Poole Hospital NHS
NHS Foundation Trust

The 'Blood' Budget: how can we reduce costs and influence best practice?

Sue Redfearn

Blood Transfusion Manager

Poole Hospital NHS Foundation Trust

Poole Hospital ‘vital statistics’

- 680 beds 2011 (reduced to 518 2012)
- Population served : approx 300,000
- Major Incident hospital
- Obstetric, Gynae and Neonatal specialties
- No Cardiac, Arterial or Renal specialties
- Supplies 5 community hospitals and 1 private hospital with blood components and transfusion training

Workload:

- 2004-5 total Group and Save samples : 24200
- 2011-12 total Group and Save samples : 29500

Poole Hospital Blood Budget

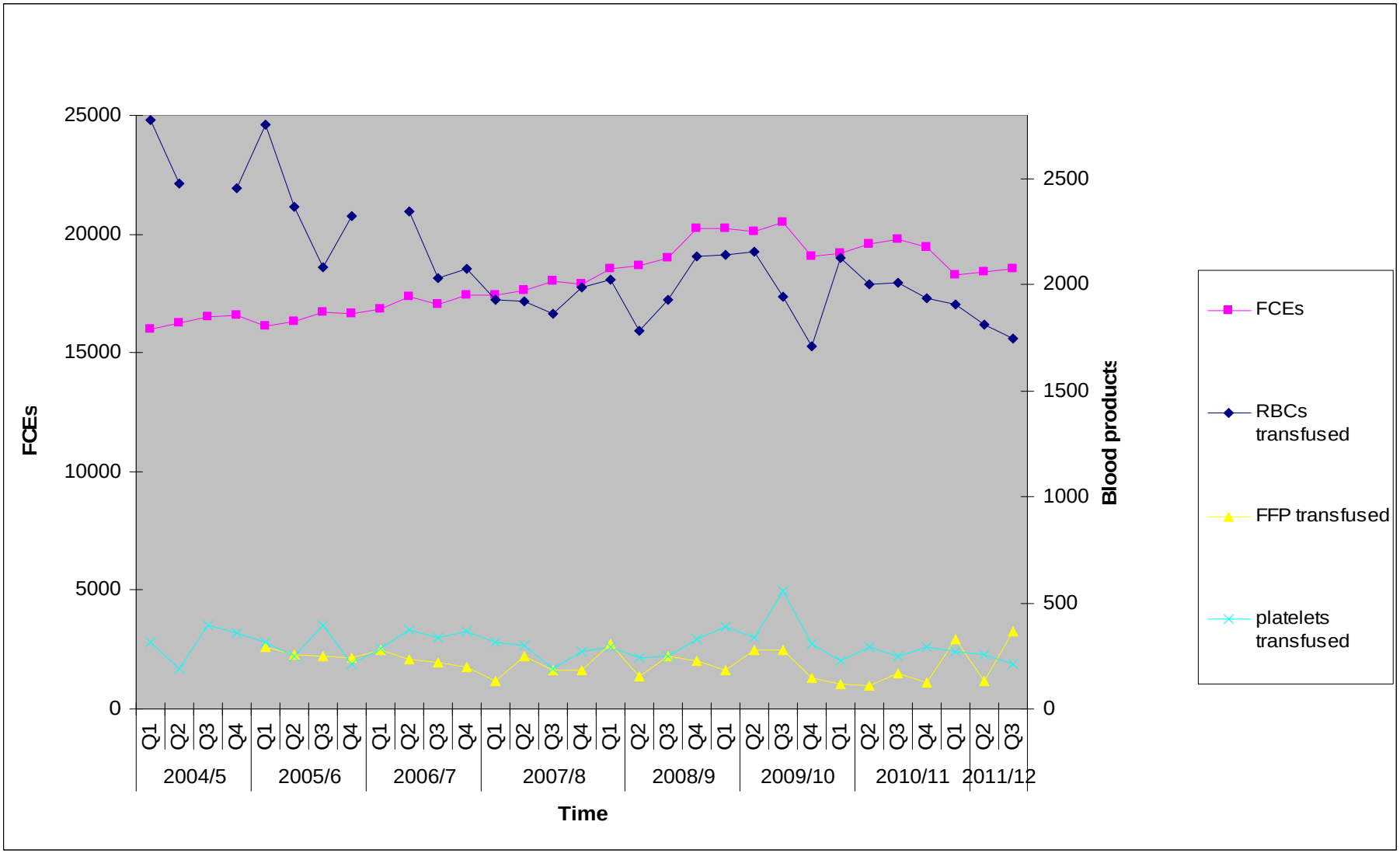
- 2007/8- £1,464,500 Spent
- 2008/9- £1,468,100 Spent
- 2009/10- £1,546,737 Spent

Trends showed that blood component usage at Poole had stabilised but on the way back up. Previous to 2008 our max spend was approx £1.8 million.

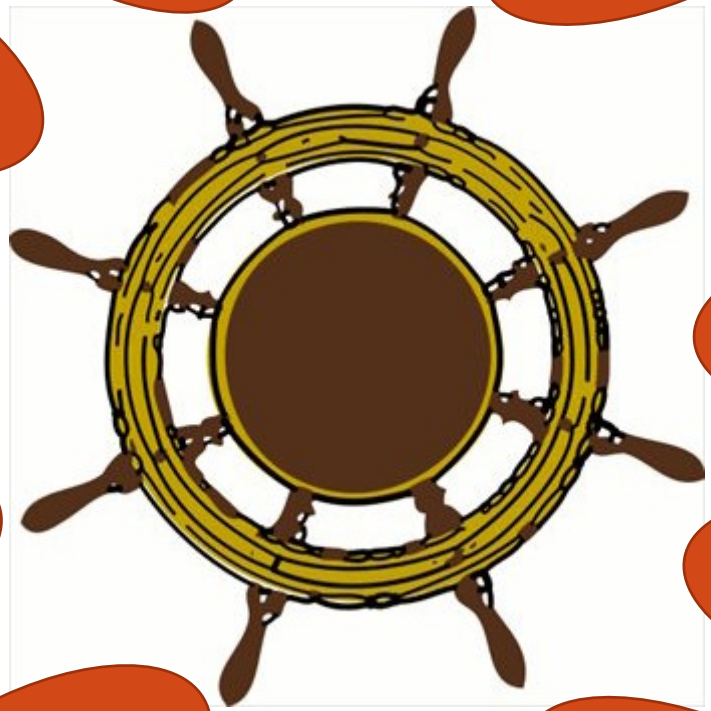
- 2010/2011- £1,319,701 Spent = Saving of £202,000
- 2011/2012-£1,176,153 Spent = Saving of £144,000

How did we achieve these savings?...

First Finished Consultant Episodes and blood components transfused



Saving money is, as always, a multi pronged approach



- Training and education
- Cell Salvage
- Ideas from 'outside the box'
- Pre-op anaemia screening
- Laboratory savings
- Supply on Demand
- Specialty usage figures
- Blood Product questionnaires
- Major Haemorrhage policy
- Wasted product

Review of Trust Blood Policy

- Blood policy review was due Nov 2010
- HTT met with each specialty HTC rep and clinical lead.
- Reviewed their practice and need for transfusion support.
- Re-visited Hb triggers and introduced targets.
- Discussed alternatives to transfusion
- MSBOS reviewed
- Pre-op assessment working party set up
- Cell Salvage working party set up
- Major Haemorrhage policy review

Cell Salvage

- Set up a Cell Salvage working group lead by chair of the HTC Dr Alison McCormick included theatre manager and representatives and HTT
- Business case developed, Job Description for co-ordinator written and A4C banded.
- No additional funding : being supported from within theatre budget. Theatre already under staffed
- ODPs very keen ; cases supported when possible.
- Further training provided from the supplier.
- Cell Salvage used in Obstetrics and some orthopaedic cases.

Pre-Op Anaemia Screening

- Optimising patients Hb pre-op avoids unnecessary transfusion and reduces red cell use.
- HTT worked with pre-op assessment team.
- Implemented system for pre-op FBC results to automatically generate further tests to exclude Fe def anaemia
- Timely reporting of pre-op anaemia screen results
- Clear guidance on which patients:
  - **Require urgent surgery - Therefore transfusion may be unavoidable**
  - **Require non urgent surgery; their apparent iron deficiency is related to the planned procedure – Referral to anaemia clinic**
  - **Require non urgent surgery and anaemia is coincidental – Delayed procedure with referral back to GP for investigation**

Supply on Demand (SoD)

- HTT reviewed when blood was actually used, seldom used in theatre, mostly recovery or ward.
- Audit of procedures more likely to require transfusion; ensure 2 G&S's pre-op. Relies on Electronic issue
- HTC agreed review of MSBOS. HTT met with all clinical leads and HTC reps. SoD replaced MSBOS . G&S only
- Red cells issued on decision to transfuse. None on 'stand by' (except for high risk patients and those with red cell antibodies < 2 .0 of population)
- EI status available on EPR, checked prior to theatre.
- Better stock rotation , promotes appropriate use.

Blood Product Questionnaires: Empowering lab staff

- ‘Questionnaires’ developed for each blood product
- Helps guide staff on the recommendations of the Trust Blood and Blood Products policy
- Aim to ensure requests are appropriate both in quantity and in some cases product.
- Targets and triggers identified on the questionnaires to help lab staff when questioning requests.
- Seemingly inappropriate requests are passed to a Consultant Haematologist.
- FFP and Platelet requests agreed by a Haematologist.

Poole Hospital NHS Trust

Red Cell Request questionnaire to provide justification for transfusion

Hospital No _____Surname _____ Lab number:... ... ...

Date of request _____Time _____ Clinical staff (name) _____Bleep_____

Latest Hb _____No of units ____ Date/Time required _____

If 'low Hb' is higher than Policy "triggers", provide supportive comments to justify transfusing.

If Hb higher than Policy "triggers" and rationale for red cells unclear - refer to AJB, FRJ or RM.

Select reason for request	Policy Hb "Triggers"	Y/N	Supportive comments
Patient bleeding	2-4 units depending on Hb		
Acute Upper GI Bleed	See table: QMS-DOC-83266v1.0		
Clinically unstable	Keep Hb >100 g/l		
Cardiac/cerebral disease	>Hb 80 g/l		
Oncology patient	Maintain > 110 g/l		
Chronic anaemia (? Cause)	Maintain > 80 g/l		
Critically ill –	Maintain > 80 g/l		
Pre-op – state op	Maintain > 100 g/l		
Post –op – state op	Transfuse < 80 g/l		

Full XM ☐ or EI ☐

Lab staff initial_____ Referred: Y/N Agreed/ Not agreed (tick) Lab ☐ AJB ☐ FJ ☐ RM ☐

Evidence	For acute controlled blood loss	Transfuse if >1500 ml
Suggests:	For acute uncontrolled blood loss	Maintain Hb >100 g/l
Stable patients	Hb 70-80 g/l - issue 1 unit, re-asses	Hb 60-70 g/l - issue 2 units, re-asses

Assume 1 unit raises Hb by 10 g/l

Higher Hb triggers may be necessary for: elderly/cardiac/respiratory/very symptomatic patients, document above.

Poole Hospital NHS Trust Plasma Product Request questionnaire

Hospital No _____ Surname _____ Lab number:... ... ...

Date of request _____ Time _____ Clinical staff (name) _____Bleep_____

Product _____No units requested_____ Date/Time required_____

Reason for request_____

Plasma Request	**Y/N**	**INR result..... FIB result.....**	**Comments**
Major bleeding		Clotting screen (CS) essential, thaw 2 units of FFP at a time, confirm usage before thawing more, suggest repeat CS, aim for INR <1.5	
Clinically unstable			
Has patient been transfused			
INR >1.5 On Warfarin		**Refer to SPR/AJB/FJ if necessary**	
No bleeding		Suggest Vit K only, if necessary	
No bleeding but pre-op		Suggest Vit K if time permits, refer SPR/AJB/FJ	
Major Bleeding **Always refer** to SPR/AJB/FJ		Consider FFP Beriplex plus Vit K	
INR >1.5 NOT on warfarin		? cause–Refer SPR/AJB/FJ	
INR <1.5 no other indication for request of FFP given		? reason for request – clinical referl SPR/AJB/FJ	

Lab Staff initials_____ Referred Y/N Agreed by (tick) Lab staff ☐ AJB ☐ FJ ☐ SPR ☐

Cryo/Fibrinogen Conc (Haemocomplettan P) – refer to AJB/FJ for correct dose if Fib<1.0 g/l in adult.
NovoSeven must be agreed with AJB/FJ aim for platelet count >50 x 10^9/l and fib >1.0 g/l to be effective.

Poole Hospital NHS Trust Platelet Request questionnaire

Hospital No _____ Surname _____ Lab number:... ... ...

Date of request _____ Time _____ Clinical staff (name) _____ _____Bleep_____

Product _____No units requested_____ Date/Time required_____

Reason for request_____

Platelets Request	**Y/N**	**Platelet Count..... Date.....**	**Comments**
Patient NOT bleeding		? reason for request – refer SPR/AJB/FJ	
Patient bleeding		Maintain >50 X10^9/l & confirm with SPR/AJB/FJ	
On anti-platelet therapy		Refer SPR or AJB/FJ	
Platelet function abnormal		Refer to SPR/ AJB/FJ	
Oncology patient		<10 no bleeding,<20 at risk of bleeding	
Pre-op – (what op/date)		>50 X10^9/l	
Post/peri –op (what op)			
Liver biopsy/epidural		>80 X10^9/l	
Brain,eyes,CNS ops		>100 X10^9/l	
ITP patients rarely transfused – refer AJB/FJ		**Octoplas- used for plasma apheresis for TTP patients Refer to FJ/AJB**	

Lab Staff initials_____ Referred Y/N Agreed by (tick) Lab staff ☐ AJB ☐ FJ ☐ SPR ☐

Wasted Product Follow Up

- Lab staff challenging seemingly inappropriate requests seems to have helped with wastage figures.
- Trust Adverse Incident form completed for all wasted blood components.
- Platelets not used allocated to other patients when possible by discussion with haematologists.
- Platelets and FFP medically ordered and not used followed up by the TP with the intension of:
  - Finding the reason for not using
  - Reminding medical staff that a product has been wasted

Major Haemorrhage Policy

- Major haemorrhage policy updated; combined RED BOX and Trust policy. Introduced an Alert to switchboard: immediate calls to porters, haematologist and lab
- Major Haemorrhage pack introduced : 4 RBC's and 3FFP.
- All cases reviewed for appropriate use of alert and components.
- Any component not used or wasted followed up by the HTT
- Obstetric cases : FFP being wasted
- Policy reviewed :
  - Pack 1 = 4 RBC's only
  - Pack 2 = 4 RBC's and 3 FFP
- Less wastage of FFP on-going review of every case

Date of call	Time of call	Agreed time RBC's available	Lab staff name	Clinician & Location
/ /	:	:		/

Patient Information	Surname	Forename	Hospital No	DOB

Sample(s) Haem	Sample in lab Y/N	If No; Time Rec'd in lab	Mode of transport	Time Authorised	Result(s)
Pre FBC		:		:	
FBC (subsequent)		:		:	
Post FBC		:		:	
CS (baseline)		:		:	
CS (subsequent)		:		:	

Sample(s) GS	Sample in lab Y/N	If No; Time Rec'd in lab	Mode of Transport	EI Y/N	Antibodies +/or Special requirements
1st sample Lab no:		:			
Further sample Lab no:		:			

Major Haemorrhage pack	Time issued in T-Path	Time issued in Traklogik	Time collected	Time units used
RBC X4	:	:	:	1) 2) 3) 4)
FFP X3	:	:	:	1) 2) 3)

Further RBC's requested	No of units	Time issued T-Path	Time issued Traklogik	Time collected	Time units used
Time :		:	:	:	1) 2) 3) 4)
Time :		:	:	:	1) 2) 3) 4)
Time :		:	:	:	1) 2) 3) 4)

Further FFP requested	No of units	Time issued T-Path	Time issued Traklogik	Time collected	Time units used
Time :		:	:	:	1) 2)
Time :		:	:	:	1) 2)

Specialty usage figures

- Figures on:
  - Usage per specialty
  - Wastage per specialty
  - And financial cost of both
- Previously published for HTC meetings
- Since Jan 2012 sent to HTC reps and clinical leads for discussion and review of practice at appropriate Clinical Governance meetings.
- Feedback/ discussion at the HTC meetings
- HTC reps and clinical leads well informed that Service Line Reporting will be implemented to include “on” costs.
- Support for saving money : eg cases of acute upper GI bleed

Guidance notes for red cell use in patients with acute upper GI haemorrhage

Please use the table below to determine appropriate cross-match requirements, which aim for a post-transfusion [haemoglobin] in the range 90 – 100g/l. Dr Snook has asked that laboratory staff challenge any request for this patient group which does not comply with these recommendations. In difficult cases, the on-call endoscopist would be happy to advise.

[Haemoglobin] (g/l)	**Not** shocked and **no** suspected varices	Shocked and / or suspected varices
100 +	0	0
90 - 99	0	2
80 - 89	1	3
70 - 79	2	4
60 - 69	3	5
Below 60	4	6

For cases with no historic blood group and G&S only agreed, request a second sample to allow for Electronic Issue should the clinical situation deteriorate.

Approved by Dr J Snook and HTT (April 2012)

QMS-DOC-83266 v1.0 Effective 11th May 2012 Review May 2014

Laboratory savings

- Adhoc deliveries: NHSBT agreed to ‘routine’ Sat/Sun deliveries. All Ad-hoc requests monitored closely to avoid unnecessary transport costs.
- Referrals to NHSBT : kept to a minimum. 4 members of lab staff have been sent to RCI Filton to expand their knowledge
- Stock levels cut following implementation of SoD
- Oncology patient’s platelet counts monitored daily by lab staff, clinicians contacted to adjust orders when necessary.
- Stock levels and expiry dates monitored daily.

Ideas from ‘Outside the Box’

- HTC reps to audit their own practices.
- HTT to attend specialty clinical meetings.
- Participation in National Comparative Audits with feedback to ALL appropriate parties
  (nursing/ medical/ risk/ laboratory)
- Learn from colleagues in other hospitals about their improvements.
- Attendance at multi-discipline meetings/ training days to raise awareness and network.

Training and Education

- Aim: All those involved in the transfusion process should receive annual training, this includes:
  - Trust based training: induction, mandatory training
  - New medical staff in take: receive ‘Book mark’ and general lab information
  - Directorate based at Clinical Governance meetings
  - Local based training for community hospitals by TP
- Additional information on intranet:
  - Clear dates for Trust training
  - Blood and Blood Product Policy
  - Doctors handbook
  - Further ‘useful’ information available on the Pathology combined web page

Future plans

- Transfusion alternatives: keep raising awareness
- Cell Salvage: Managed by theatre staff but give HTT support
- Community and private hospitals usage: audit practice
- TEG : Business case written and submitted x2 turned down : re-visit.
- Keep raising awareness across the Trust
- Service Line reporting : cross charging. We think this might be the big one as it will hit the users pockets!

- RETIRE and go back to the Welsh hills

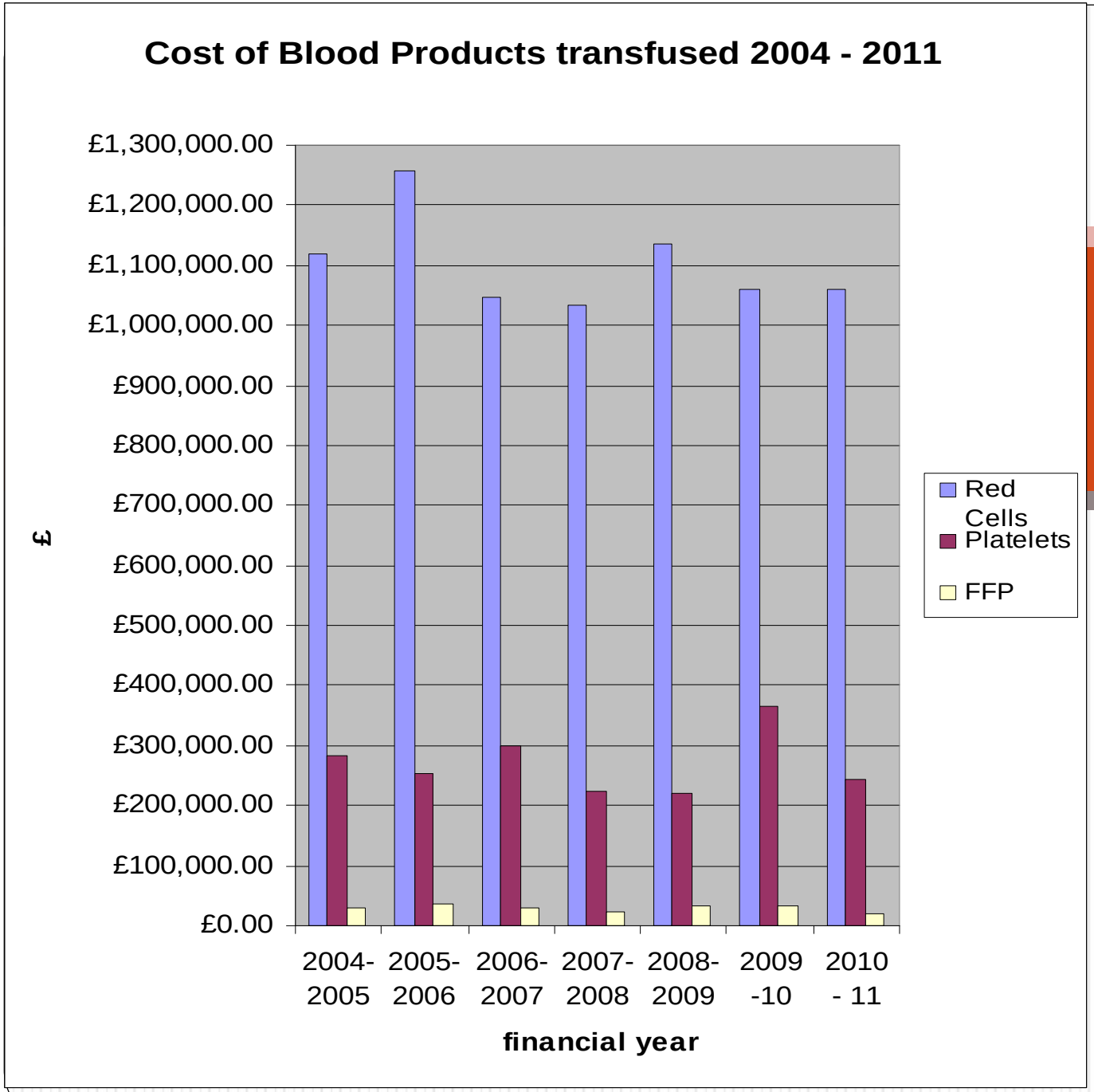
Thank you for listening

I feel that other Trusts may well have done better than us and we welcome suggestions and comments

I would like to thank Dr Alison Mc-Cormick, Dr Rebecca Maddams, Vikki Chandler-Vizard and Claire Thompson for their input and enthusiasm. Also the laboratory staff for their hard work for their continued support.

Any Questions or Comments?

Total cost of units wasted 2004-2011



Total cost of units transfused, 2004-2011