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The blood supply – drivers, challenges and future plans

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3 Key Messages

- Blood supply in UK may not always be plentiful
- Need to reduce waste across the supply chain
- Involve the patient and use blood appropriately

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- Manages the national voluntary donation system for blood, tissues, organs and stem cells turning these precious donations into products that can be used safely to the benefit of the patient
- Last year received 3,500 organ and 4,000 tissue donations and banked 2,200 cord blood units from across the UK
- Supply around 2 million units of blood a year to hospitals in England and north Wales

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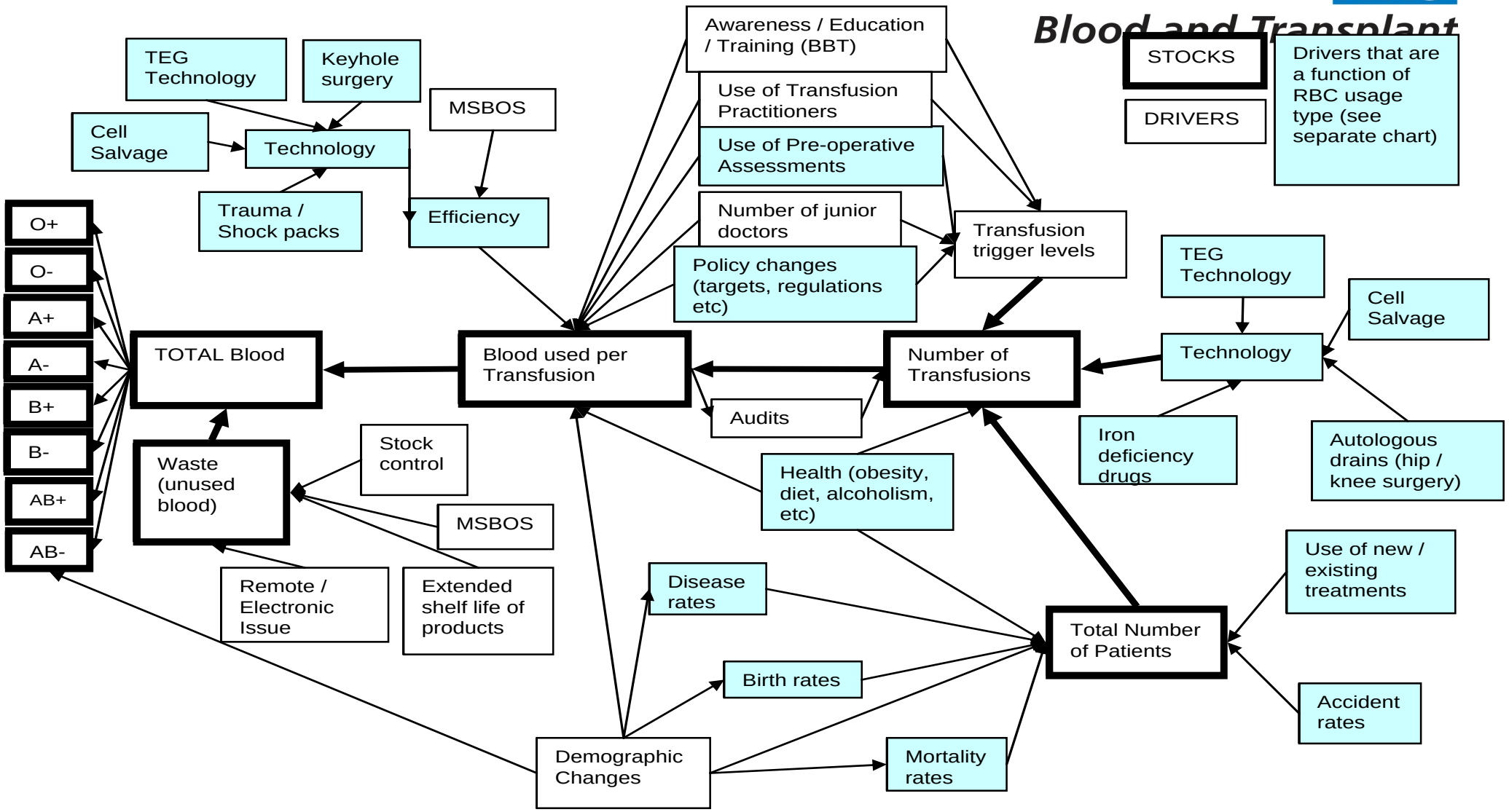
What are the current drivers for the blood supply?

Demand Drivers for red blood cells in the hospital



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Demand Drivers in NHSBT

- Demand for blood - benchmarking
- Inappropriate use – audit data
- DH - NHSBT Commercial Review 2011
- NHSBT Strategy
- Compliance with legislation / inspections
- Minimise risk / improve safety
- Patients
- Reduce costs / wastage

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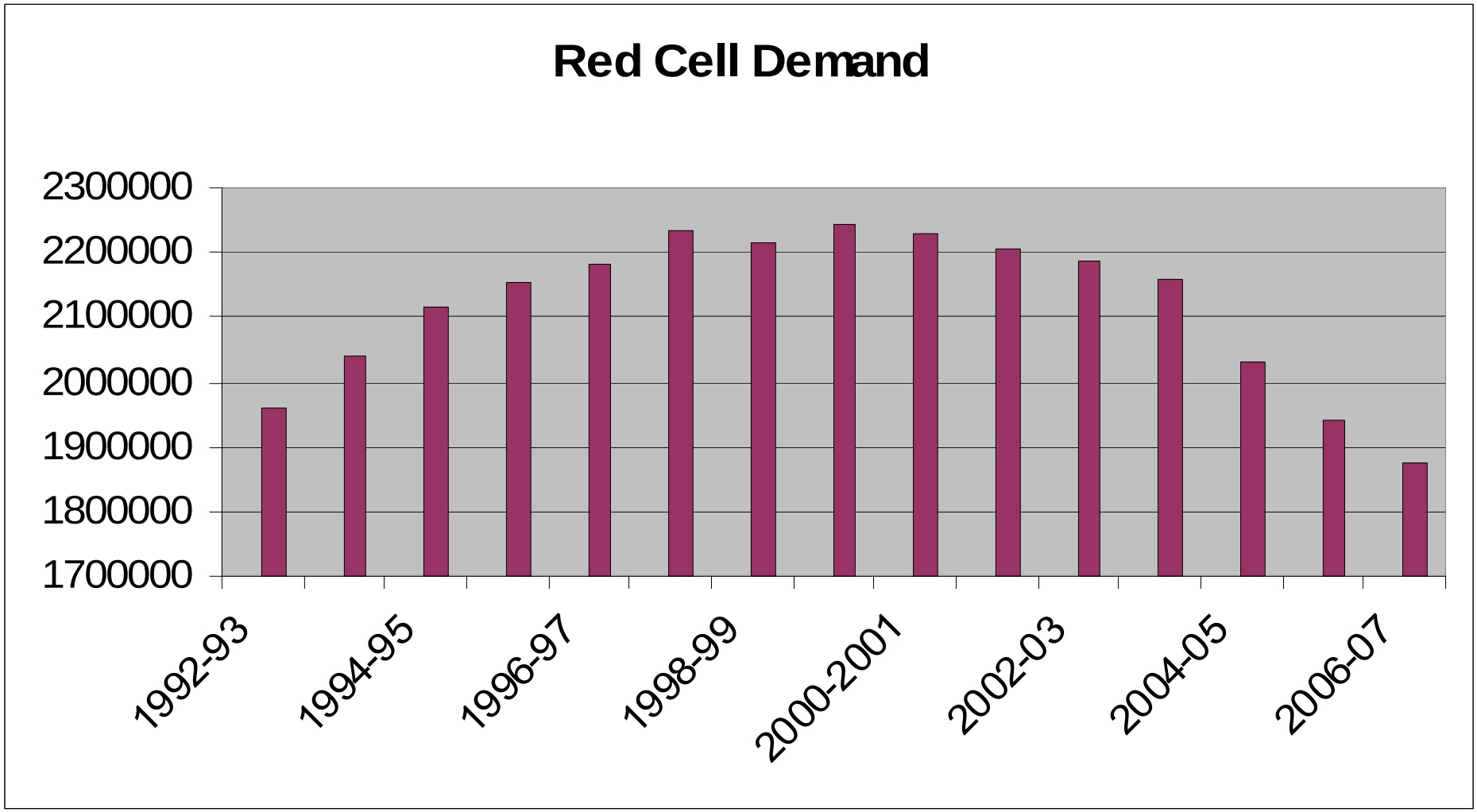

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But.....

- Things changed in September 2007

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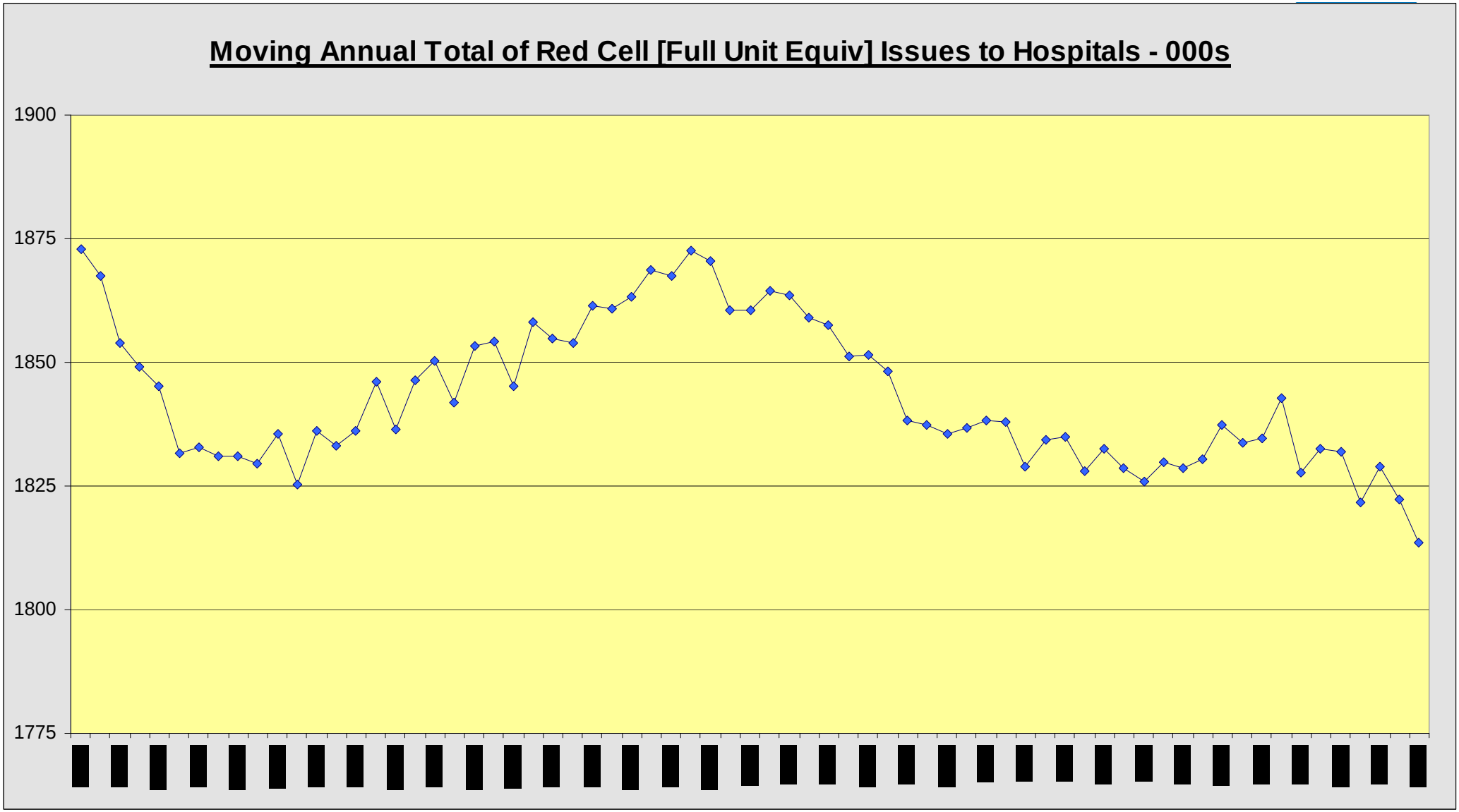
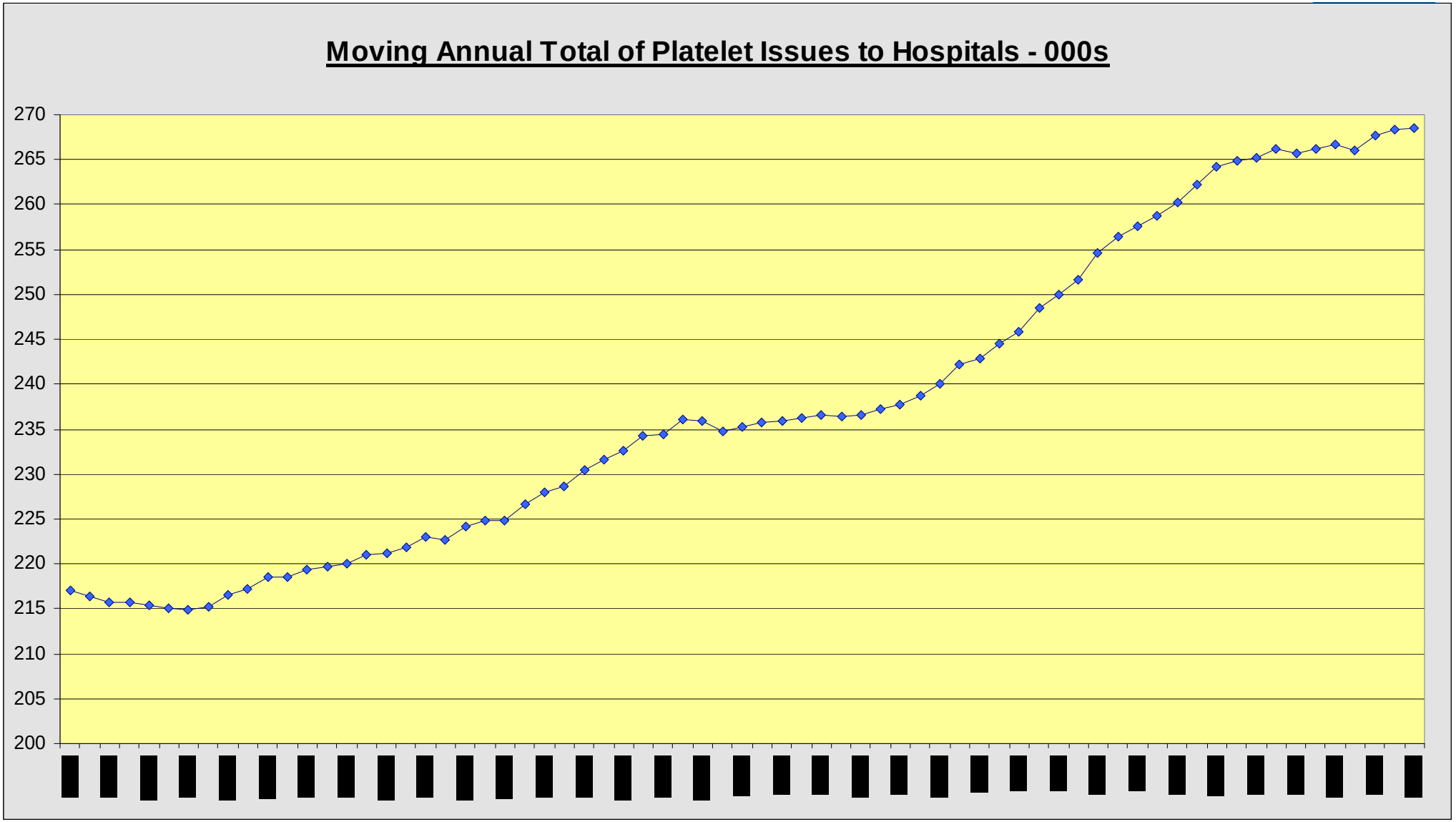
September 2007

- Status Quo released their 28th album 'In Search of the Fourth Chord'
- House prices peaked
- Gordon Brown was appointed Prime Minister
- The onset of the financial crisis - Bank of England was forced to hand emergency funding to Northern Rock
- Summer 2007 was the wettest on record
- Demand for blood components started to rise

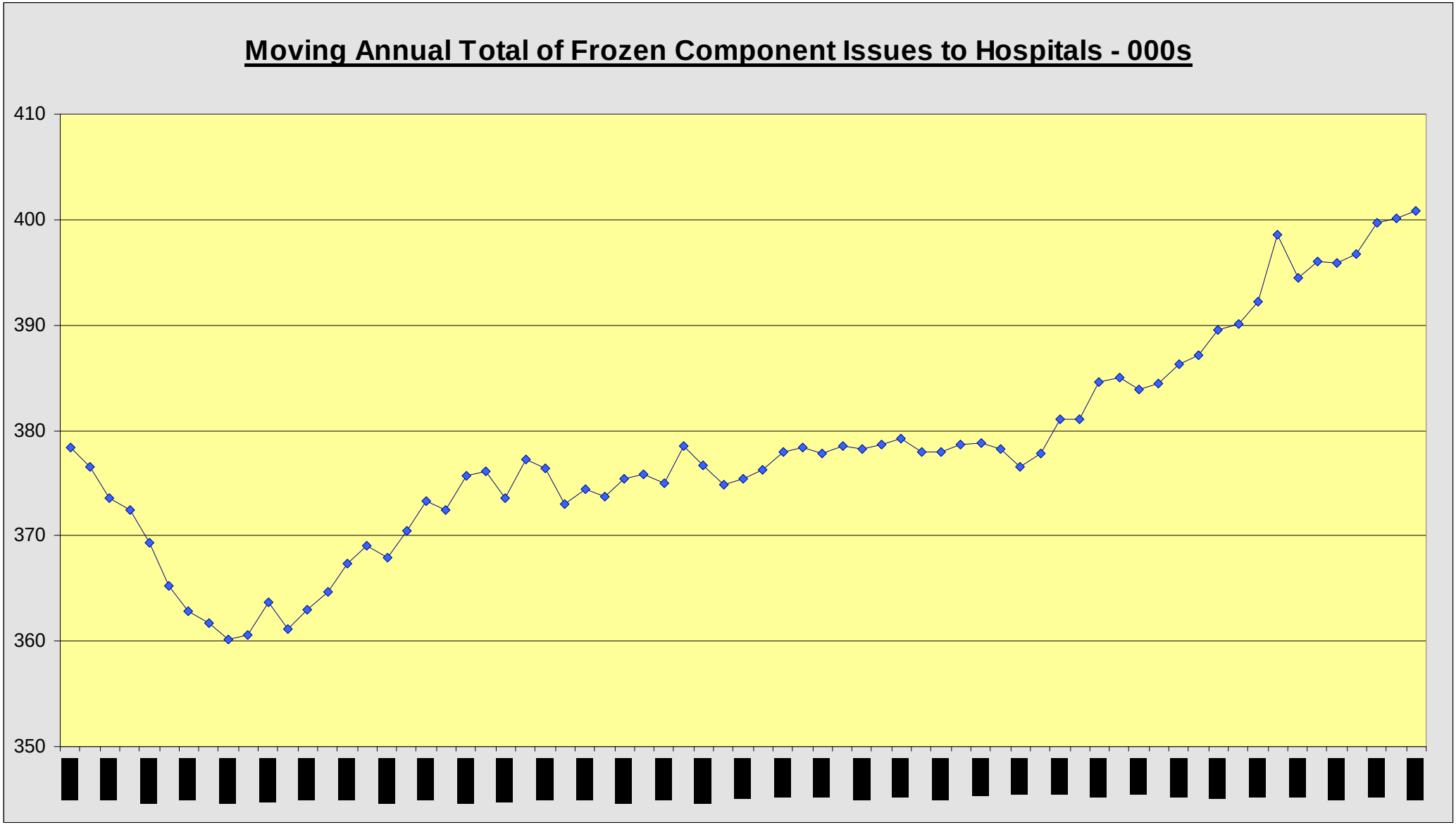
Moving Annual Total of Red Cell [Full Unit Equiv] Issues to Hospitals - 000s



Moving Annual Total of Platelet Issues to Hospitals - 000s



Moving Annual Total of Frozen Component Issues to Hospitals - 000s



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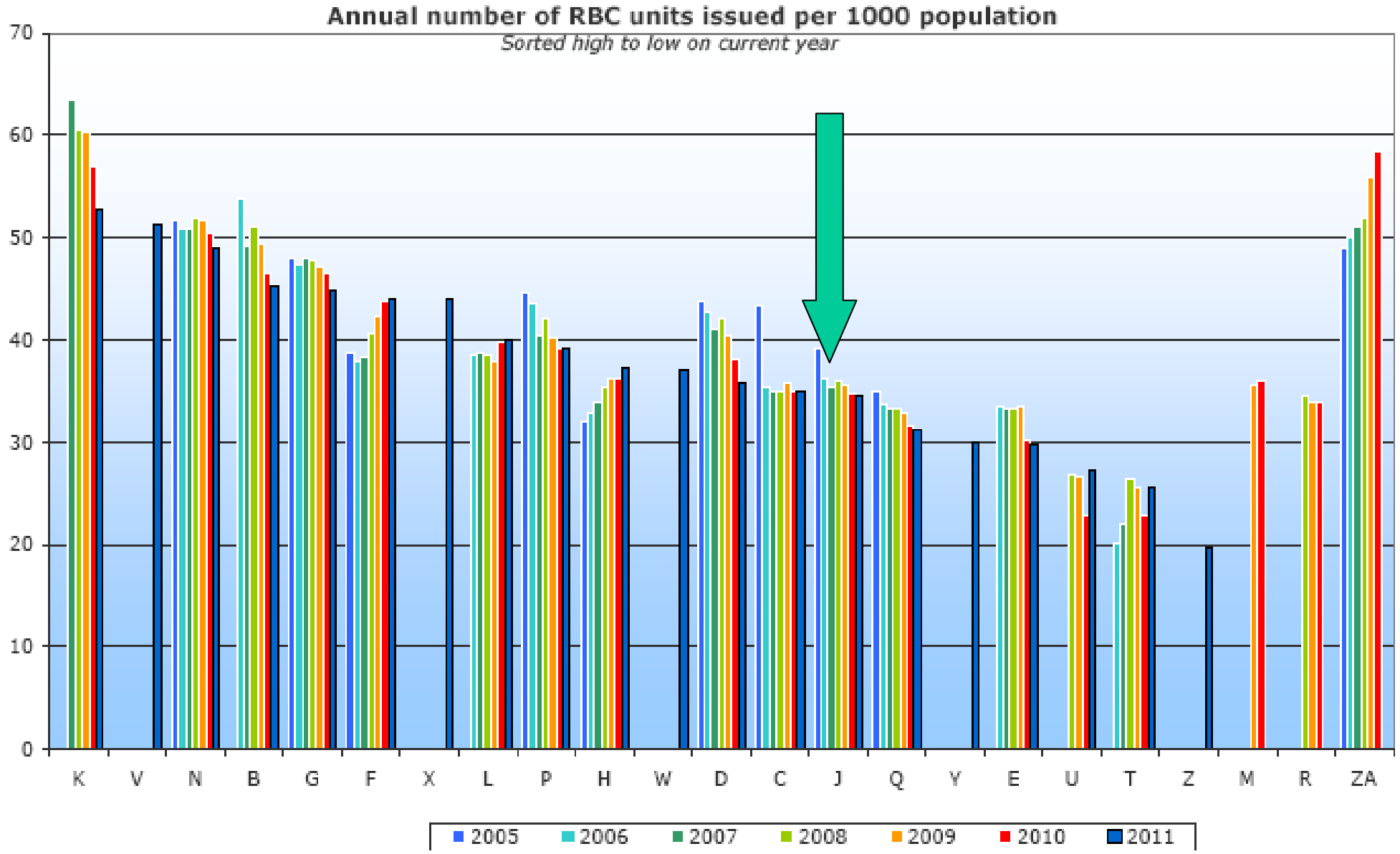
Blood Usage in comparison with other European countries

Red Cell Usage

- NHSBT reported a blood usage rate of 34.5 units / 1000 population.
- Compares well with the other well developed EBA members


Annual number of RBC units issued per 1000 population
Sorted high to low on current year
70
60
50
40
30
20
10
0
K
V
N
B
G
F
X
L
P
H
W
D
C
J
Q
Y
E
U
T
Z
M
R
ZA
2005
2006
2007
2008
2009
2010
2011

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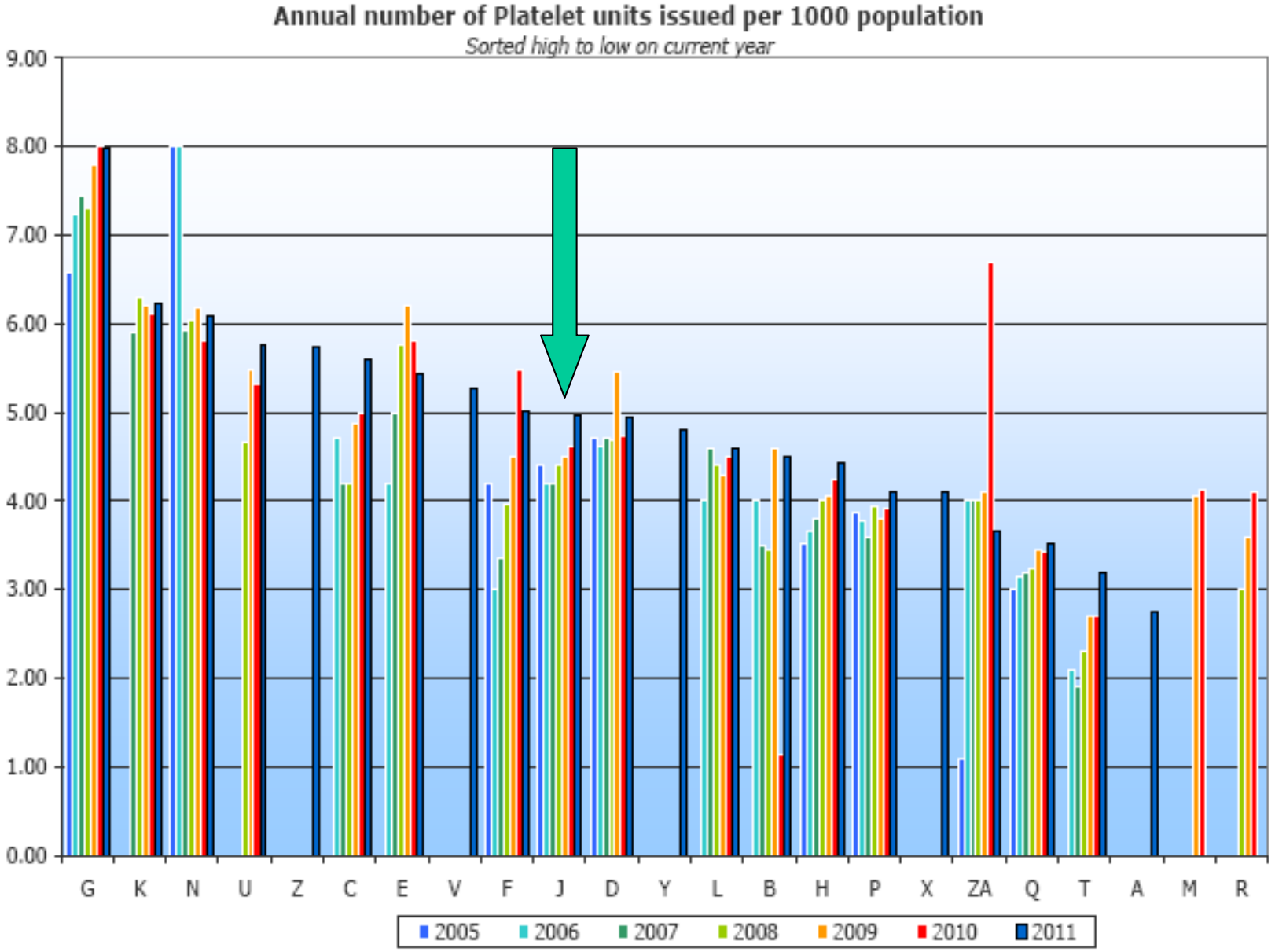
Platelet Usage in comparison with other European countries

Platelets

- NHSBT reports a rate of 5.0 ATDs / 1000 population in 2011-12
- This fell mid-range in the reported usage rates (3.2 to 8.0)


Annual number of Platelet units issued per 1000 population
Sorted high to low on current year
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
G K N U Z C E V F J D Y L B H P X ZA Q T A M R
2005 2006 2007 2008 2009 2010 2011

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What about donations?

- Is blood donation keeping pace with issue?

Long term trend in active donor numbers

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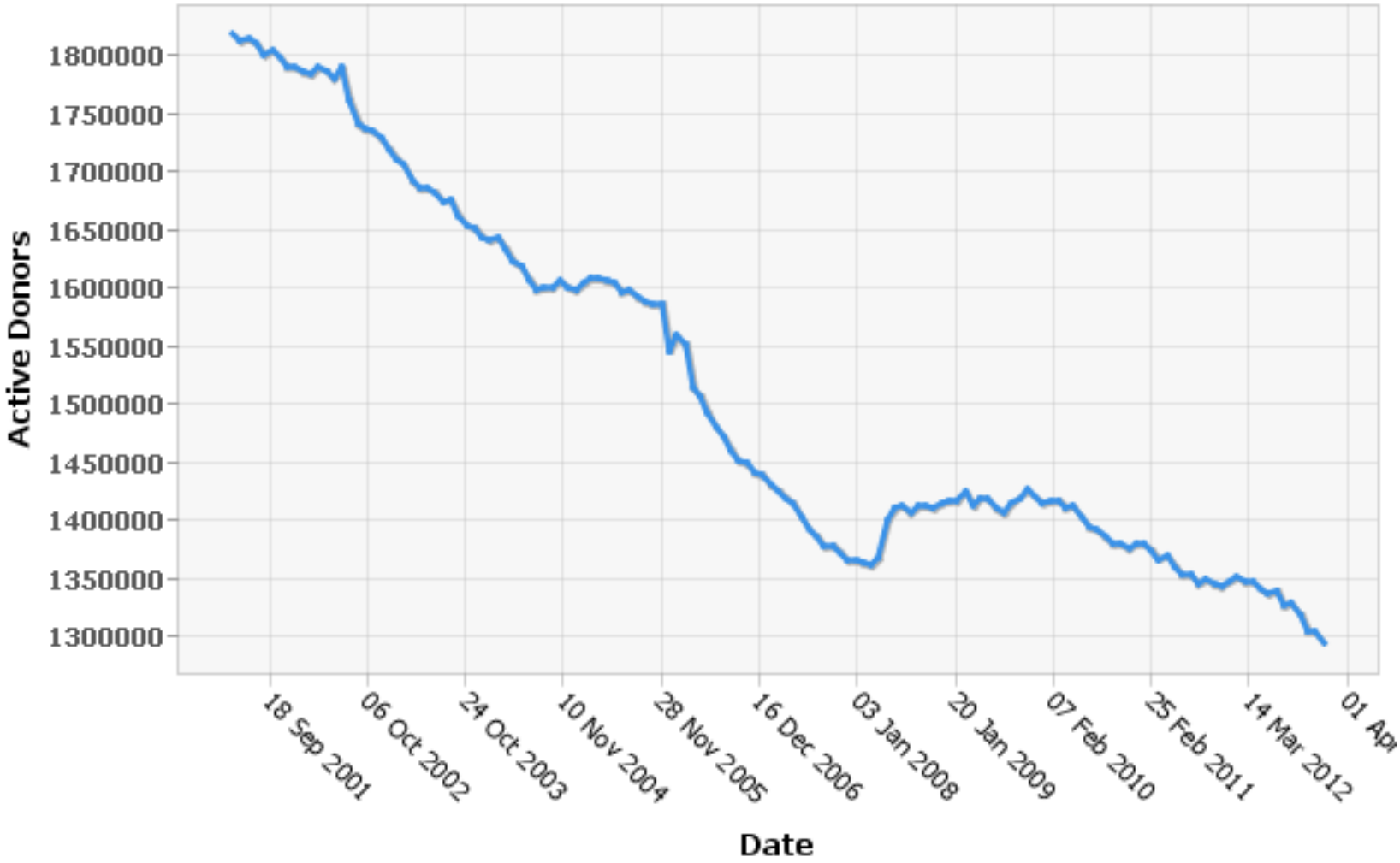

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Demographics

- Demand Driver Parameters used in model Projections:

Contributory factor: RBC Demographic effects	**1 year** 1.3% increase	**3 years** 4.3% increase	**10 years** 15.9% increase
Changes in the rate of procedures / treatment per 100,000 population	1.0% increase	3.0% increase	10.3% increase
Changes in the average red blood cell use per procedure / treatment assuming a power-law fit.	2.5% decrease	6.7% decrease	16.3% decrease

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Demand Predications

- Clinical demand for all main blood components is expected to increase especially for:
  - O neg red cells
  - Platelets
  - Cryoprecipitate

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So.....

- Demand is increasing....
- Donor base is declining....

Where is all that blood going?

Red blood cell usage

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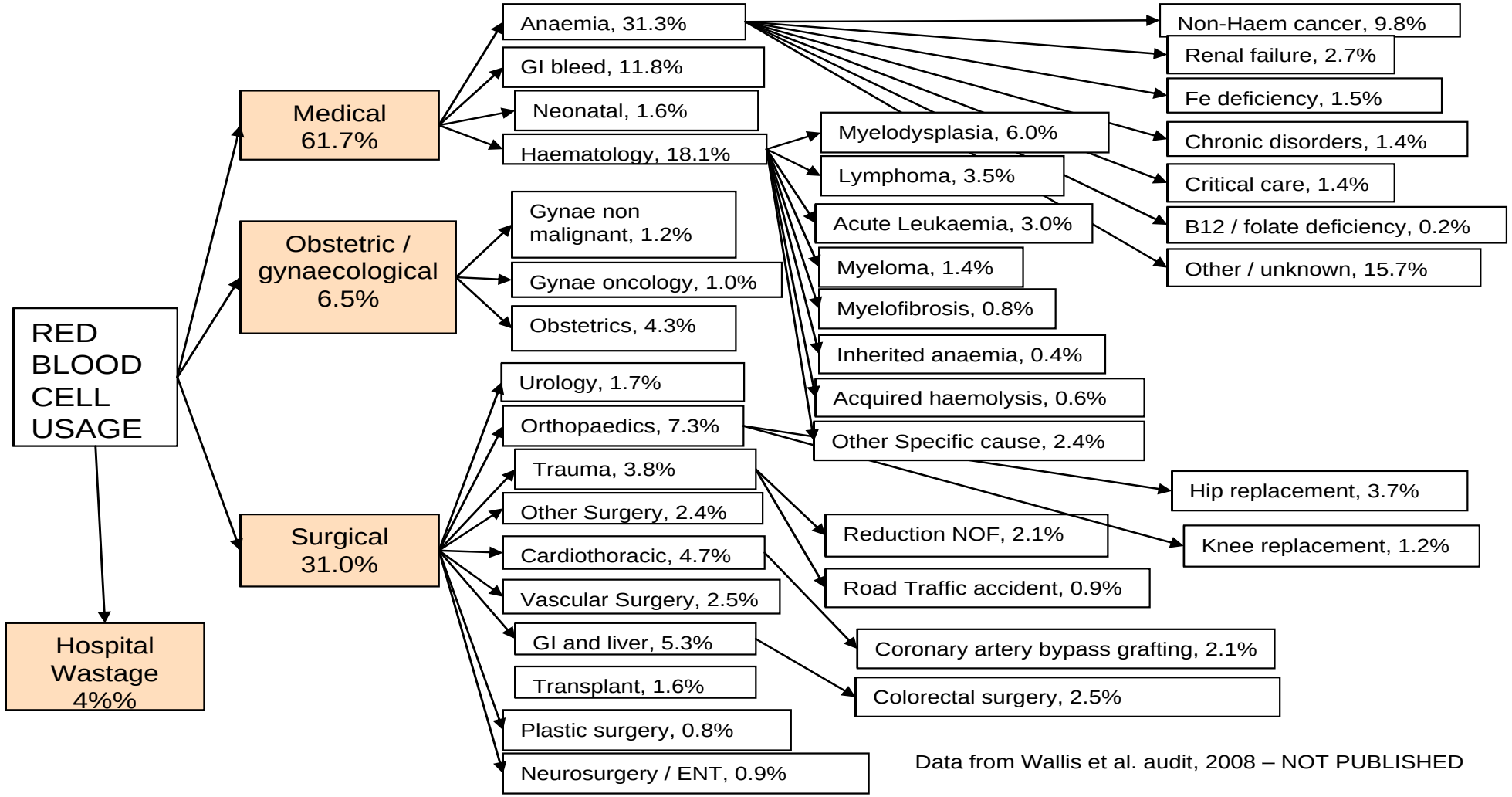

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Do we need all that blood?

- Are we using it appropriately?
- Are we wasting any?

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What do audits tell us about inappropriate use?

15 – 62% inappropriate

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Title	Year	Number of hospitals	N cases audited	Inappropriate use
Red cells in hip replacement	2007	139/167 (83%)	7465	48% patients
Upper gastrointestinal bleeding	2007	217/257 (84%)	6750	15% of rbcs, 42% of platelets, 27% of FFP
Red cell transfusion	2008	26/56 (46%) hospitals in two regions	1113	19.5% of transfusions
FFP	2009	186/248 (75%)	5032	43% to adults, 48% to children, 62% to infants

Title	Year	Number of hospitals	No. cases audited	Inappropriate use
Platelets in haematology	2011	139/153 (91%)	3296	27% of transfusions
Cryo-precipitate	2012	43/82 (52.4%) from 3 regions	449	25% of transfusions
Red cells in Adult Medical Patients – Part 1	2012	197 from across UK	9126	20% of cases had a possible potentially reversible anaemia. Transfusion was started above the agreed audit haemoglobin standard in 35% of patients with anaemia and 6% of patients with blood loss. 33% of patients were transfused to >2g/dl above the agreed audit standard. Overall, 53% of cases fell outside the algorithm set

What about wastage?

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In NHSBT in 11/12:

- 19,600 units of rbcs wasted (1.1% of issues)
- 14,400 units of platelets wasted (5.4% of issues)

In hospitals:

- 39,600 units rbcs wasted (2.2%)
- 10,700 units platelets (4%)

The highest wastage occurred in the Medically Ordered Not Used category, at almost 50% of the total wastage.

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NHSBT Commercial Review 2011

Recommendation 1

'More work should be done both at national and trust level to support trusts, in achieving and maintaining best practice, to reduce the inappropriate use of red cells, platelets and fresh frozen plasma;
this would improve patient care and reduce costs to trusts and would in turn reduce demand and direct costs on NHSBT'.

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NHSBT Strategy

'To deliver a modern, world class blood service that provides a sustainable and dependable supply of blood components that meet all safety, quality, compliance and service standards, as effectively as possible.'

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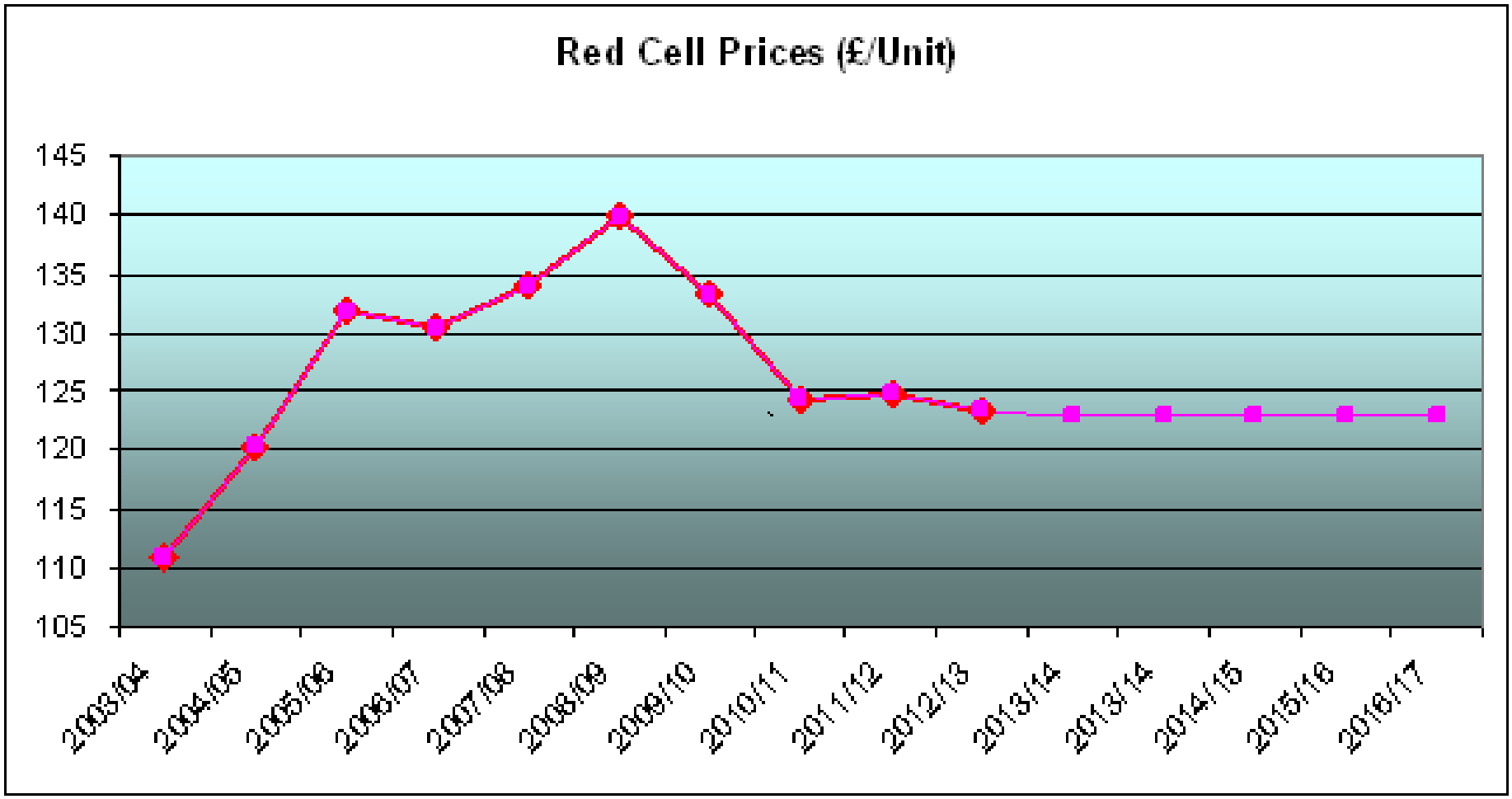

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Safety / Minimising risks

- Blood transfusion has a chequered history
- No clear consensus for many aspects
- Costs rising
- New safety measures expensive
- Inspection and regulation
- Blood services need to constantly assess new risks

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What do we tell patients?

- 'The risk of getting hepatitis from a platelet transfusion in the UK is about 1 in 1 million for Hep B and 1 in 72 million for Hep C. The chance of getting HIV is about 1 in 6 million.'

OR.....

- 'You are more likely to die in a gas incident (fire, explosion or carbon monoxide poisoning) than to get Hep B from a blood transfusion.'

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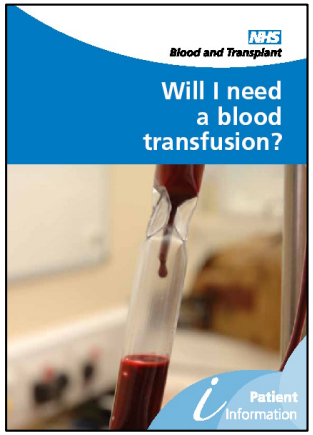
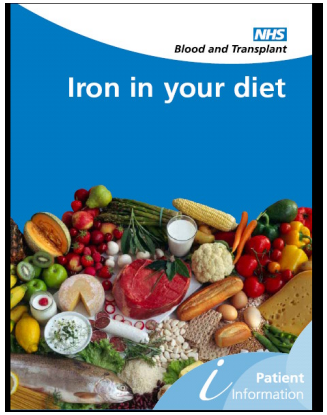
Public and Patient Involvement



SaBTO

Consent for Blood Transfusion
Standard Recommended by SaBTO



Please ask

about CELL SALVAGE

Jeff underwent his resurfacing surgery and received autologous cell salvaged blood. He did not require donor blood and recovered remarkably quickly returning to his managerial position at the head of a busy accident repair centre. He also continues with his active lifestyle golfing, fishing and looking after his grandchildren.

Which patients could benefit from cell salvage?
Patients having certain operations e.g. cardiac (heart) surgery. Cell salvage may reduce the amount of donor blood they need.

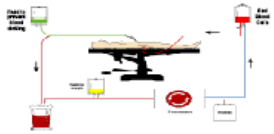
Patients who do not wish to receive blood from a blood donor.

Why isn't it suitable for everyone?
Not all operations result in enough blood loss to enable cell salvage to be used. For some operations cell salvage is not recommended e.g. some bowel surgery.

Where can I get more information?
Ask your hospital doctor or nurse if cell salvage is available in your hospital.

If it is, your doctor or nurse will be able to advise you if it is suitable for you and for the operation you are having.

For further information about cell salvage visit:
www.transfusionguidelines.org.uk/ics/index.htm



Blood collected after your operation. This is called Postoperative Cell Salvage
Sometimes blood that is lost immediately after your operation can also be collected and returned to you (usually when you are back on the ward). This is called postoperative cell salvage and is usually used after certain operations e.g. knee surgery.

What are the benefits of cell salvage?
During certain operations you may lose some blood. Cell salvage can reduce the chance that you will need a transfusion of blood donated by a blood donor. This therefore reduces the very small risks associated with receiving this type of blood.

Right Patient, Right Blood

http://www.blood.co.uk/about-blood/information-for-patients/

Avoidable headlines

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The Telegraph

“Killed by a needless blood transfusion”

Judy Kenny, whose husband was the first to die from vCJD contracted via a blood transfusion, is campaigning for tighter controls over the procedure

'To this day I don’t know why Deryck needed that transfusion’ – Judy Kenny at home in Bournemouth, with a picture of her late husband Deryck
15 Oct 2012

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What other challenges are there for the blood supply?

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Supply Chain Challenges

- Logistics / Transport - including ad hocs
- 24/7 working
- Vehicle and lab machines under-utilised
- Blood collection sessions
- Diminishing resources
- Consolidation

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What are the future plans for the blood supply?

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Blood Donation Strategy

- Blood donation
  - Need to attract sufficient donors to meet the future demand
  - 'Digital natives'
  - Club 96
  - Migration

21st Century - Combining the kindness of strangers with tough economics

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Improve Supply Chain Planning

- Reduce waste
- Optimise inventory levels across the supply chain
- Reduced age at issue
- Optimise intra-centre transports
- Improve forecasting
- Reduce substitutions
- Increased customer satisfaction

Really find out where blood actually does go!

- Need timely data of transfusion recipients for future planning and targeting of major users for appropriate blood-saving strategies.
- Targeted audits of appropriate use with effective action plans.

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Pathology Modernisation

- Reduce costs / consolidate / create pathology networks or hub and spoke systems
- ITS in NHSBT:
  - shared stock management systems
  - automatic replenishment systems
  - integrated transfusion laboratories

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Reduce Inappropriate Use

Better Blood Transfusion → Patient Blood Management

- **Patient** - at the heart of decision making
- **Blood** – conserve patient's own blood, avoid transfusion where appropriate
- **Management** – organise and co-ordinate

3 Key Messages

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- Blood supply in UK may not always be plentiful
- Need to reduce waste across the supply chain
- Involve the patient and use blood appropriately

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Thank You

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