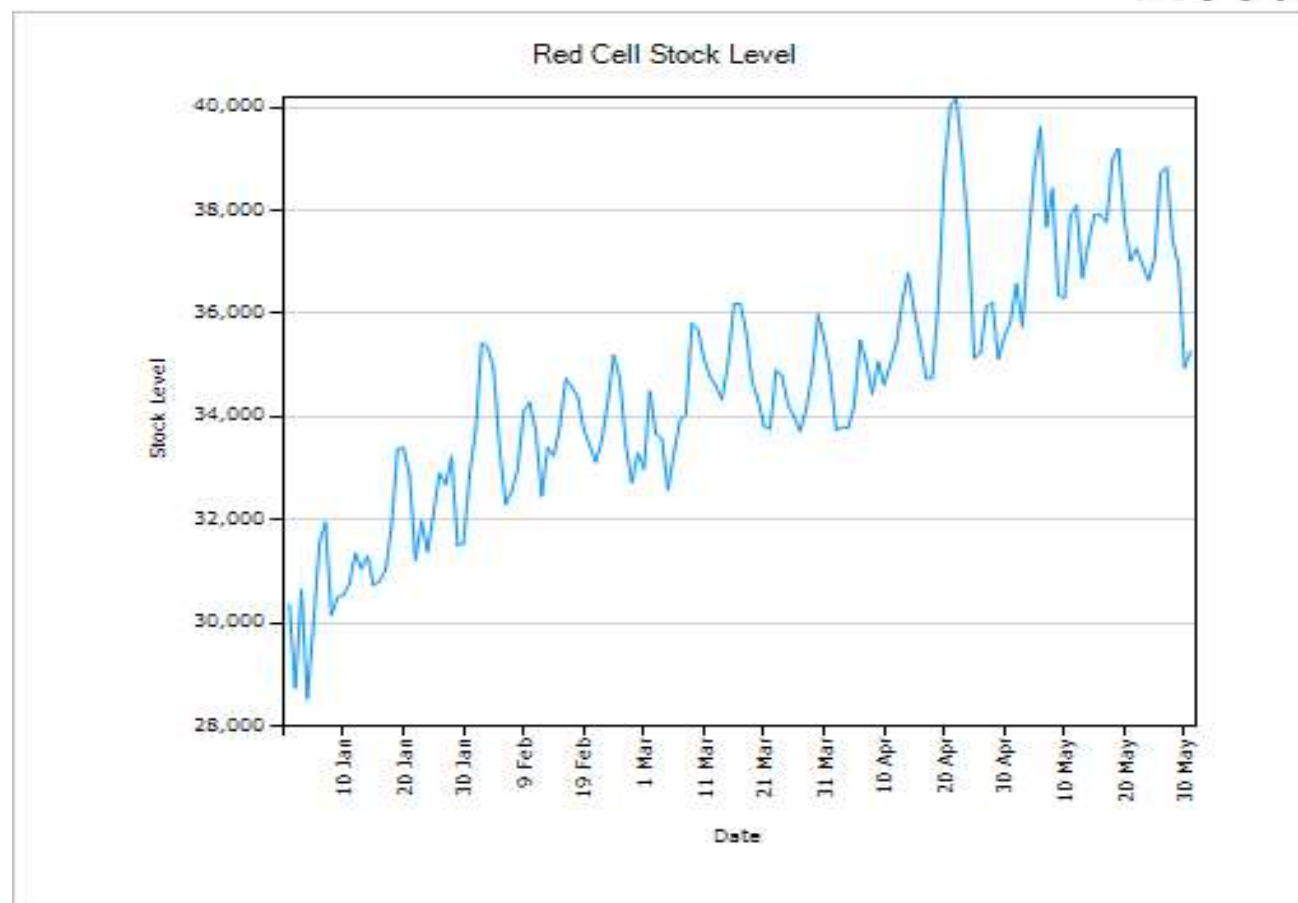
	Red Cells			Platelets
Group	STOCK	ISI	TARGET	STOCK
O Pos	10410	6.6	10170	267
O Neg	3376	5.5	3701	96
A Pos	12063	9.3	8479	404
A Neg	3827	10.9	2297	151
B Pos	3382	9.5	2226	95
B Neg	764	6.4	691	38
AB Pos	1154	12.8	608	25
AB Neg	294	10	231	9
Total	35270	8.9	28403	1085

Blood stocks at NHSBT

(Jan - June 2019)



Blood and Transplant



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 group distribution

Blood and Transplant

- 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 is greater than 13%!!



Cost of blood components



Blood and Transplant

NHSBT price list 2019/20:

Red cells.....£133.44

Platelets Pool/Aph.....£193.14/£240.56

FFP.....£31.40

MB FFP.....£189.87

Cryoprecipitate.....£32.56

MB Cryoprecipitate.....£1151.94

Granulocytes.....£1,166.56



- Costs also apply to our Diagnostic and Therapeutic Services, and extra requirements, e.g. irradiation of products.

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

Blood components – spec.



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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		
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Red Book reference	8 th Edition	Section 7.6
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Parameter	NHSBT mean	NHSBT/UK Specification	Note
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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	
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	

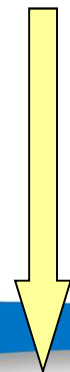
Wastage - reasons

Red cells:



- Time expired
- Out of temperature control outside lab.
- Miscellaneous
- Fridge failure
- K+

Platelets:



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



K+ Red Cells



Blood and Transplant

- 9% of the Caucasian population is K+
- NHSBT take donations from K+ donors
- Hospitals like to order K- red cell units as standard

HOWEVER! The following patients can receive K+ red cells safely:

- ✓ All male patients – with no detectable anti-K (unless regularly transfused)
- ✓ All female patients >50 years old – with no detectable anti-K (unless regularly transfused)
- ✓ All K+ patients

Following exposure to K+ red cells, patients may develop an anti-K, this can cause mild/severe delayed haemolytic transfusion reactions and HDFN.

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K+ Red Cells

- It is important that hospitals don't only order K- red cell units
- NHSBT will issue a certain percentage of K+ red cell units to hospitals
- This is to **reduce wastage** and to **maintain stocks** of K- red cells for patients who really need them
- This is particularly important for the less common blood groups
- Please don't be upset when you receive K+ red cells!
- **They are still useful!**



Transfusing Platelets across Blood Groups

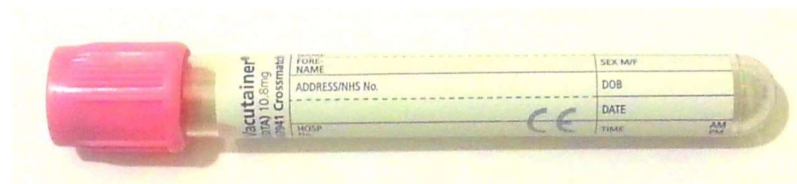
- ABO non-identical platelets may be given at times of shortage or in an emergency
- High Titre (HT) negative platelets are available to reduce risk of haemolysis
- For A or B platelets transfused into an O patient, HT- not required
- D negative platelets should be given to D negative patients
 - ✓ Especially D negative women of child-bearing potential
 - ✓ Boys under 18 years
 - ✓ Patients with anti-D antibodies
- D positive platelets may be transfused if D negative unavailable
- In the case of women of child-bearing potential, anti-D prophylaxis should be given

See NHSBT's hospital and science website for more information

Pre-transfusion sample labelling

Blood and Transplant


- Essential that blood samples are labelled appropriately and correctly
- Minimum requirements for acceptance of a Blood Transfusion sample:
 - ✓ Last Name
 - ✓ First Name
 - ✓ Date of Birth
 - ✓ Unique Identification Number
- Paperwork and sample **must** have identical details
- British Society for Haematology recommends having a 'zero tolerance' approach for rejecting samples which don't meet the minimum requirements



Sending Samples to NHSBT



Blood and Transplant

- NHSBT is a large organisation with many sites across England
 - Please be clear where your sample is going
 - Label your sample boxes correctly and accurately
 - Please put the **full address** on the box, and the **department** e.g. RCI, H+I...
 - Departments may store samples differently, e.g. refrigerated/not
 - Don't assume that the sample will find it's way to where it's going...this will cause delays to test results, and affect sample integrity.
 - Samples can't be tested if they are too old
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Blood and Transplant

Really handy website:

www.hospital.blood.co.uk



Summary



Blood and Transplant

- >1.4 million Red Cell Units issued by NHSBT in 2018
- 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!**
- **By working together we can minimise wastage and help to keep blood stocks healthy.**

