

My Role as a Transfusion Practitioner in the Management of Major Haemorrhage

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Disclaimer:

This presentation is intended to take you through our journey at PAH NHS Trust of implementing the NPSA /2010/RRR017.

It also highlights key findings from audit data collated over the past 7 years.

Key improvements are also identified since implementing these changes; although categorically we cannot state this is solely due to our change in practice but feel that it has certainly helped.



Surgical Health Care Group:-

- General Surgery & Urology
- Vascular
- Trauma & Orthopaedics
- ENT & Oral surgery
- Ophthalmology
- ITU & HDU
- Theatres and Day surgery Unit

Family & Womens' Health Care Group:-

- Neonatal Intensive Care Unit
- Paediatrics; –
 - Paediatric ED & HDU facility,
 - Paediatric ward
- Maternity :-
 - ANC, MFAU
 - Birthing Unit, Labour Ward – (2 theatres)
 - Pre & Post Natal Care wards



DGH
500 beds



Medical Health Care Group:-

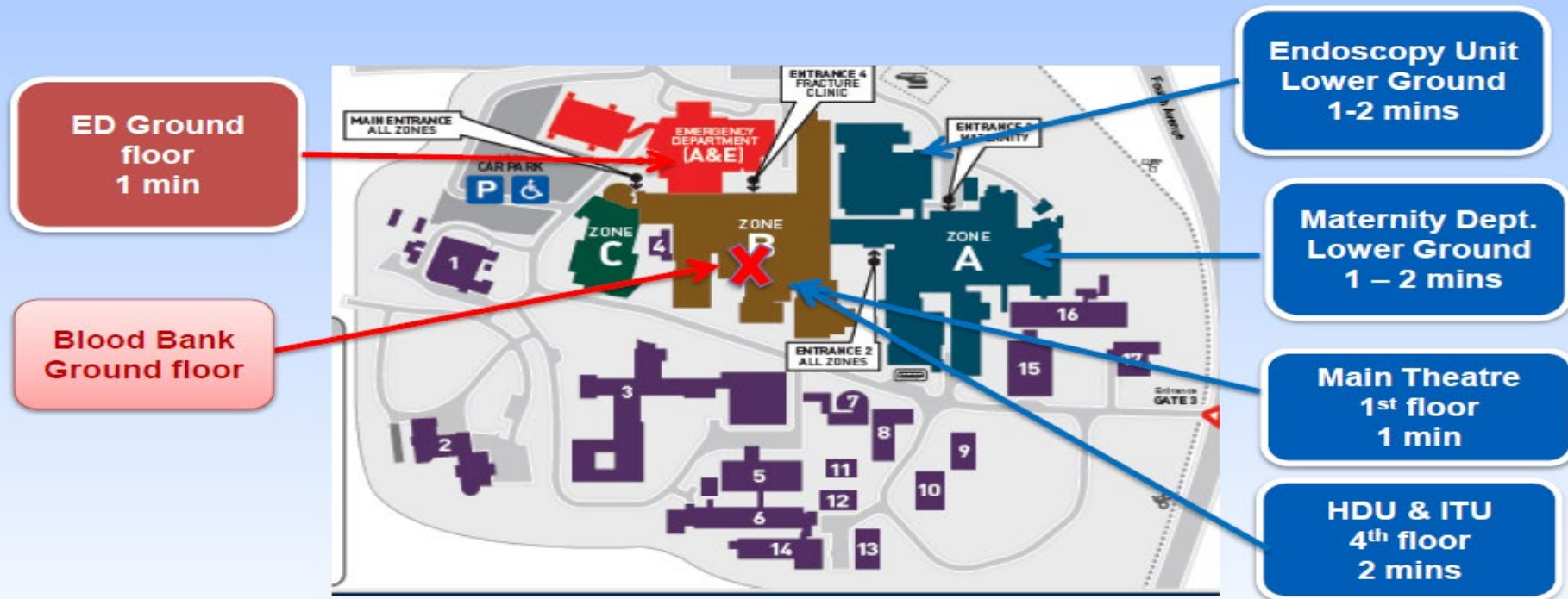
- Emergency & Ambulatory Care
- Short Stay Assessment Unit
- General Medicine
- Elderly Care, Stroke Unit, Fractured Hip Unit
- Endoscopy Unit

Cancer, Cardiology & Clinical Services:-

- Haematology & Oncology Day Unit,
- Radiology – including IR
- Cardiology:-
 - Inpatient ward,
 - Angiography Suite



Access to the Emergency O neg fridge



2nd Group check sample bottle

Introduced Sept 2012



**TRANSFUSION
MEDICINE**

Official Journal of
the British Blood Transfusion Society

Transfusion Medicine | GUIDELINES

**Guidelines for pre-transfusion compatibility procedures
in blood transfusion laboratories***

British Committee for Standards in Haematology



2012 Part of the Regional Trauma Network

Already part of the Regional Vascular Hub



Generic Patient Warming Equipment

Introduced in 2013

- Audited patient warming equipment across the Trust
- Engaged with the company who supplied Theatres with their equipment
- Free equipment for key areas where bleeds occurred
 - ✓ Theatres
 - ✓ ED Resus
 - ✓ Paediatric Resus
 - ✓ Labour Ward Theatres
 - ✓ Endoscopy
 - ✓ ITU & HDU
- Company Rep support with training
- Supply incentives to staff who attend



Your **future** | Our **hospital**



Findings:-

- Poor early recognition of Major Blood Loss
- Ineffective immediate interventions
- Ineffective communication

Recommendations:-

- ✓ Local policy/protocols
- Discussion at HTC
- MBL event investigation/audit
- ✓ Trigger tool
- Training & regular drills



1. Devised a Laboratory MBL Communication Activation Form (MBL CAF) and MBL Audit tool
2. Attended MBL events when on duty
3. Retrospective data review - Laboratory log book, MBL CAF (**6 units of RBC within 24 hour period**), patient records, tests & investigations, LIMS, Clinical IT systems

Age, gender, admission type, presenting complaint, PMH, PSH, medication, blood loss volume, outcome & length of stay

**Activation & communication,
early interventions & treatments,
medications / reversal agents,
frequency of blood sampling,
blood levels within parameters,
knowledge & understanding**

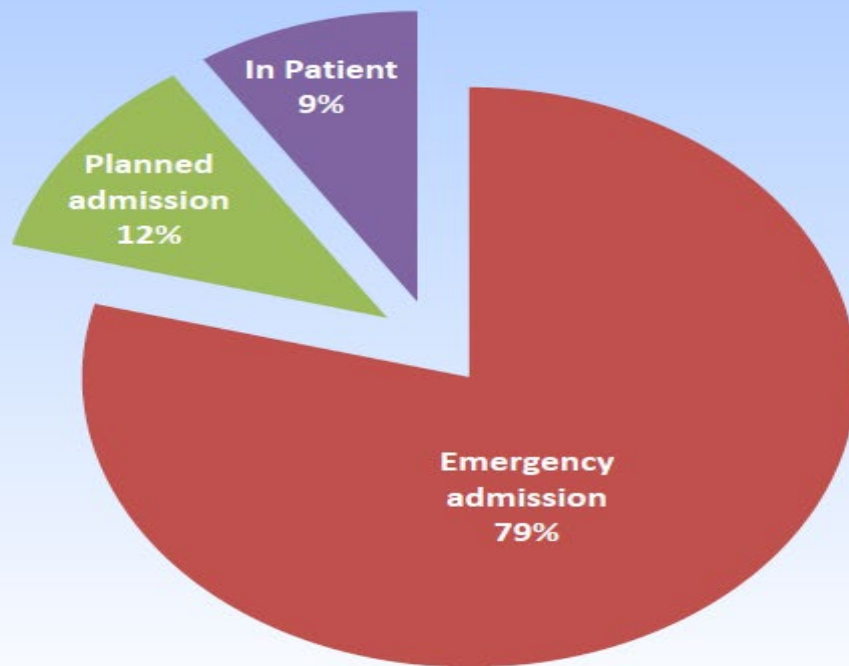
Activation & communication, 2nd sample check required, queried - TXA given , patient was on AP & AC medications, time taken to process samples, appropriate use of blood / blood products, knowledge & understanding, cost of products & wastage

Patient outcome
Blood cost / wastage
Bed usage – ITU / HDU stay

[illegible]

Audit findings for 2011

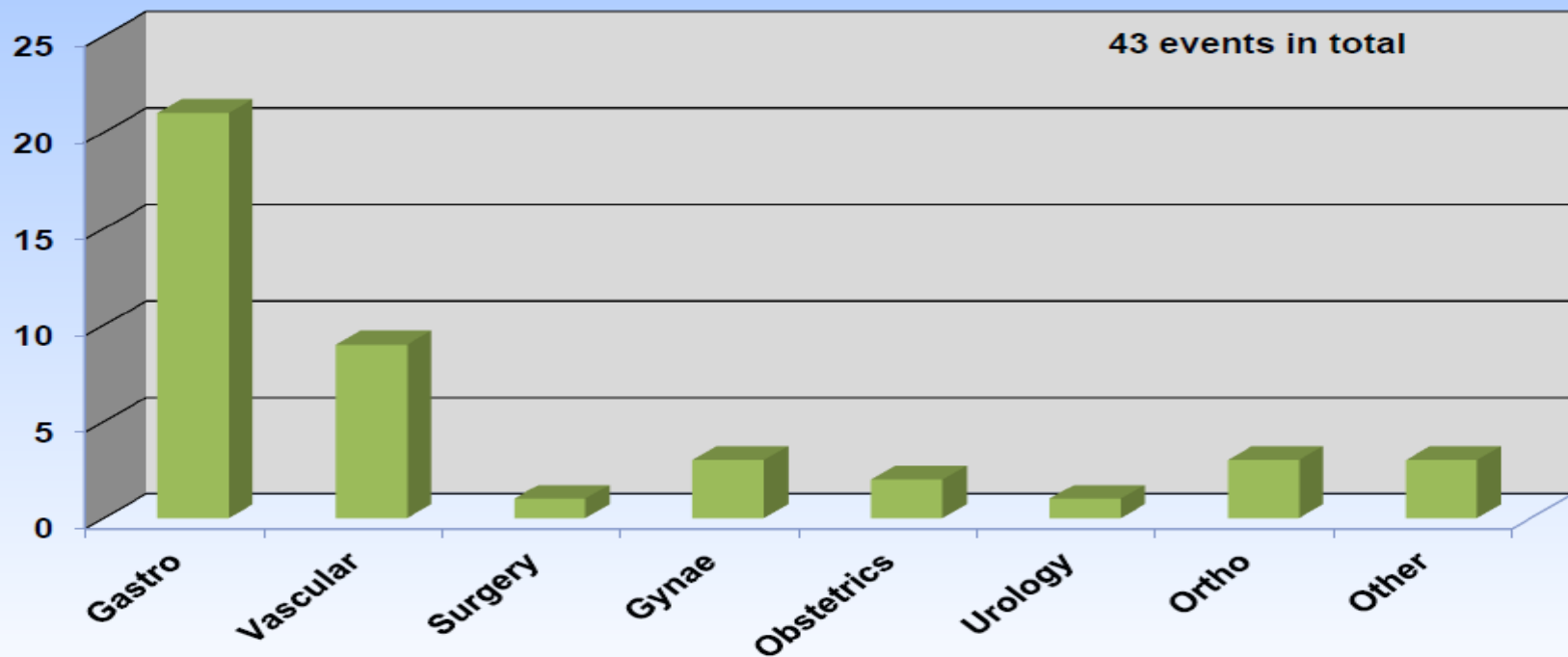
Type of admission



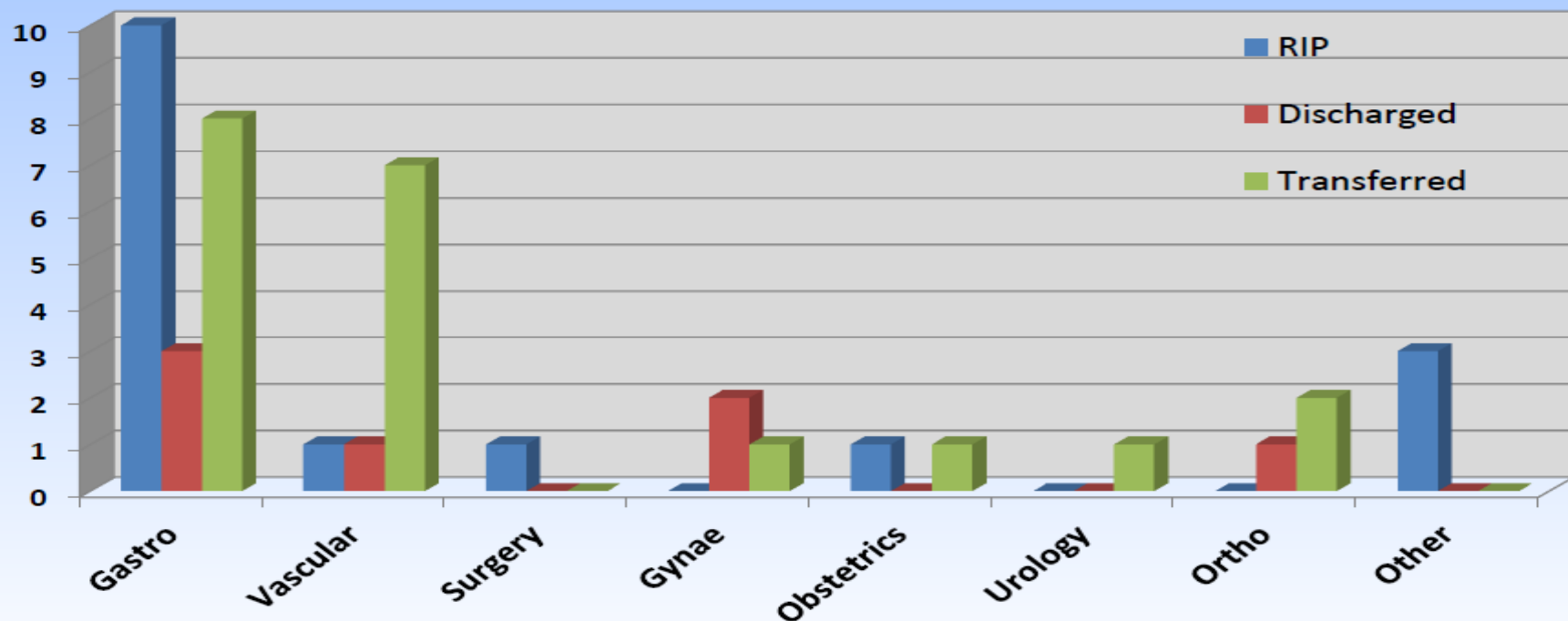
Activation and communication

- 43 MBL events - 6 units of RBC within 24 hour period
- 9/43 = activations calls made (21%)

Audit findings – who is bleeding?



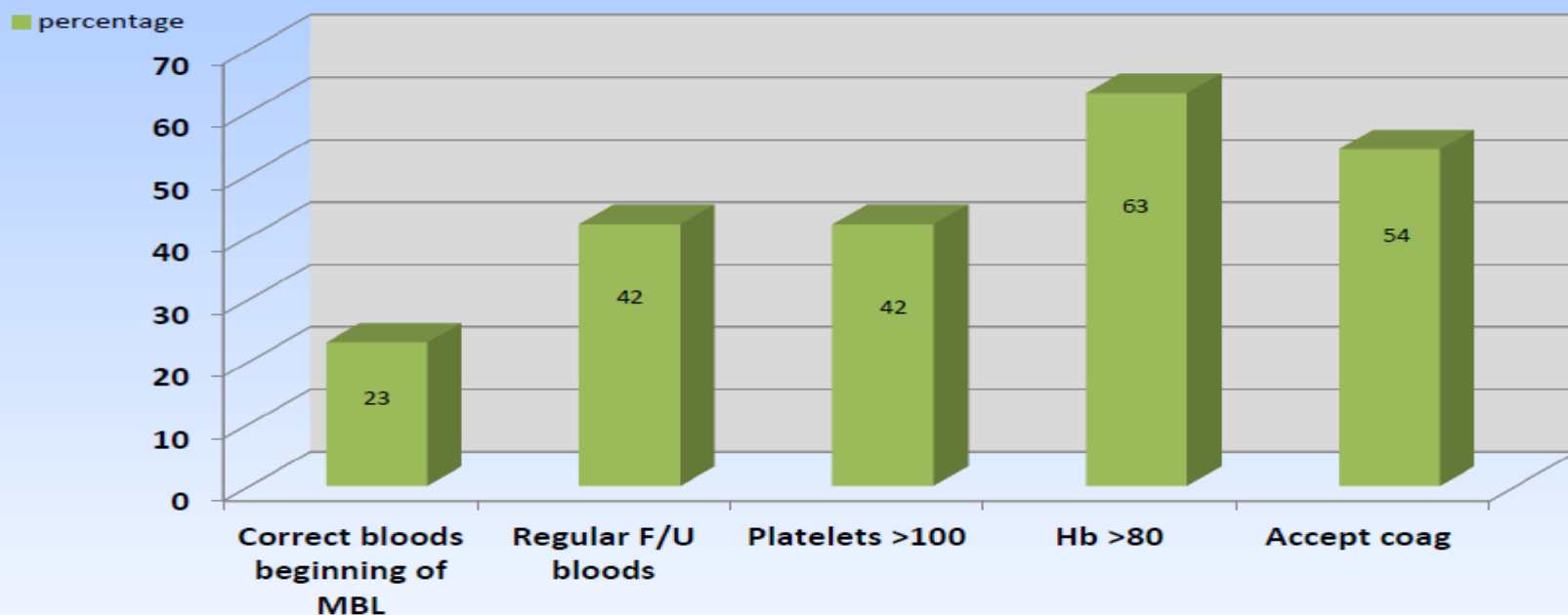
Patient outcome



20/43 (47%) patients died



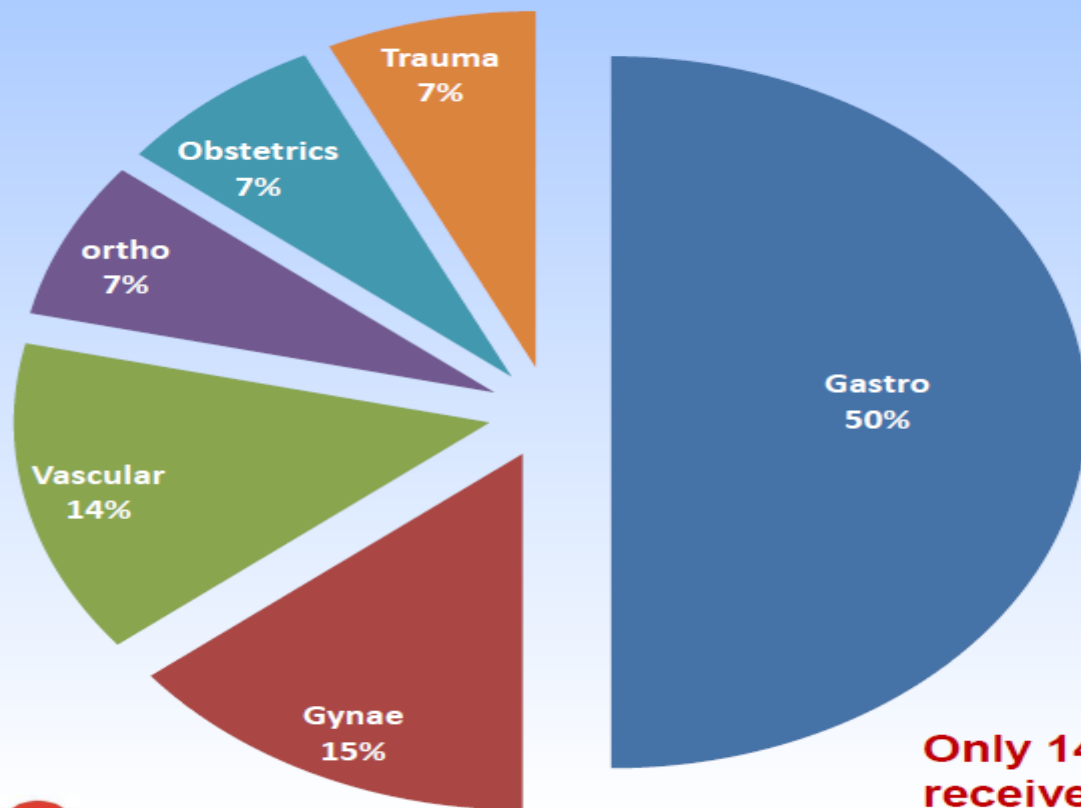
Audit Findings for the 1st year



7/43 (16%) - patients received O neg units



Tranexamic Acid usage



**Only 14 / 43 patients
received TXA (33%)**

Key themes identified

Patient:-

- Delay in care and treatment
- Delay in referral to specialist
- High mortality rate for Gastro patients

Laboratory:-

- Unaware of the urgent clinical situation
- Unnecessary amount of calls to the Lab and to clinical areas

Clinical:-

- Low number of activation calls
- Poor recognition , escalation , knowledge & understanding of MBL and protocols surrounding activation , blood products and sampling
- High Mortality rates (47% of total number of events, of which 48% were Gastro patients)
- Reversal agents missed / not given in a timely manner for Warfarin
- TXA was only given in 33% of events

Trust:-

- High blood usage and wastage
- High local incident reporting
- (5 DATIX incidents reported for 1 MBL event)
- High mortality rates

Good points

- ✓ Established key stakeholders
- ✓ Identified key areas where events occur
- ✓ Identified current activation tool was too wordy and not easy to follow in an emergency situation
- ✓ Raised TP & BT lab profile with Clinicians and other staff
- ✓ Increased TP knowledge & skills, gauged a better understanding of clinical pressures
- ✓ Increased Laboratory staff knowledge of clinical processes and pressures with having TP involvement
- ✓ Lab and clinical staff stated it was beneficial to have TP attending clinical area:-
 - ✓ Aware of what was happening including de-escalation
 - ✓ Blood samples & products
 - ✓ Reversal treatments



Next steps

- We added TP and lab to the Major Haemorrhage and Trauma activation call system
- Adapted EoE RTC algorithm (we do not issue packs) & presented it along with our audit findings to the Trust Board and Clinical staff
- Devised 3 x Reversal algorithms for anti-coagulants
- MBL training & dissemination of audit findings:-
 - ✓ Blood Transfusion training updates
 - ✓ MBL SIM Training for junior Doctors
- Ad hoc training on wards for MBL procedures & PCC administration
- Lab issue PCC for patients on Warfarin and DOAC's in the event of:-
 - Urgent immediate surgery / Procedure
 - Major Haemorrhage(Consultant Haematology approval only required for DOAC's)
- MBL audit regular item on HTC agenda



Key issues identified :-

- Staff were not seeing the treatments altogether to understand all the elements on how to treat major haemorrhage
- We required a patient centred focus
- We needed a joined up MDT approach which included Laboratory staff; to promote better understanding of clinical and laboratory roles, and to embrace Laboratory staff as part of the wider team
- Debrief was a bit hit and miss
- Specialty specifics needed to be incorporated





Joined up approach to Major Blood Loss

Introduced November 2013



TRAINING

NHS

The Princess Alexandra
Hospital
NHS Trust



Pre MBL knowledge
quiz



- Simulation of an Serious Incident event
- Debrief using questions in quiz



Guess the blood loss
Work station



Beriplex PCC
Work station



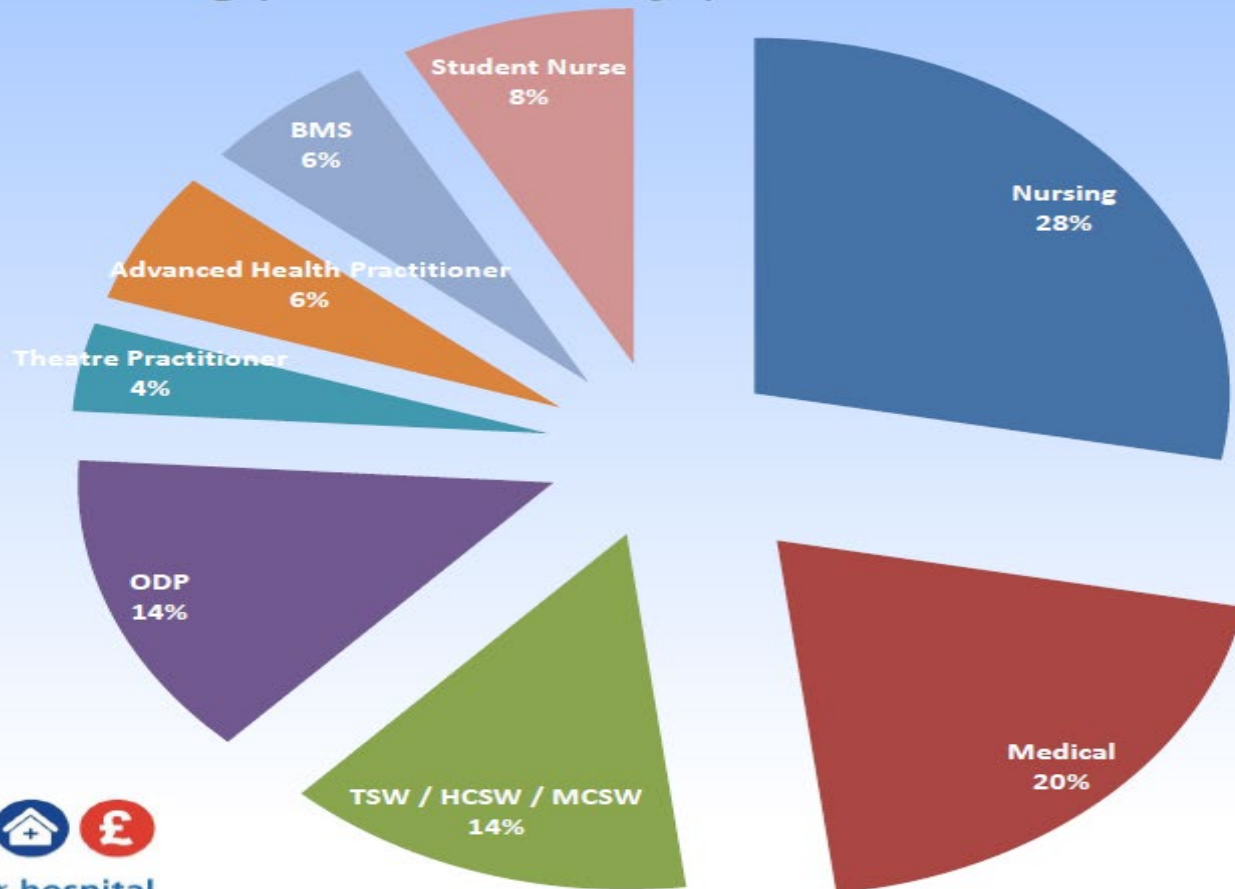
Patient warming workstation



Your future | Our hospital

Staff in attendance

MBL training (Theatre audit days)





Introduction of Simulation Training

The Princess Alexandra Hospital NHS Trust

This course is a bit SPESH

FREE FOR PAM STAFF

5 CPD points awarded

2016 dates

- ☐ 16th March
- ☐ 15th June
- ☐ 21st Sept
- ☐ 21st Dec

in PARADISE HALL
Spaces are limited

The Princess Alexandra Hospital NHS Trust

Trauma Team Simulation Day

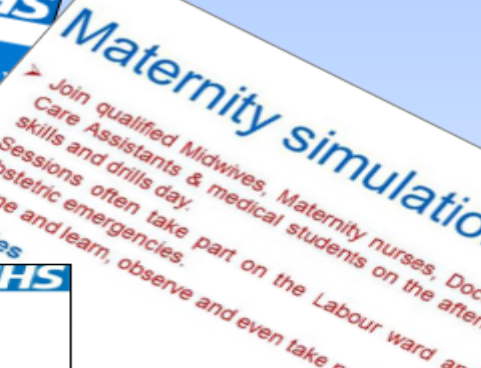
5 RCEM CPD credits awarded

FREE FOR PAM STAFF

CREATING A JOINED UP APPROACH TO TREATING MASSIVE BLOOD LOSS "MDT4MBL"

Dates and times:

- 8th January – 10am-1pm or 2-5pm
- 12th February – 10am-1pm
- 4th March – 10am-1pm
- 14th April – 5:30 – 8:30pm
- 15th May 10am -1pm
- 12th May 10am – 1pm or 2 – 5pm



The collage features several NHS logos in the top left corner. Below them is a poster titled "Maternity simulation" in large blue letters. The poster lists the following details:

- Join qualified Midwives, Maternity nurses, Doctors, Midwives, Care Assistants & medical students on the afternoon of 14th April.
- Sessions often take place on the Labour ward and simulate obstetric emergencies.
- Come and learn, observe and even take part!
- Dates: 14th April 2015

At the bottom left of the collage, there is a small NHS logo and a red letter "G".

The Princess Alexandra Hospital
NHS Trust

**CREATING A JOINED UP APPROACH TO TREATING
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13th May 10am – 1pm or 2– 5pm
23rd June 5:30 – 8:30pm
24th June – 10am-1pm
22nd July – 10am –1pm
23rd September - 10am- 1pm or 2-5pm
7th October – 10am – 1pm
25th November – 10am – 1pm
16th December – 10am – 1pm

Venue: Parndon Hall
Seminar room

Spaces: Max 30 per session

Sessions are open to all staff
Involved in MBL
To book your place please email:-
andrew.foster@pah.nhs.uk
For any queries regarding these
sessions please email:-
tracy.nevin@pah.nhs.uk



Paediatric Trauma & MBL SIM

Introduced January 2018



A practical guideline for the haematological management of major haemorrhage

Beverley J. Hunt,¹
British Committee

¹Department of Haematology and Transfusion Medicine, Leeds General Infirmary, Leeds, ²North Manchester, UK

NICE National Institute for Health and Care Excellence

Acute upper gastrointestinal bleeding in over 16s: management

Clinical guideline
Published: 13 June 2010
nice.org.uk/guidance



NICE National Institute for Health and Care Excellence

Major haemorrhaging in hospital



Royal College of Obstetricians and Gynaecologists

Setting standards to improve women's health

Green-top Guideline No. 5
May 2004

Minor revisions November 2009 and April 2010

East of England Regional Transfusion Committee
East of England Trauma Network



HAEMORRHAGE

Major haemorrhage in adults

Massive blood loss in children

East of England Regional Transfusion Committee



National Patient Safety Agency

Rapid Response Report

NPSA/2010/RRR017

From reporting to learning

21 October 2010

The transfusion of blood and blood components in an emergency

Does one size fit all???



MBL Care Bundle Checklist

Get help: <input type="checkbox"/> Call 2222 stating clearly: Massive Obstetric Haemorrhage Massive Blood Loss Massive Paediatric Haemorrhage <input type="checkbox"/> State the location <input type="checkbox"/> Contact the relevant team(s) / Consultant Communications: <input type="checkbox"/> Identify the Team Leader (TL) <input type="checkbox"/> TL allocates tasks to individuals <input type="checkbox"/> TL ensures a named person to speak with the blood bank <input type="checkbox"/> Report back to TL	Initial management identify: <input type="checkbox"/> Blood loss Adult > 40% / 1500 – 2000ml Paediatric > 40% / > 100ml/kg <input type="checkbox"/> Suspected major blood loss Message: <input type="checkbox"/> Administer high flow oxygen <input type="checkbox"/> Stop the bleed where possible <input type="checkbox"/> IV access – 2 wide bore cannulae or intraosseous access, difficult access <input type="checkbox"/> Samples – Cross-match (RBC) Coagulation (including Fibrinogen) Biochemistry <input type="checkbox"/> Warm Crystalloids N.B. Paediatric doses below <input type="checkbox"/> Transfuse: Add 10ml IV bolus within 3 hours of onset of bleeding then maintenance infusion if required N.B. reduce dose to 50% IV for CRP N.B. See Paediatric doses below <input type="checkbox"/> Administer the following	Transfusion: <input type="checkbox"/> Whatland is in situ – correct ID of patient <input type="checkbox"/> 2nd group sample if required by the blood bank <input type="checkbox"/> Emergency group O if required immediately (inform lab sleep 224) Initial treatment: <input type="checkbox"/> Inform the blood bank the patient's weight Respectively for Paediatric dosing <input type="checkbox"/> RBC – 4 – 6 units initially (Adults) Cryo-sawatts / Fibrinogen Cross-match Adult <input type="checkbox"/> Plasma – (50ml / kg) (Adults) after 4 – 6 units blood replacement and continuing bleeding <input type="checkbox"/> Platelets – Anticipate need for after initial treatment above Definitely need Platelets if <15 x 10⁹ ** See Paediatric calculations for blood components below	Prevent Coagulopathy – continued bleeding: <input type="checkbox"/> Warm RBC and FFP <input type="checkbox"/> Continue with ratio 1:2 after initial treatment Cryo – (2 pools) consider with continued bleeding Fibrinogen < 1.5 g/l Once bleeding settles: <input type="checkbox"/> Take samples every 30-60 minutes for: FBC Coagulation (including Fibrinogen) Biochemistry <input type="checkbox"/> Correct hypocalcaemia Keep ionised Ca ²⁺ 1.0mmol/L ** N.B. see Paediatric doses below <input type="checkbox"/> Keep potassium < 6mmol/L <input type="checkbox"/> Reverse Anti-coagulation / Anti-platelets drugs see Reversal order If bleeding continues: <input type="checkbox"/> Contact Consultant / Haematologist for further advice on management and treatment (Consultant to Consultant)	Equipment: <input type="checkbox"/> Ranger Rapid Infuser <input type="checkbox"/> Ranger Blood / Fluid Warmer <input type="checkbox"/> Cell Saver where possible <input type="checkbox"/> Catheters Apheresis: <input type="checkbox"/> Consider Radiological intervention when bleeding continues <input type="checkbox"/> Ward v ITU/ICU / Transfer <input type="checkbox"/> Monitor coagulation Communications: <input type="checkbox"/> Stand Down with Laboratory <input type="checkbox"/> Check documentation – Precaution chart Blood component chart Anti-coagulation chart Blood labels completed Trauma board <input type="checkbox"/> Handover to accepting area
Specialty Specific – Communication to consider: <input type="checkbox"/> Obstetric <input type="checkbox"/> Theatre <input type="checkbox"/> Vascular team	Specialty Specific Thresholds: <input type="checkbox"/> Direct pressure – sub-occlusion <input type="checkbox"/> Check – Tissue, Tone, Trauma, Thrombin <input type="checkbox"/> Urology	<input type="checkbox"/> Intra Uterine Balloon <input type="checkbox"/> R Lymph suture / Sac Artery Ligation <input type="checkbox"/> Hysterectomy	Transfusion Thresholds & Ratios: Hb aim for > 80g/L Platelets aim for > 75 x 10 ⁹ /L Fibrinogen aim for > 2.0 g/L 8 x RBC – 4 x FFP	Key: <input type="checkbox"/> = Applicable for all events Follow specialty colour for specific guidance on treatments <input type="checkbox"/> = Obstetrics <input type="checkbox"/> = Trauma <input type="checkbox"/> = Gastro <input type="checkbox"/> = Vascular <input type="checkbox"/> = Paediatric
ADULT MAJOR TRAUMA <input type="checkbox"/> Theatre <input type="checkbox"/> Trauma Centre	<input type="checkbox"/> FAST scan <input type="checkbox"/> CT scan	<input type="checkbox"/> Acute pressure / suture <input type="checkbox"/> Acute Pelvic belt <input type="checkbox"/> Splints	Hb aim for > 80g/L Platelets aim for > 75 x 10 ⁹ /L Fibrinogen aim for > 1.5 g/L 4 x RBC – 4 x FFP (1:1 for Adult Trauma)	
GASTRO <input type="checkbox"/> Call Gastro team – OGD <input type="checkbox"/> Out of Hours – call Gastro Consultant <input type="checkbox"/> Consider Interventional Radiology	VASCULAR <input type="checkbox"/> IV Terlipressin 1 mg <input type="checkbox"/> IV Omeprazole 40mg <input type="checkbox"/> IV Antibiotic cover	NON VASCULAR / LOWER GI <input type="checkbox"/> IV Omeprazole 40mg <input type="checkbox"/> IV Vitamin K 5mg <input type="checkbox"/> Call surgeons if bleeding persists	Hb aim for > 80g/L Platelets aim for > 75 x 10 ⁹ /L Fibrinogen aim for > 1.5 g/L 8 x RBC – 4 x FFP	
VASCULAR <input type="checkbox"/> Theatre <input type="checkbox"/> Liaise with Hospital On call for HUB	<input type="checkbox"/> FAST scan	<input type="checkbox"/> CT scan if stable	Hb aim for > 80g/L Platelets aim for > 75 x 10 ⁹ /L Fibrinogen aim for > 1.5 g/L 8 x RBC – 4 x FFP	
PAEDIATRIC <input type="checkbox"/> Paediatric Dose <input type="checkbox"/> NICU <input type="checkbox"/> Surgeons <input type="checkbox"/> Theatre	<input type="checkbox"/> 10 – 20ml/kg Crystalloid / Colloid <input type="checkbox"/> Transfuse: Acid 10mg/kg IV bolus (max 1mg) followed by maintenance infusion <input type="checkbox"/> 10ml/kg bolus doses <input type="checkbox"/> Repeat bloods every 40min/kg. Components given	<input type="checkbox"/> 10 – 20ml/kg (up to 8 units) <input type="checkbox"/> 10 – 20ml/kg (up to 1 pool) <input type="checkbox"/> 10 – 20ml/kg (up to 4 units) <input type="checkbox"/> Cryo – 50ml/kg (up to 300ml)	In haemorrhage 2nd to Theatre <input type="checkbox"/> 10ml / kg warmed NJ saline <input type="checkbox"/> 10ml/kg RBC / Plasma alternated <input type="checkbox"/> After 20ml/kg of the alternate products give 10ml/kg Platelets <input type="checkbox"/> Repeat if approved	Transfusion Thresholds & Ratios for paediatrics Hb > 80g/L Platelets > 75 x 10 ⁹ /L or > 50 x 10 ⁹ /L in Theatre Fibrinogen > 1.5g/L or > 1.0g/L in Theatre Consider Cryo 100mg if < 1g/L Keep ionised calcium per A&O – 1.0mmol/L

Reversal guidance

Direct Oral Anti-Coagulants reversal

	Initial Assessment & Intervention	Minor bleed	Moderate bleed	Severe bleed – life threatening
Dabigatran Inhibits IIa (Thrombin) Effective for up to 12-14 hours	Stop Dabigatran, Rivaroxaban, Apixiban, edoxaban Note time of last dose Take bloods – U&Es, LFTs, HbC, & Coag screen Assess the severity of the bleeding Prolonged APTT – possible Dabigatran effect If taken < 2 hours consider activated oral Charcoal	Transcatheter Aortic Valve Replacement (TAVI) over 10 minutes Dabigatran – delay next dose Rivaroxaban / Apixiban / Edoxaban – Stop 1-2 doses Investigate cause of bleeding Use of compression to stem the bleeding Consider Endoscopy / Surgery if safe to do so to stop the bleeding	Maintain BP and urine output IV Fluid – consider plasma expander Blood products to maintain Hb > 75g/L or 100 x 10 ⁹ /L if CNS bleed Transcatheter Aortic Valve Replacement (TAVI) over 10 minutes Contact Haematologist – consider Desmopressin (DDAVP) Follow Massive Blood Loss Care Bundle guidance and checklist	Maintain BP and urine output IV Fluid – consider plasma expander Blood products to maintain Hb > 75g/L and Platelets > 75x10 ⁹ /L or 100 x 10 ⁹ /L if CNS bleed Contact Haematologist – Recombinant Factor 7 (Bibenzon) Consider Haemodialysis Follow Massive Blood Loss Care Bundle guidance and checklist
Rivaroxaban Apixiban Edoxaban Inhibits IIa Effective for up to 24 hours	Normal APTT – No Dabigatran effect Normal APTT & PT – No Rivaroxaban / Apixiban / Edoxaban effect Take further bloods 2 hours later if elevated follow protocol			

Warfarin reversal

	1. On Warfarin and requires urgent surgery	2. No bleeding or Minor bleeding	3. Moderate – Severe bleeding (including head injury with GCS of 5 or less)													
Inhibits clotting factors – II, VII, IX, X And Protein C & S	<ul style="list-style-type: none">Stop WarfarinTake sample for INR check (result must be recent and taken within 2 hours of Desfibrin being administered)Give Sing Vitamin K IVContact Transfusion Lab Sat 2500 to request Desfibrin,Give the patients weight to the Lab and they will calculate the correct dose following the guide belowPrescribe Desfibrin and Vitamin K on the pink anti-coagulant chartIf surgery is postponed till later time / date Vitamin K alone will reverse the INR, request INR prior to surgery	<ul style="list-style-type: none">INR >4.0 to <6.0 (target INR 2.5)INR >4.0 to <6.0 (target INR 2.5)INR >4.0 to <6.0INR >4.0 to <6.0 with no other bleeding risk	<ul style="list-style-type: none">Reduce dose by 25% or stop Warfarin dose and restart when INR <4.0 (Discuss with Haematology)Reduce dose by 25% or stop Warfarin dose and restart when INR <4.0 (Discuss with Haematology)Stop Warfarin and restart when INR <4.0Stop Warfarin and restart when INR <4.0													
	<table><tr><td>INR</td><td>1.5 – 1.9</td><td>2.0-3.9</td><td>>4</td></tr><tr><td>Dose</td><td>1mg / kg</td><td>1.5mg / kg</td><td>3mg/kg</td></tr><tr><td>Max dose – 150kg or ></td><td>15000 IU</td><td>25000 IU</td><td>30000 IU</td></tr></table>	INR	1.5 – 1.9	2.0-3.9	>4	Dose	1mg / kg	1.5mg / kg	3mg/kg	Max dose – 150kg or >	15000 IU	25000 IU	30000 IU	<ul style="list-style-type: none">INR >4.0 with other bleeding riskINR >4.0	<ul style="list-style-type: none">Stop Warfarin and give vitamin K long IV Restart when INR >4.0Stop Warfarin and give vitamin K long IV Restart when INR >4.0	<ul style="list-style-type: none">Stop WarfarinGive Vitamin K long IVINR not required in an emergency bleedGive the patients weight to the Lab and they will calculate the correct dose at 2500 / kg (Maximum dose for 250kg = 30000 IU)Prescribe Desfibrin and Vitamin K on the pink anti-coagulant chart
	INR	1.5 – 1.9	2.0-3.9	>4												
Dose	1mg / kg	1.5mg / kg	3mg/kg													
Max dose – 150kg or >	15000 IU	25000 IU	30000 IU													
			<p>N.B. Desfibrin is a by-product of blood (Human Plasma) and requires the same:-</p> <ul style="list-style-type: none">2 x independent patient checkscompletion of blood labels													

Reversal of Enoxaparin, Unfractionated Heparin including and Fondaparinux

Agent		Treatment	Specific Instructions
Enoxaparin	➤ Within the first 8 hours of Enoxaparin administration	➤ Protacine Sulphate 1mg/1mg Cleane (IV over 30 minutes) Maximum dose 10mg	➤ Prescribed on pink Anti-coagulant chart
	➤ After the first 8 hours of Enoxaparin administration	➤ Protacine Sulphate 0.5mg/0.5mg Cleane (IV over 30 minutes) Maximum dose 50mg	➤ Prescribed on pink Anti-coagulant chart
Unfractionated Heparin Fondaparinux	➤ Repeat if necessary In the event of bleeding	➤ Protacine Sulphate 15mg / IV over 10 minutes Maximum dose 10mg First line treatment – Treat with HPP 30 – 35mg/kg Second line treatment ➤ Protacine Sulphate 15mg/kg – with Consultant Haematologist agreement	➤ Prescribed on pink Anti-coagulant chart ➤ Prescribed on blood component chart ➤ Prescribe on pink Anti-coagulant chart ➤ Protacine is a by-product of blood (Human Plasma) and requires the same:- ➤ 2 x independent patient checks ➤ completion of blood labels

Reversal of Anti-Platelets

Drug action on Platelets	Post-operative management – planned surgery	Emergency bleeding / urgent surgery	Restarting medication
Aspirin Clopidogrel Prasugrel Ticagrelor Thienopyridine	Depends on operation and bleeding risk Cardiovascular risk factors Type of Anti-Platelet drug and its clearance half life Please note further information on guidance for planned surgery can be found in the following Trust guidelines: The management of anticoagulation and antiplatelet therapy in the perioperative/procedural period	Platelet transfusion Follow NHS checklist Aspirin – Platelet transfusion will reverse effect within 20 minutes Clopidogrel – Platelet transfusion will reverse effect within 2-3 hours	Aspirin – will take a few minutes to take effect once restarted Clopidogrel – takes 5-10 days to attain maximum effect Prasugrel – more rapid than clopidogrel Ticagrelor – acts faster and shorter, once commenced takes 1-2 hours for full effect of drug Thienopyridine – effects start within 2 days of commencement, it reaches full effect by day 6
Dipyridamol Citratum NSAID			

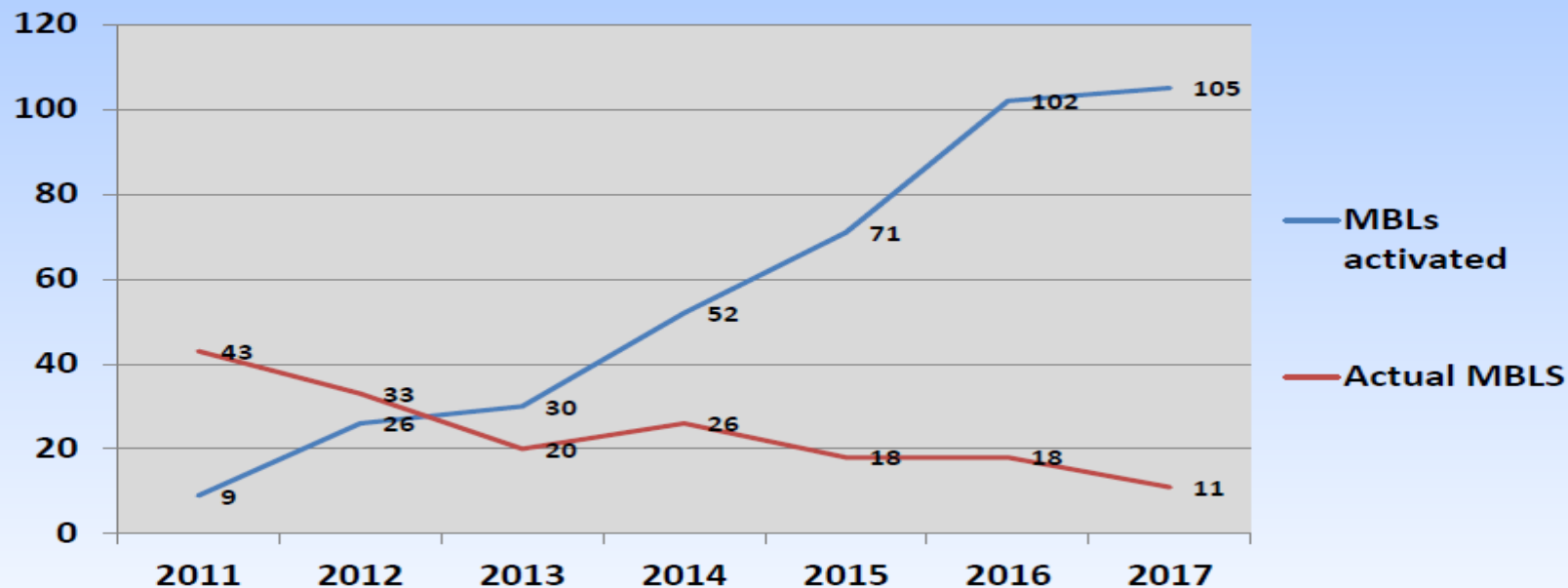
This is not an exhaustive list of Anti-Platelet medications – please note that some patients may be taking Dual Anti-Platelets (a combination of 2)

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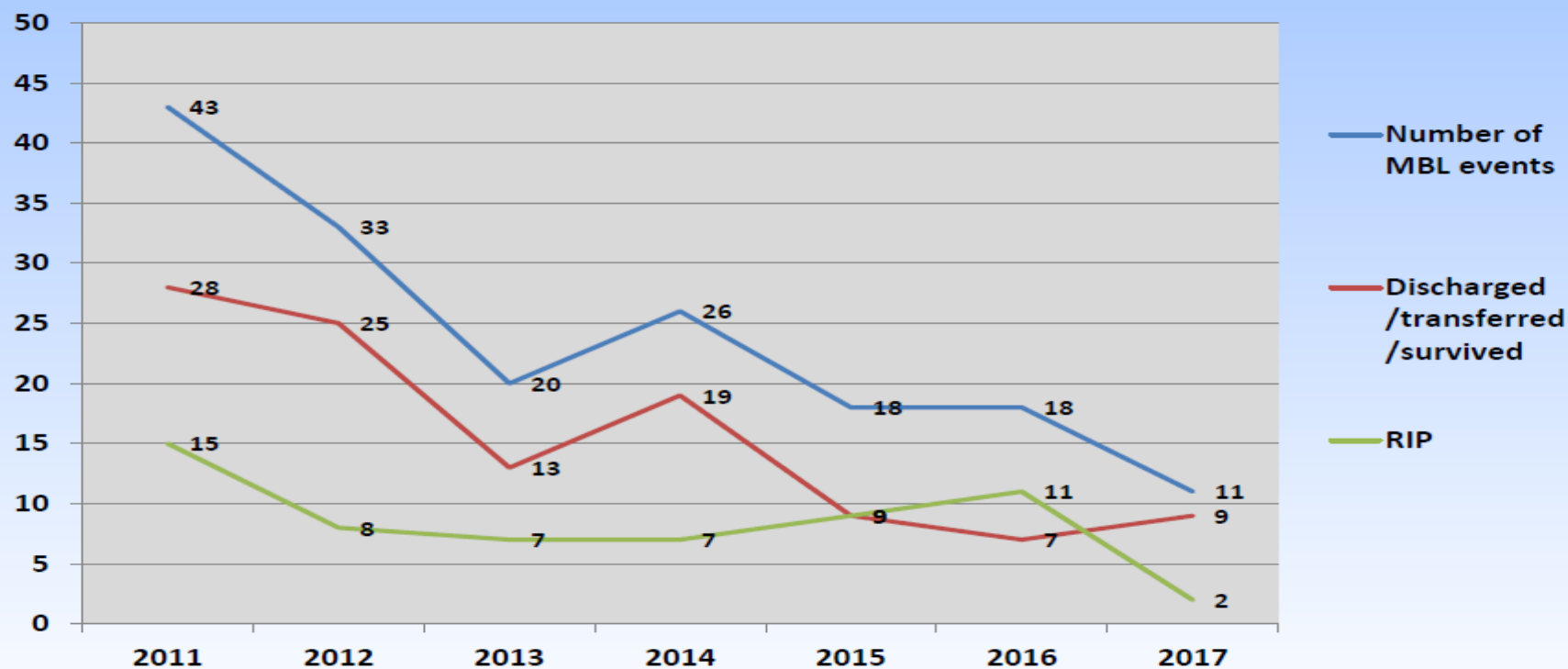


Clinical role for TP in Major haemorrhage

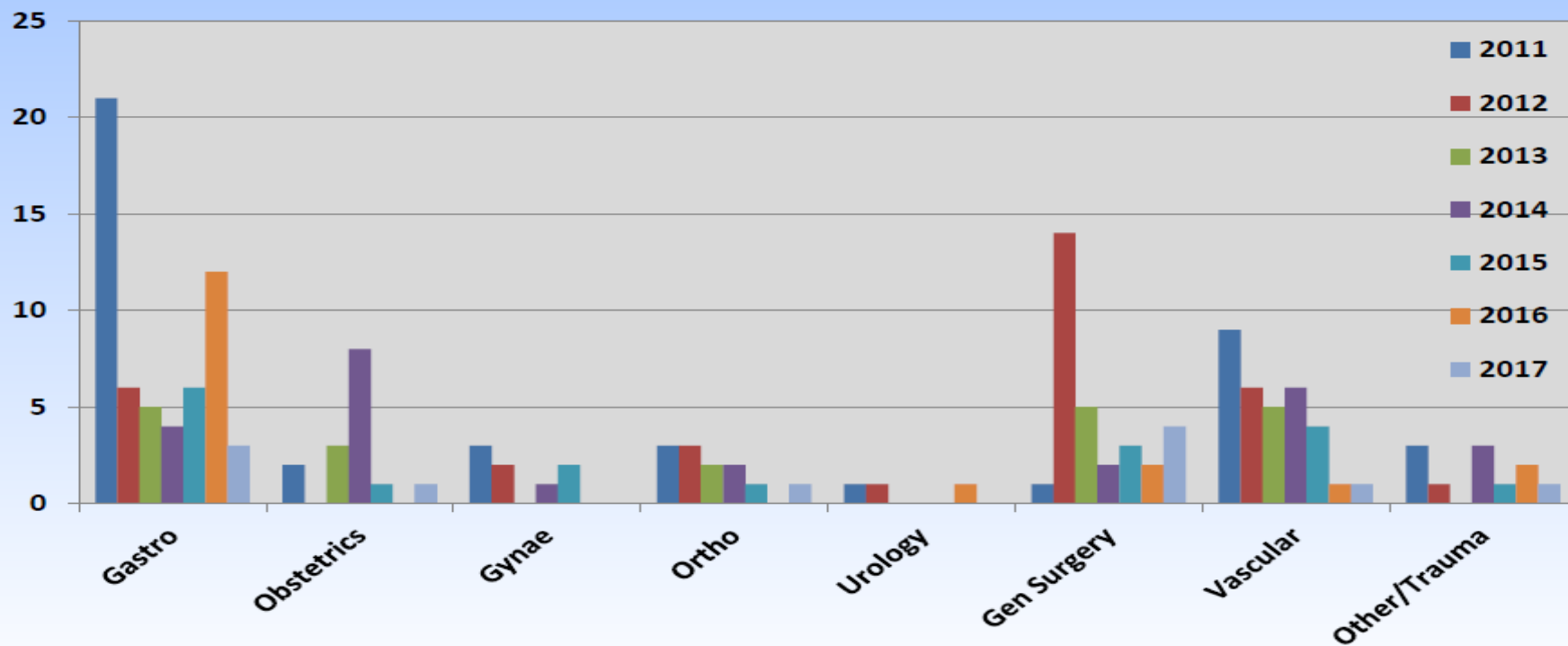
Communication & Activation



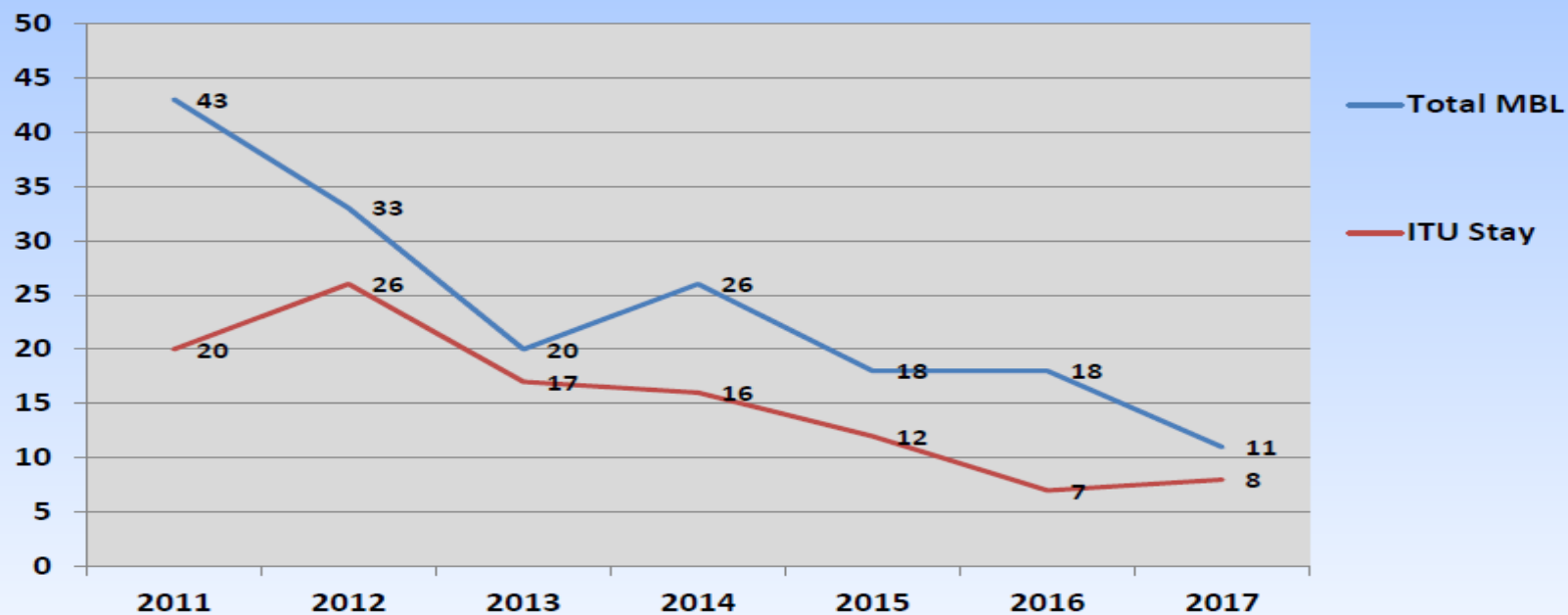
Patients Outcomes



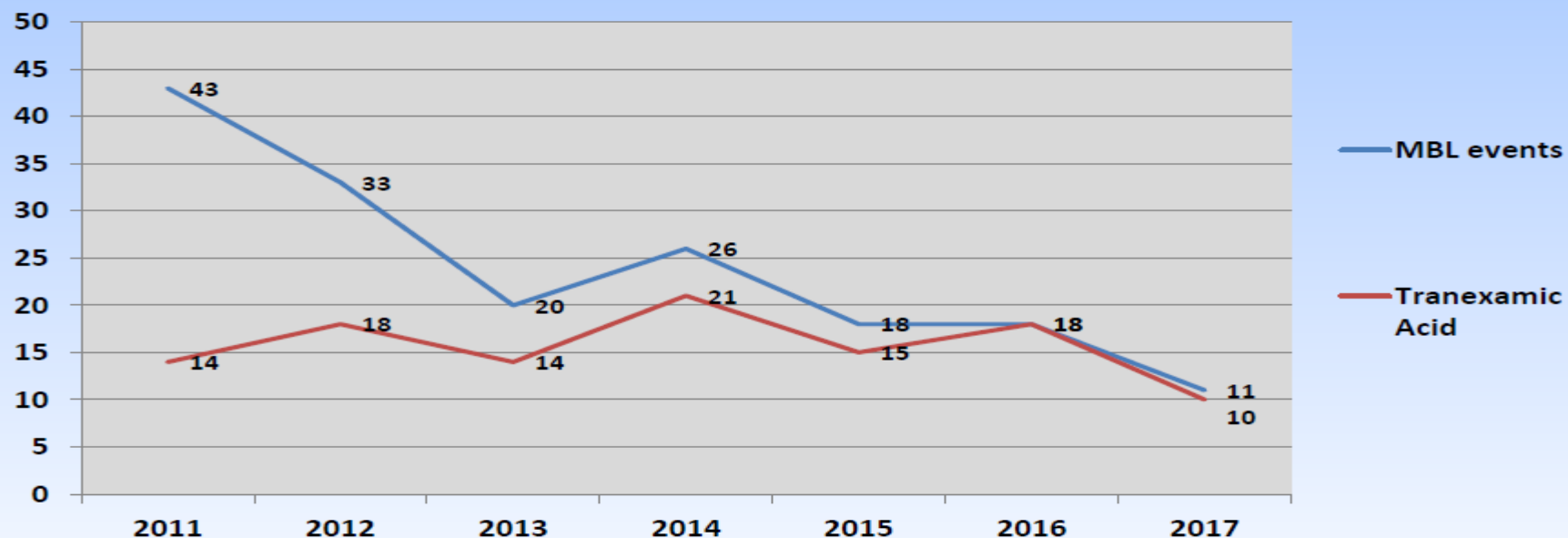
Specialties



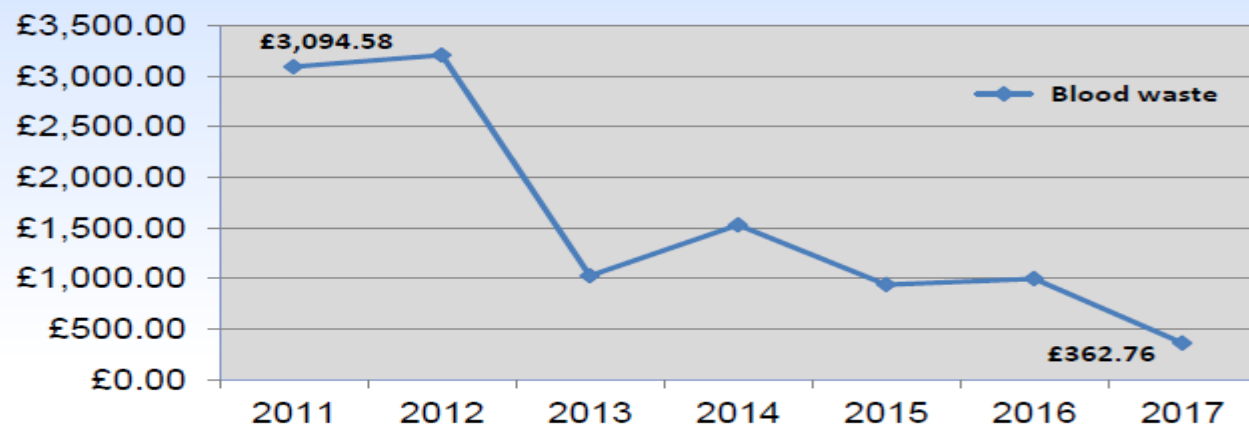
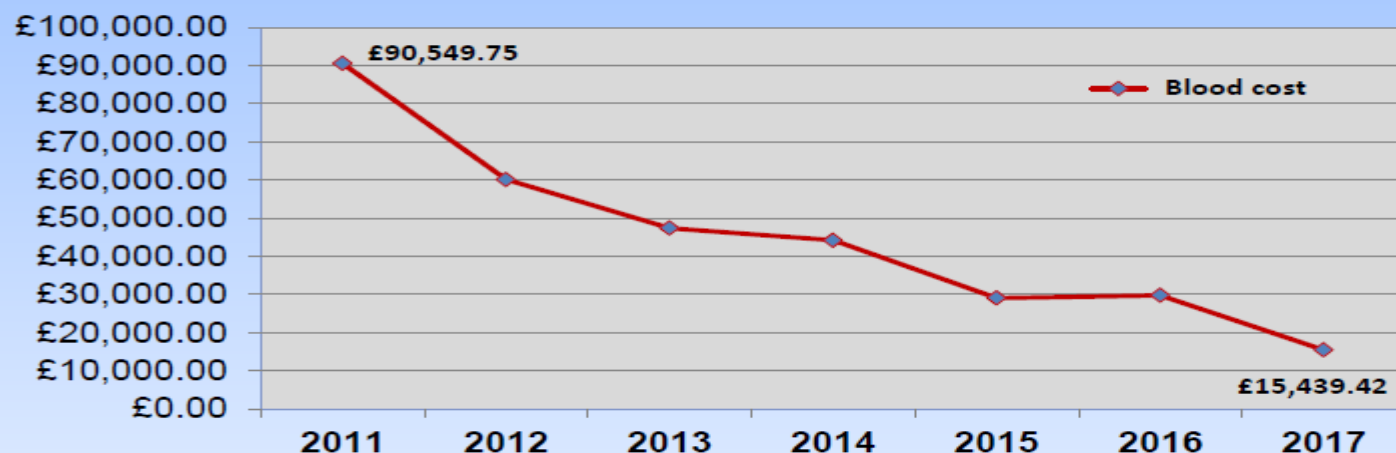
Bed usage



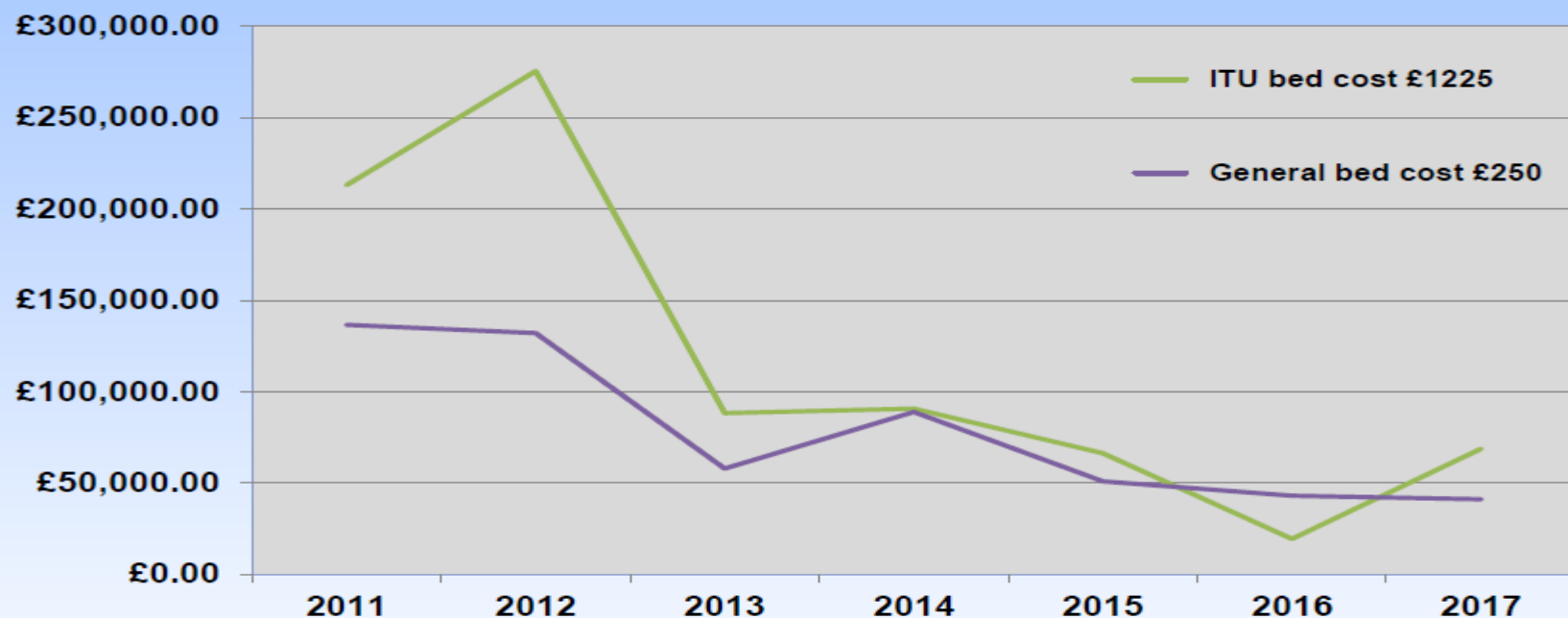
Tranexamic usage



Cost of blood and wastage



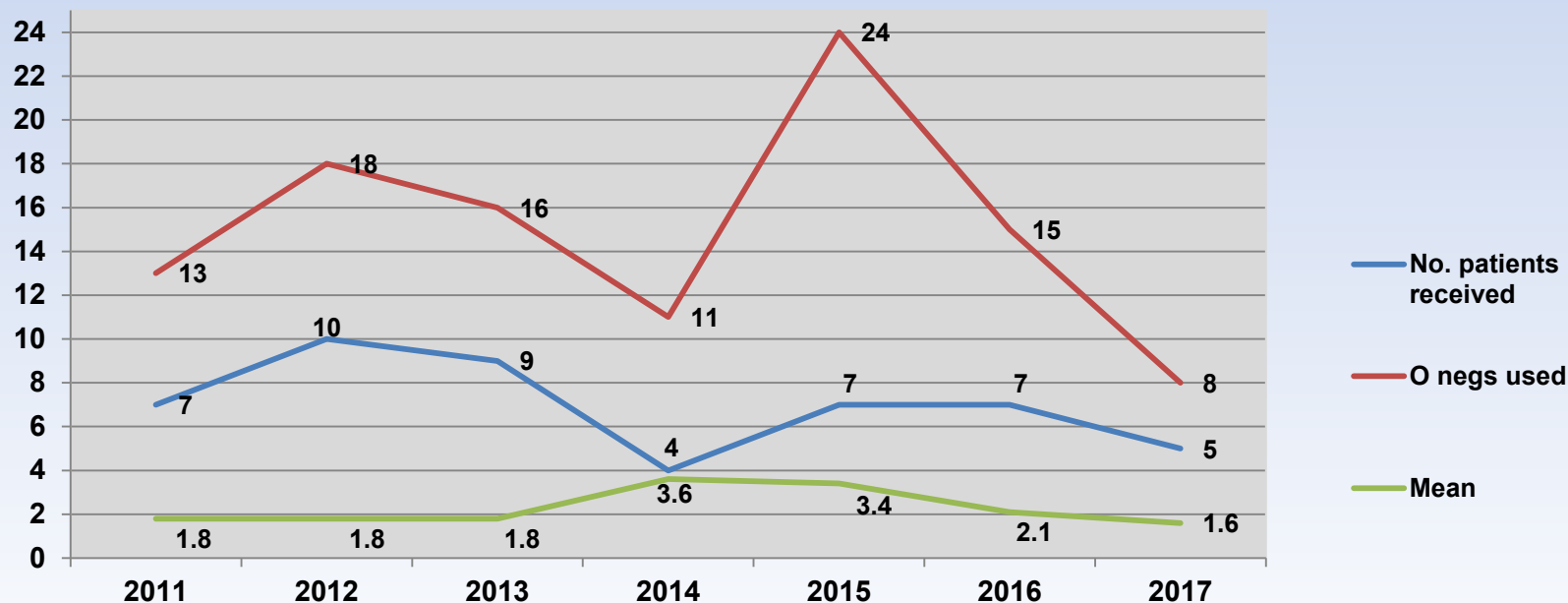
Bed usage



What about our emergency blood supplies?



O neg usage



Challenges along the way

- Staff engagement / time pressures to relieve staff to attend training
- Change process can take a long time - bite size goals are more achievable
- Various Guideline updates



Good points

Patient:-

- Timely provisions of blood products
- Timely reversal treatments
- Improved outcomes
- Reduction in mortality

Laboratory:-

- Reduction in blood usage & wastage
- Improved links with clinical staff, part of wider team
- Increased knowledge of clinical practice
- Reduction in incidents
- Support from TP
- Laboratory profile raised in the Trust
- Improved compliance to PBM

Clinical:-

- Easy to follow activation tool
- Improved knowledge of MBL management
- Better understanding of the types of interventions, sampling and products required
- TP Support in the Lab & clinically
- Teaching available for all specialties
- Improved links with Lab staff
- Improved links with HTC and Trauma Committee (including RTN)

Trust:-

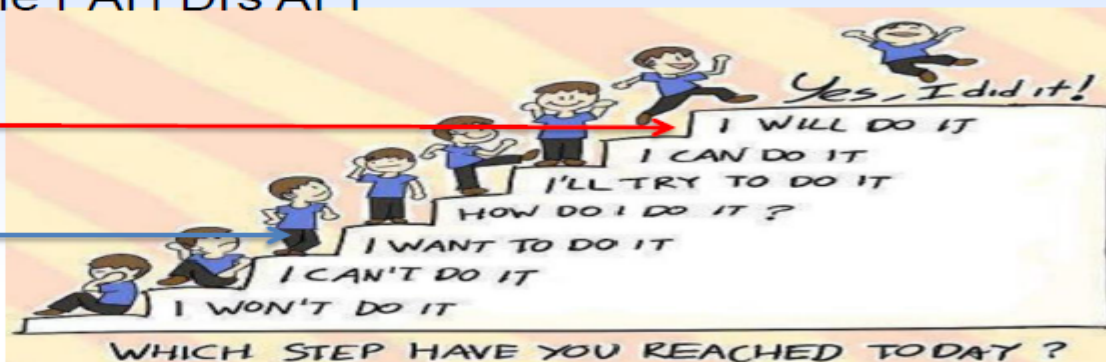
- Improved communication between Depts.
- Improved patient outcomes
- Reduction in mortality
- Reduction in bed stay – general bed & ITU bed
- Reduction in cost for blood products year on year
- Regionally & Nationally presented audit findings and MBL SIM training
- No extra cost to the Trust for MBL SIM training provided by TP, Reps & Medical Clinical Skills Facilitator

Where are we now 7 years on?

- Key subject discussed at Trust PSQ Mortality Review Forum
- Incidents that did not go so well are discussed at our Serious Incident Group
- Raised the profile on anti-coagulant usage and our knowledge of them
- Clinical staff Induction programme automatically booked onto:-
 - Blood Transfusion Induction Training – 3 hours
 - MBL SIM training - 3 hours
- 3rd Cell Salvage machine – Obstetrics
- MBL Care Bundle – RTC, RTN
- MBL Care Bundle part of the PAH Drs APP

2018

2011



Future Plans

- MBL Care Bundle to be added to our new Blood Transfusion Prescription Pathway
- MBL training is currently being considered as part of the Mandatory Training programme by our Trust Board
- We are currently developing Theatre SIM training using Cell Salvage to promote its use and train staff
- We are working alongside Essex & Herts Air Ambulance Team (EHAAT) to supply Blood on Board & to look at increasing usage of PCC in the Pre Hospital Care setting





A HUGE thank you to



Take away message

**“Good things come to
those who ~~wait~~ work
their asses off and
never give up.”**

EVERYDAY POWER



And finally



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