Major Haemorrhage in the North West and North Wales- a regional audit

14th November 2012

North East RTC Meeting

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Experiences from the North West Regional Transfusion Committee incorporating North Wales

Background and development process

Regional Audit results- 1st data collection

Results (preliminary) -2nd data collection

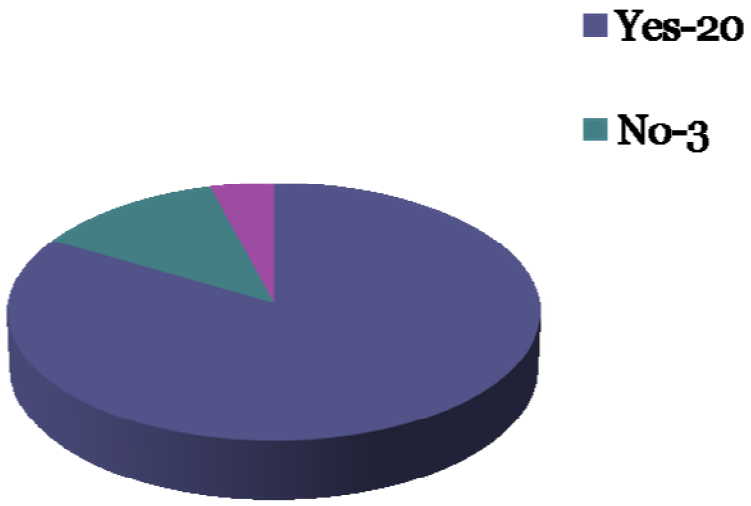
Where next?

The Background.....

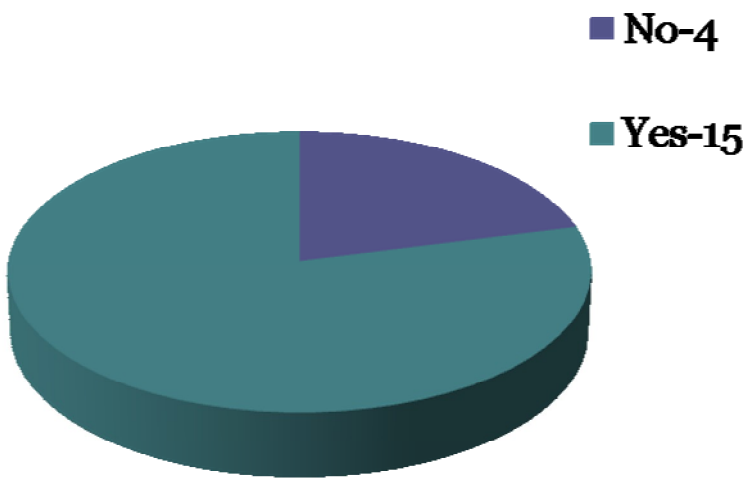
- September 2009- RTC members requested regional guidelines to address new developments in Massive Haemorrhage.
- Toolkit rather than guideline.
- November 2009-Call for volunteers at RTC
- January 2010- Literature review
- April 2010-Steering group meeting
- May 2010-Interim Workshop
- June 2010-Final workshop
- July - September 2010-Draft circulated to RTC members for consultation
- November-December 2010-Revised version of Toolkit circulated

Consultation feedback

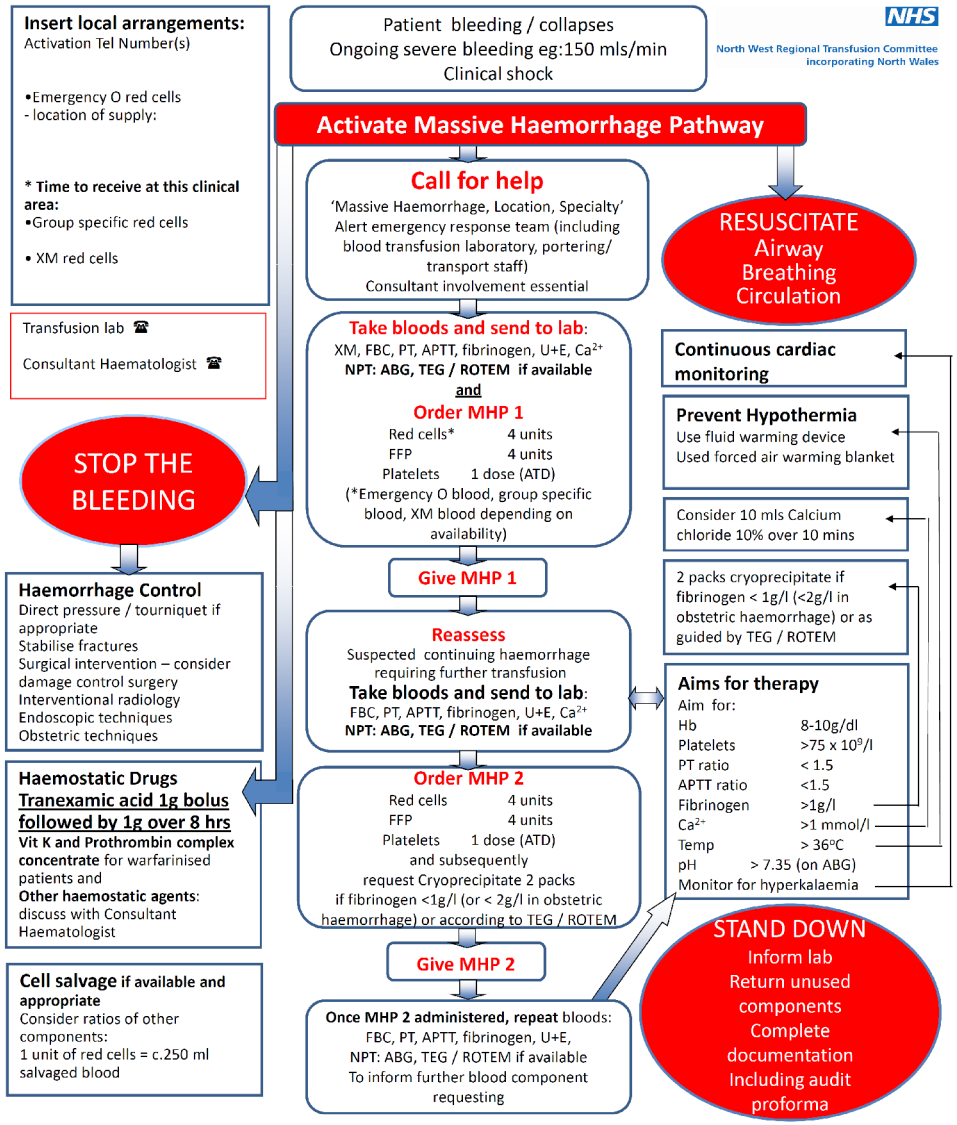
Do you have a policy already?



Would you use the toolkit?



Transfusion Management of Massive Haemorrhage



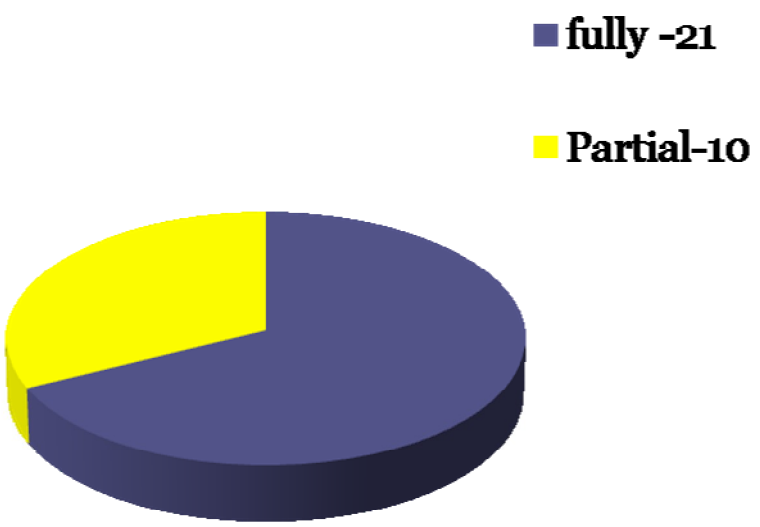
Thromboprophylaxis should be considered when patient stable

ABG – Arterial Blood Gas
FFP- Fresh Frozen plasma
PT- Prothrombin Time

APTT – Activated partial thromboplastin time
MHP – Massive Haemorrhage Pack
TEG/ROTEM- Thromboelastography

ATD- Adult Therapeutic Dose
NPT – Near Patient Testing
XM - Crossmatch

Has a policy been implemented?



- Survey in July 2011
- Asked if a policy was implemented (Yes, no or partial)
- North West regional Transfusion Committee Massive Haemorrhage toolkit was used by 29 of the trusts (of 31 total).

Problems Encountered

- “Transportation and porter issues”
- “Communication chain breakdown”
- “Log sheet in lab inadequately completed”
- “Real time drills not allowed within trust”
- “Problems allocating specialist team”
- “Poor level of knowledge amongst staff of algorithms/pathway”
- “Limited time to audit”

Further Issues

- “Not triggered as yet”
- “Integrating with specialty guidelines”
- “Increased wastage of FFP/ Platelets”
- “No platelets available for 1st MHP”
- “Inappropriate activation”
- “Difficulty ratifying policy”

Pilot Study

- Pilot study carried out in 4 centres (Countess of Chester, University Hospital of South Manchester, University Hospital Morecambe Bay, East Lancashire Hospitals Trust)

- In the pilot 16 different cases of massive haemorrhage were analysed. Data collected using survey monkey.

- Pilot led to decision to collect data via spreadsheet. Other modifications were also implemented

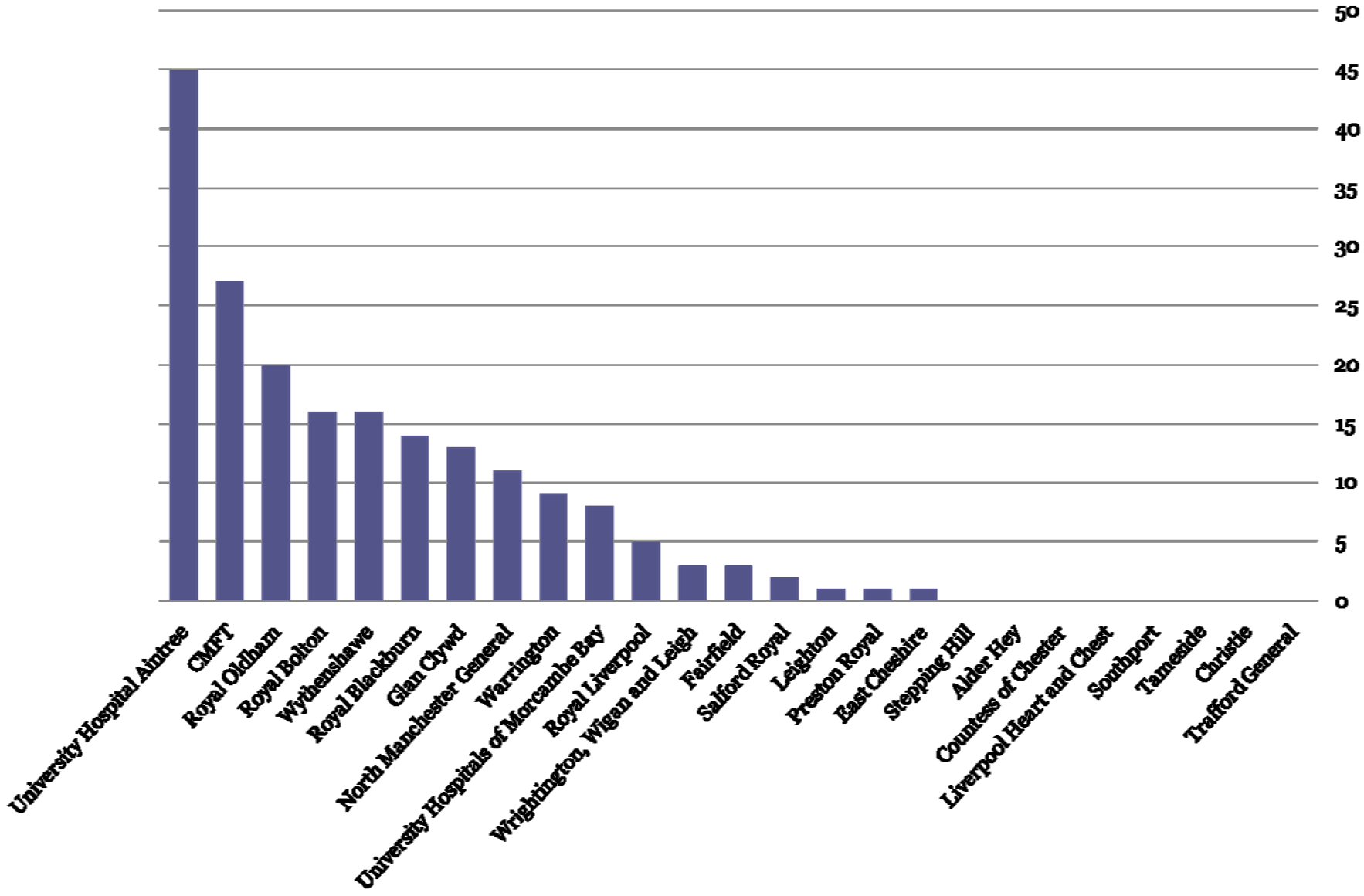
Regional Audit

- December, January and February 2011/2012.
- Data collected on:
- When, where, who
- If pathway activated
- Use of products/adjuncts and wastage
- Outcome data

Results- 1st data collection period

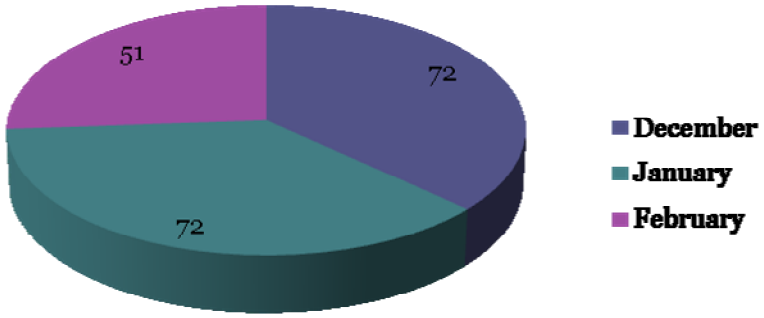
- 195 cases included from 17 hospitals (a further 8 hospitals had no activations during this time period)
- 3 unable to participate- staffing constraints
- 5 paediatric cases also reported (not included in this data)
- Hospitals had a range of 0 to 45 cases

Number of cases submitted by hospital

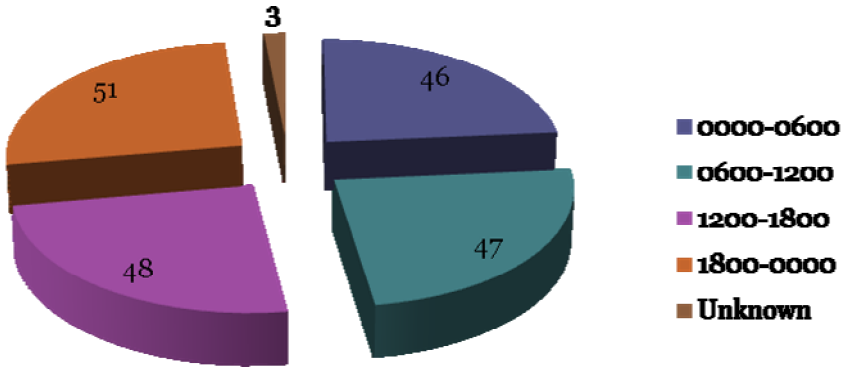


When?

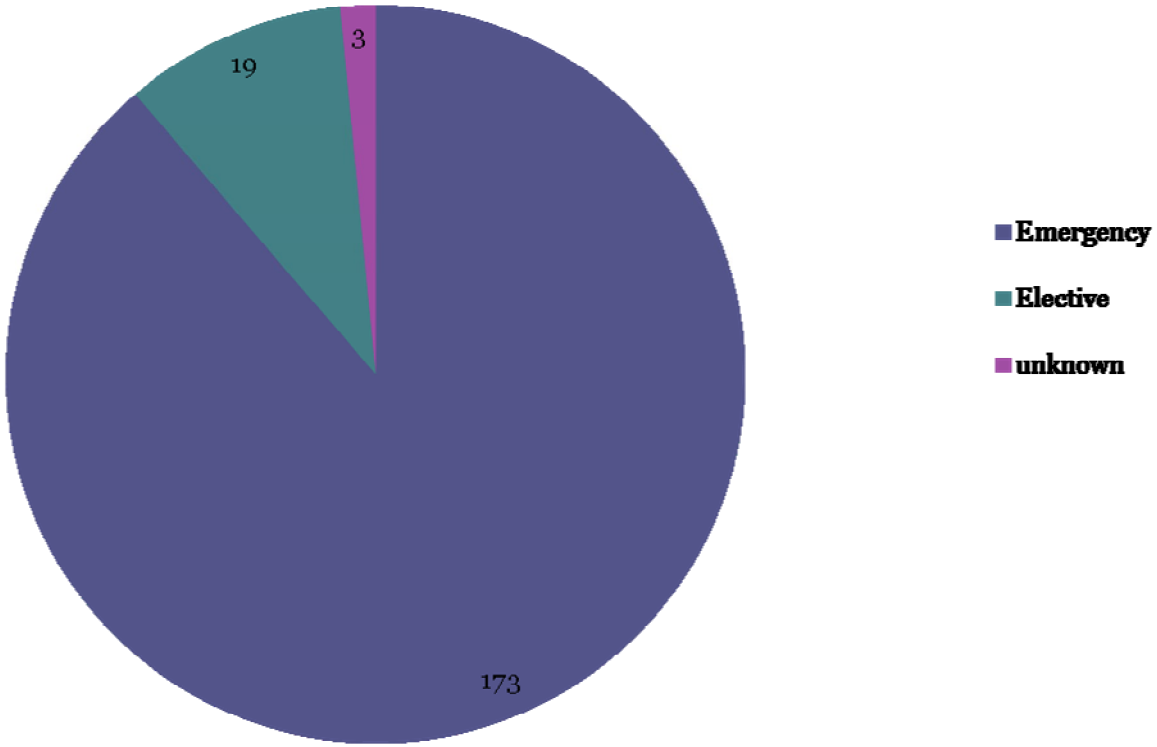
Month of haemorrhage



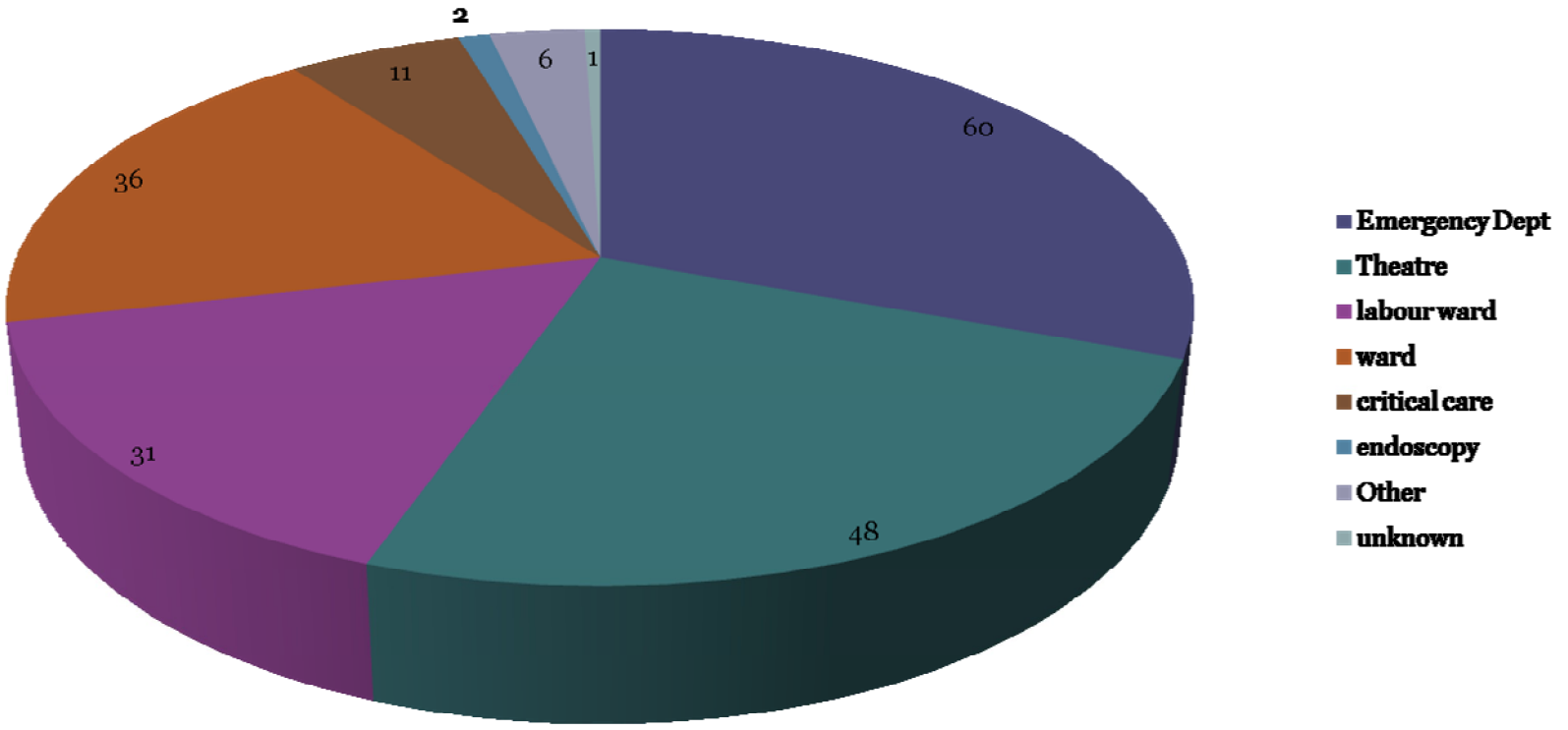
Time of Haemorrhage



Emergency or elective?

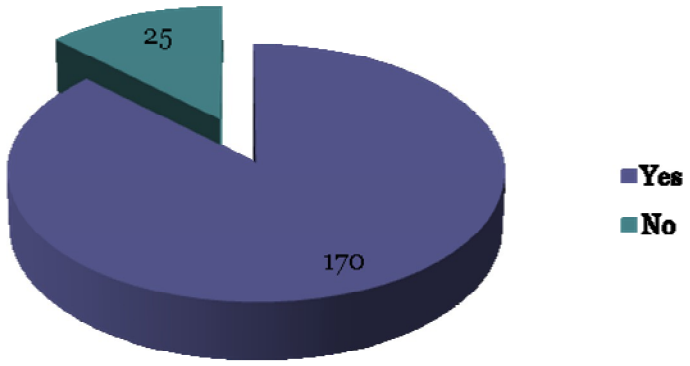


Where they presented

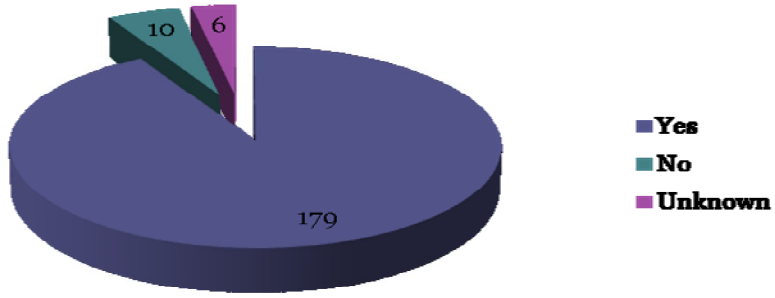


Pathway activated?

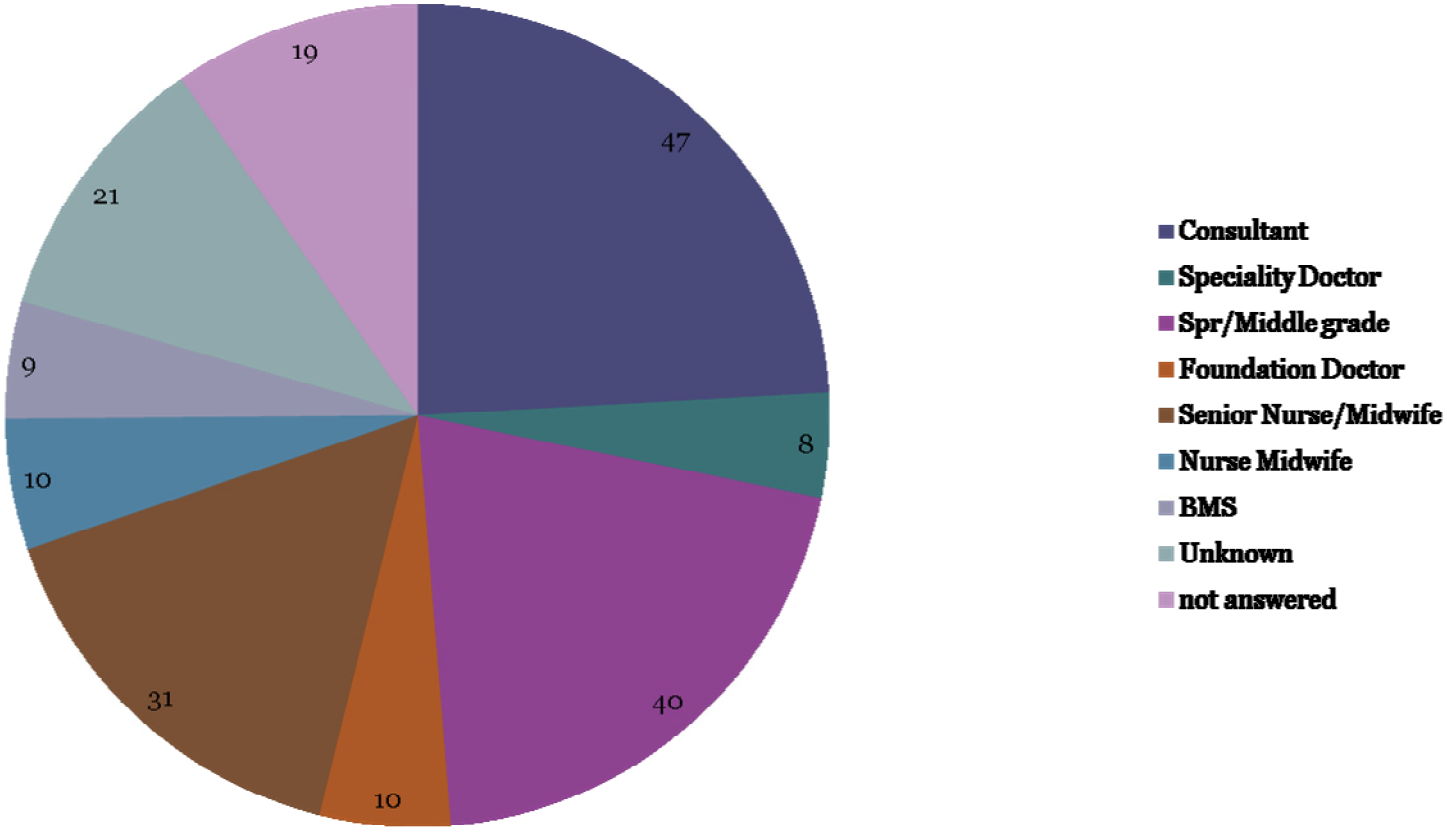
Was the pathway activated



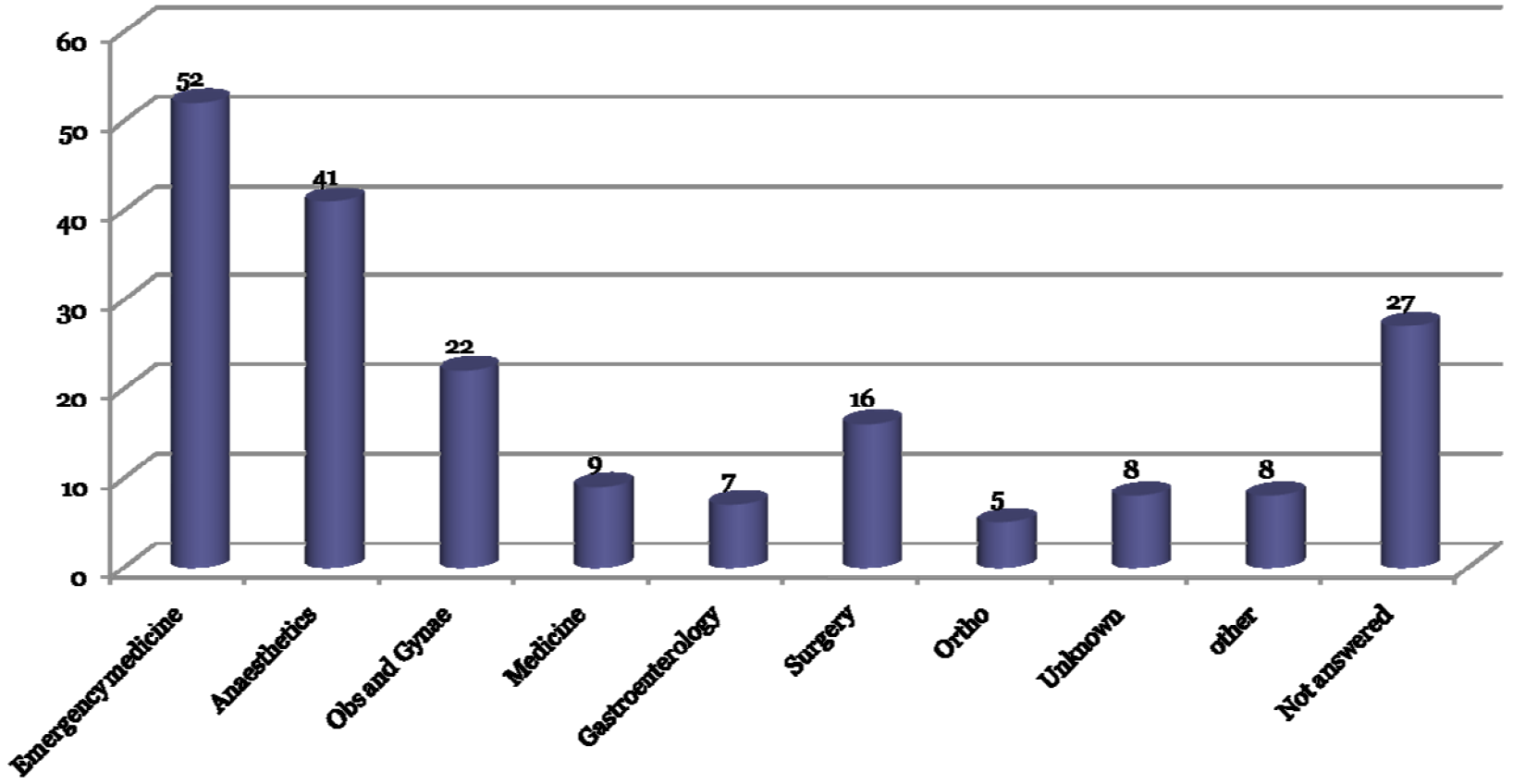
Was the lab aware?



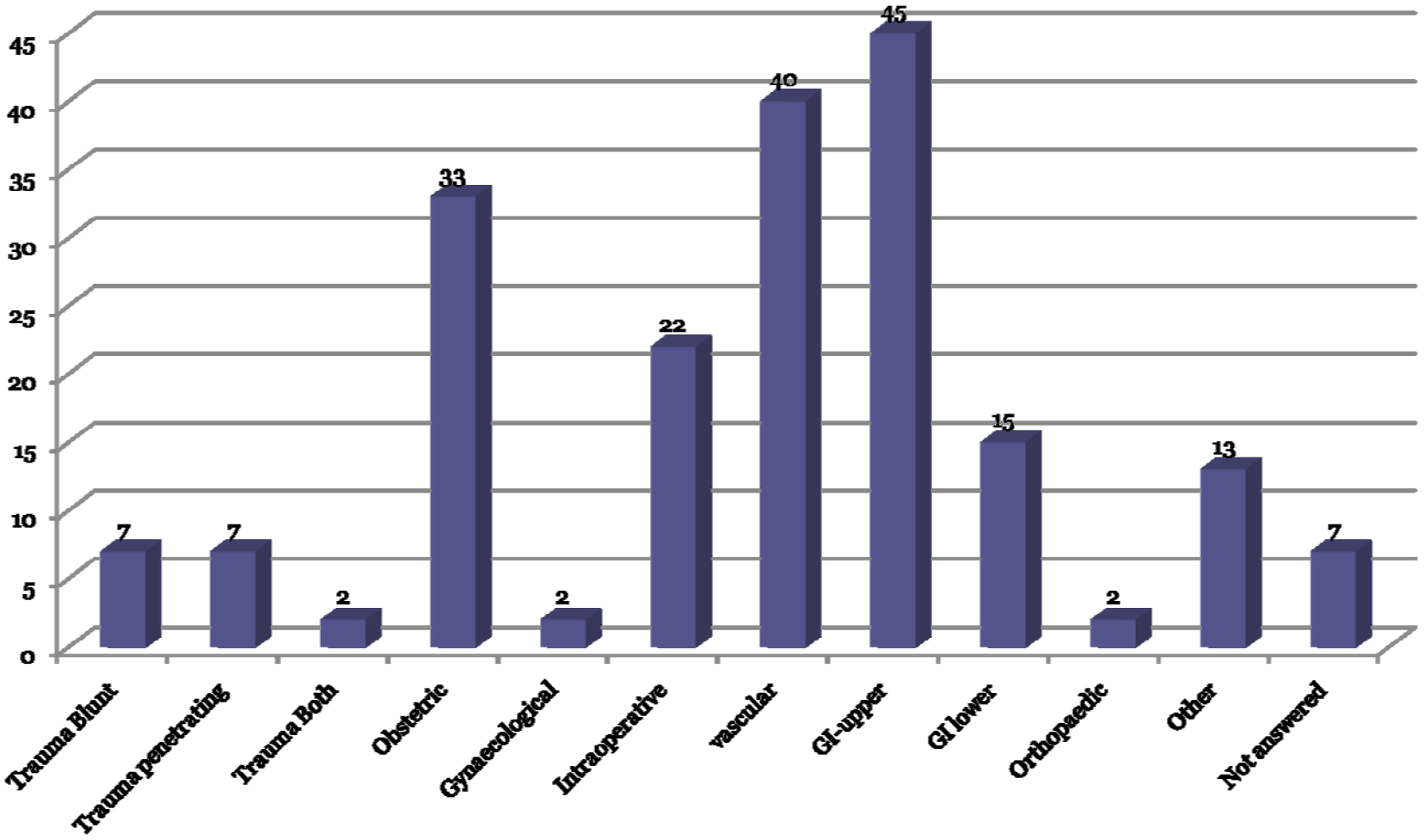
Grade of person activating



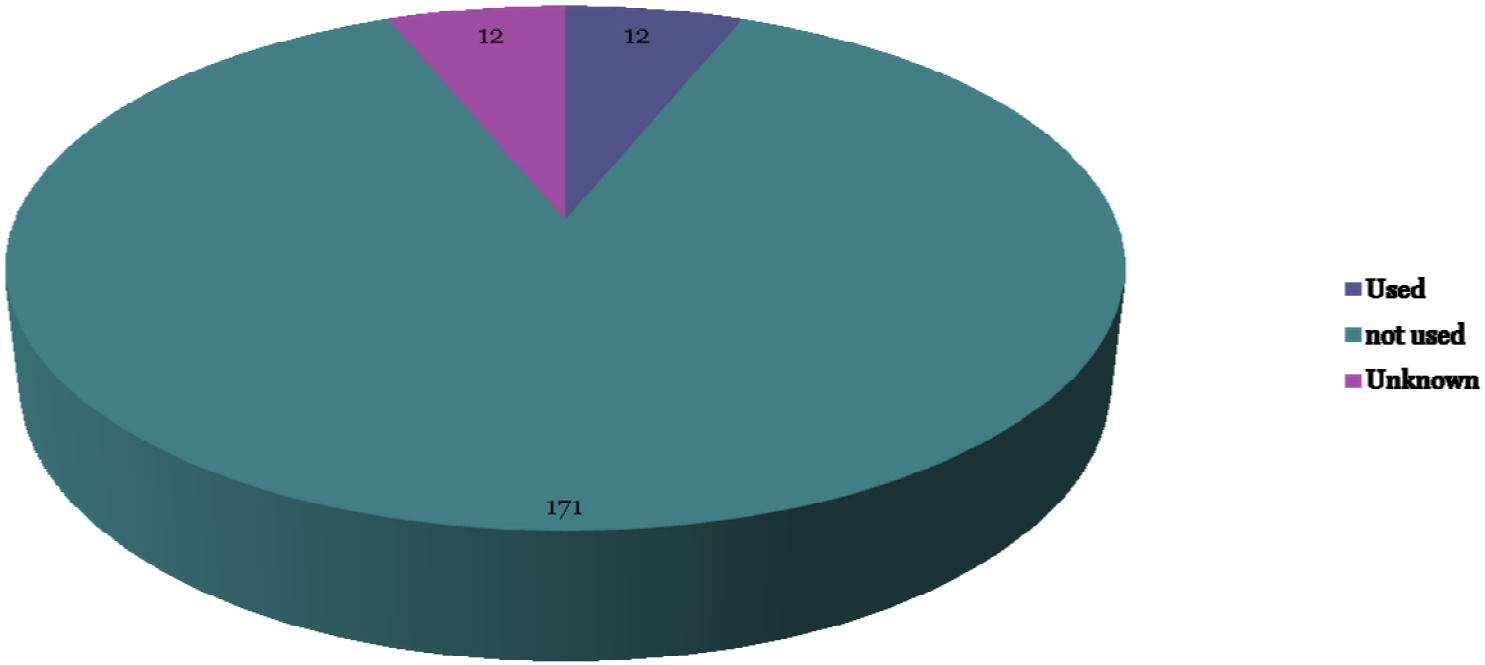
Department of activating person



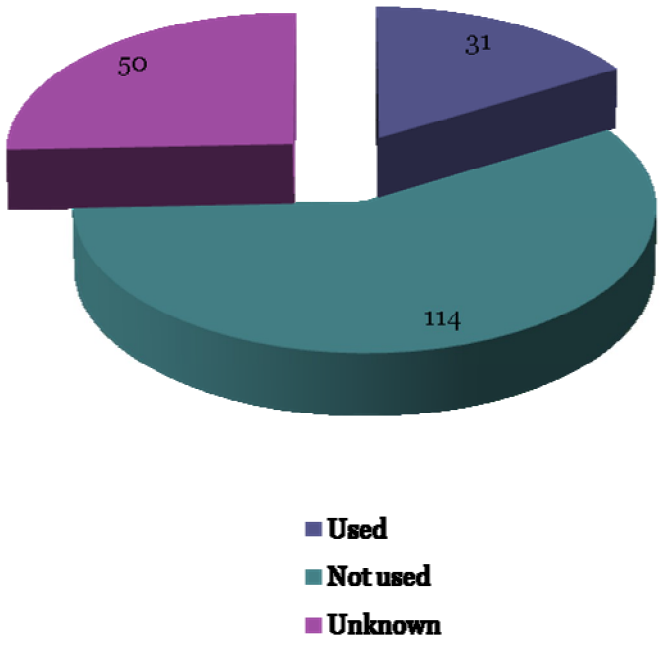
Presentation of bleed



TEG/ ROTEM



Tranexamic Acid Use



- 31 cases used tranexamic acid
- Of the 16% (2/3rds of these had it in first 3 hours- unknown in 28%)
- 14 used as 1g bolus then 1g over 8 hour (6 unknown dosing)
- In trauma cases it was only used in 3 of the 16

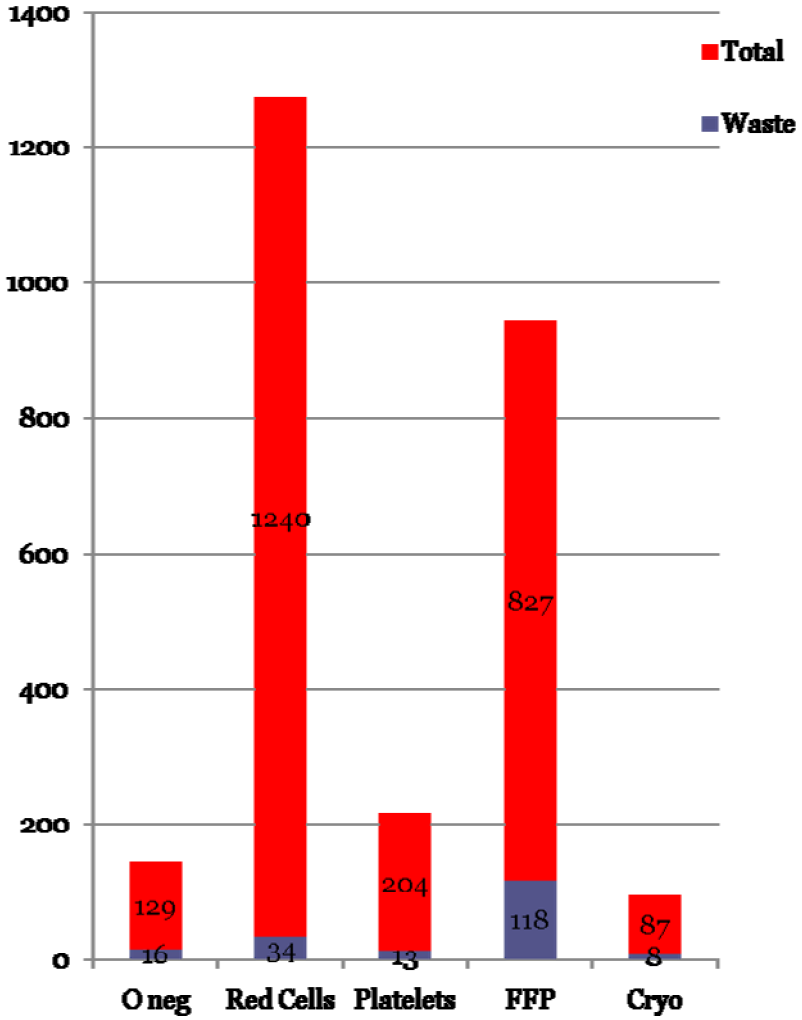
Cell salvage

- Used in 27 cases (unknown in 60)
- 200mls to 7600mls (2 cases insufficient to process)
- 10 hospitals used cell salvage

Product use

	No. cases used	mean	Total no. units	Range
O neg	52 (51)	2.5	129	1 to 10
Red Cells	169 (6)	7.3	1240	1 to 40
Platelets	114 (11)	1.8	204	1 to 7
FFP	138 (10)	6	827	1 to 28
Cryoprecipitate	28 (27)	3.1	87	1 to 10

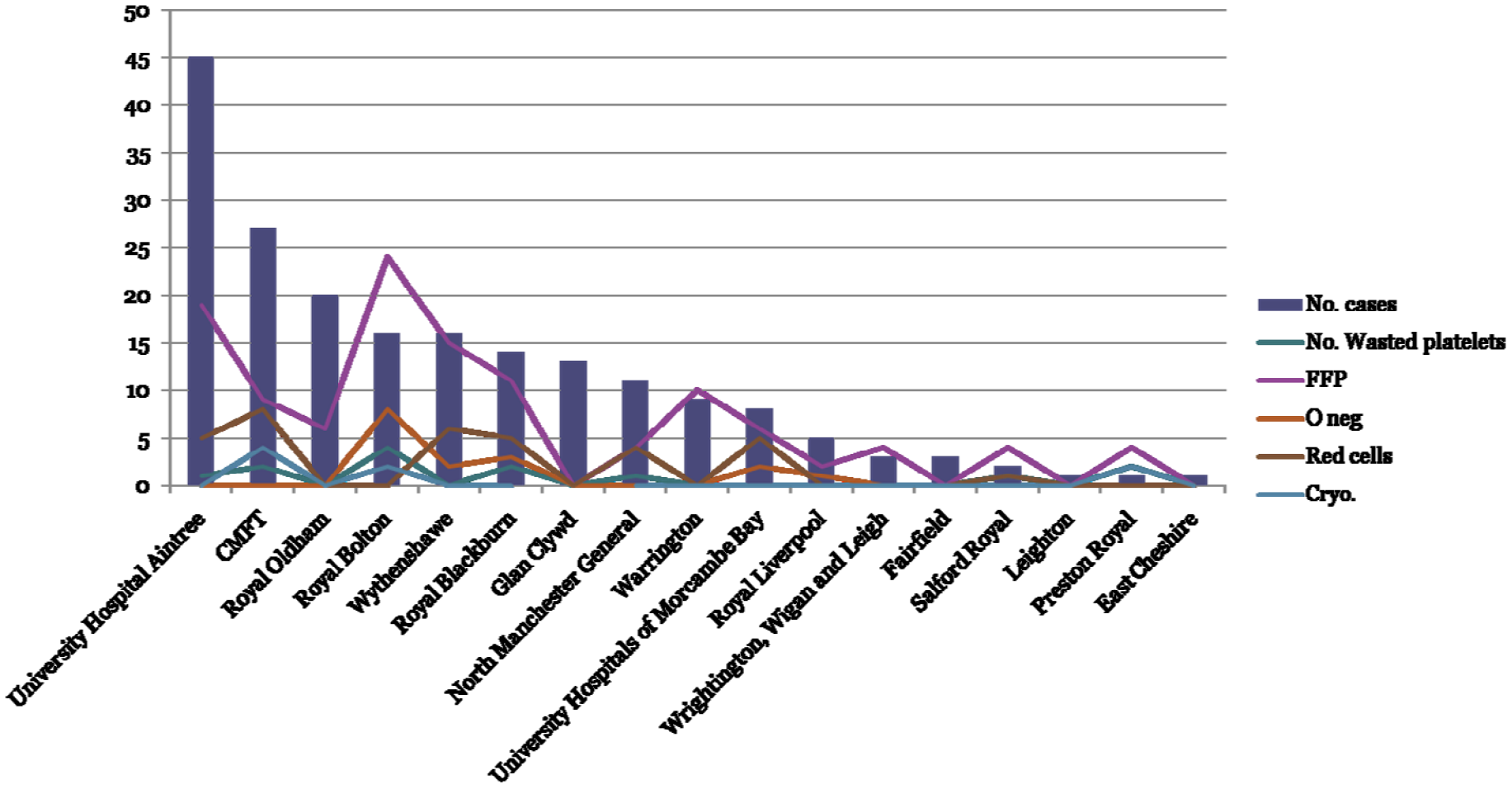
Product Wastage



	No. Units wasted	% of total used	No.cases
O Neg	16	11%	5
Red Cells	34	3%	15
Platelets	13	6%	12
FFP	118	12%	31
Cryo	8	6%	2

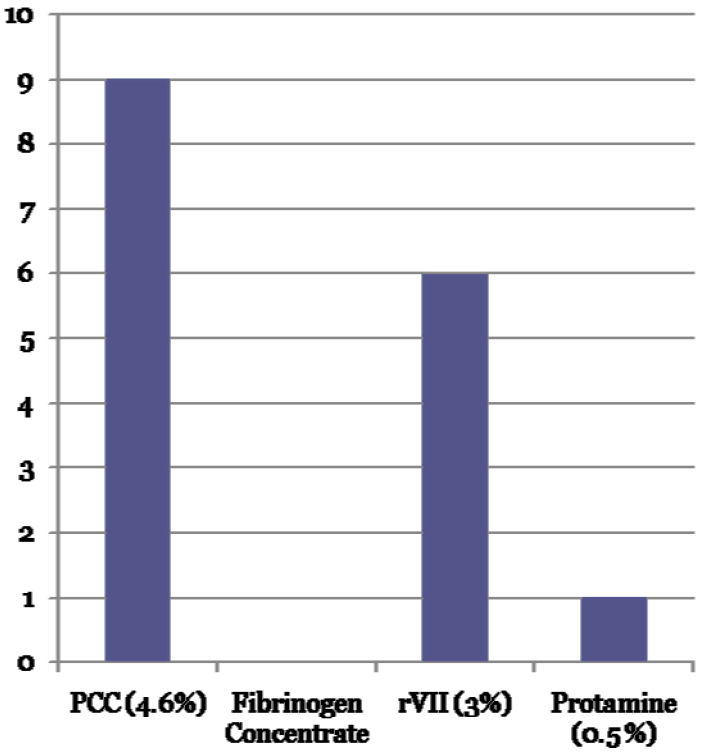
Column1	No. cases	No. Wasted platelets	FFP	O neg	Red cells	Cryo.
University Hospital Aintree	45	1	19	0	5	0
CMFT	27	2	9	0	8	4
Royal Oldham	20	0	6	0	0	0
Royal Bolton	16	4	24	8	0	2
Wythenshawe	16	0	15	2	6	0
Royal Blackburn	14	2	11	3	5	0
Glan Clywd	13	0	0	0	0	
North Manchester General	11	1	4	0	4	0
Warrington	9	0	10	0	0	0
University Hospitals of Morcambe Bay	8	0	6	2	5	0
Royal Liverpool	5	0	2	1	0	0
Wrightington, Wigan and Leigh	3	0	4	0	0	0
Fairfield	3	0	0	0	0	0
Salford Royal	2	1	4	0	1	0
Leighton	1	0	0	0	0	0
Preston Royal	1	2	4	0	0	2
East Cheshire	1	0	0	0	0	0

Wastage by Hospital

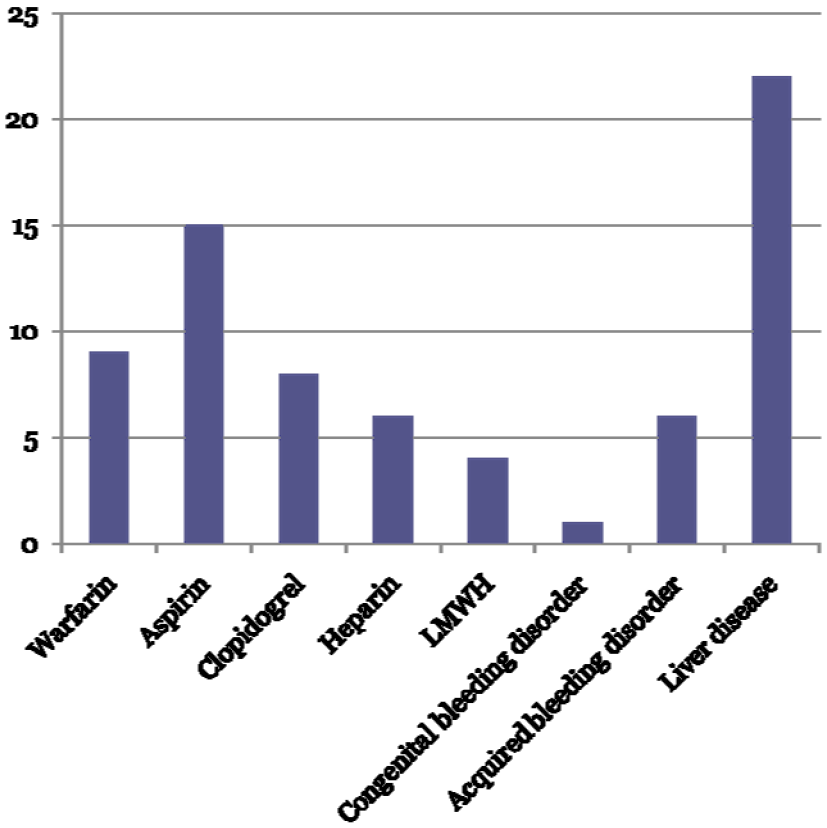


Adjunct and risk factors

Adjuncts



Risk factors



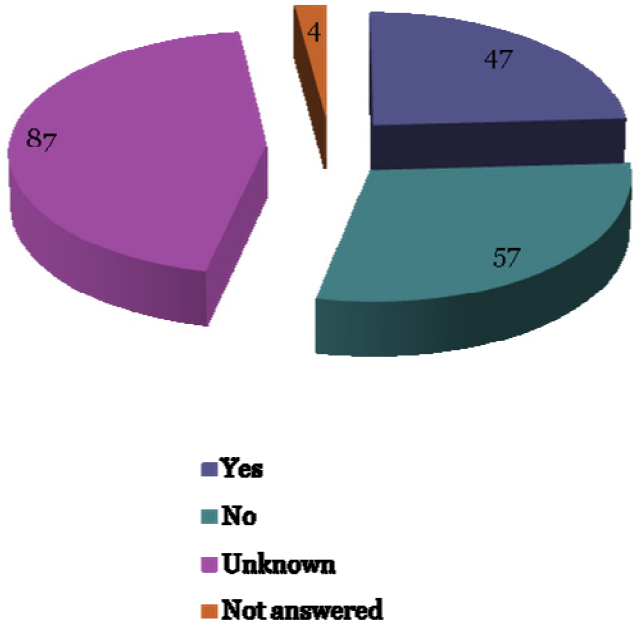
Afterwards.....

HDU/ITU

- 118 admitted to critical care (60.5%). Unknown for 5 patients

- Lab unaware of stand down in 29% cases

Lab informed of stand down

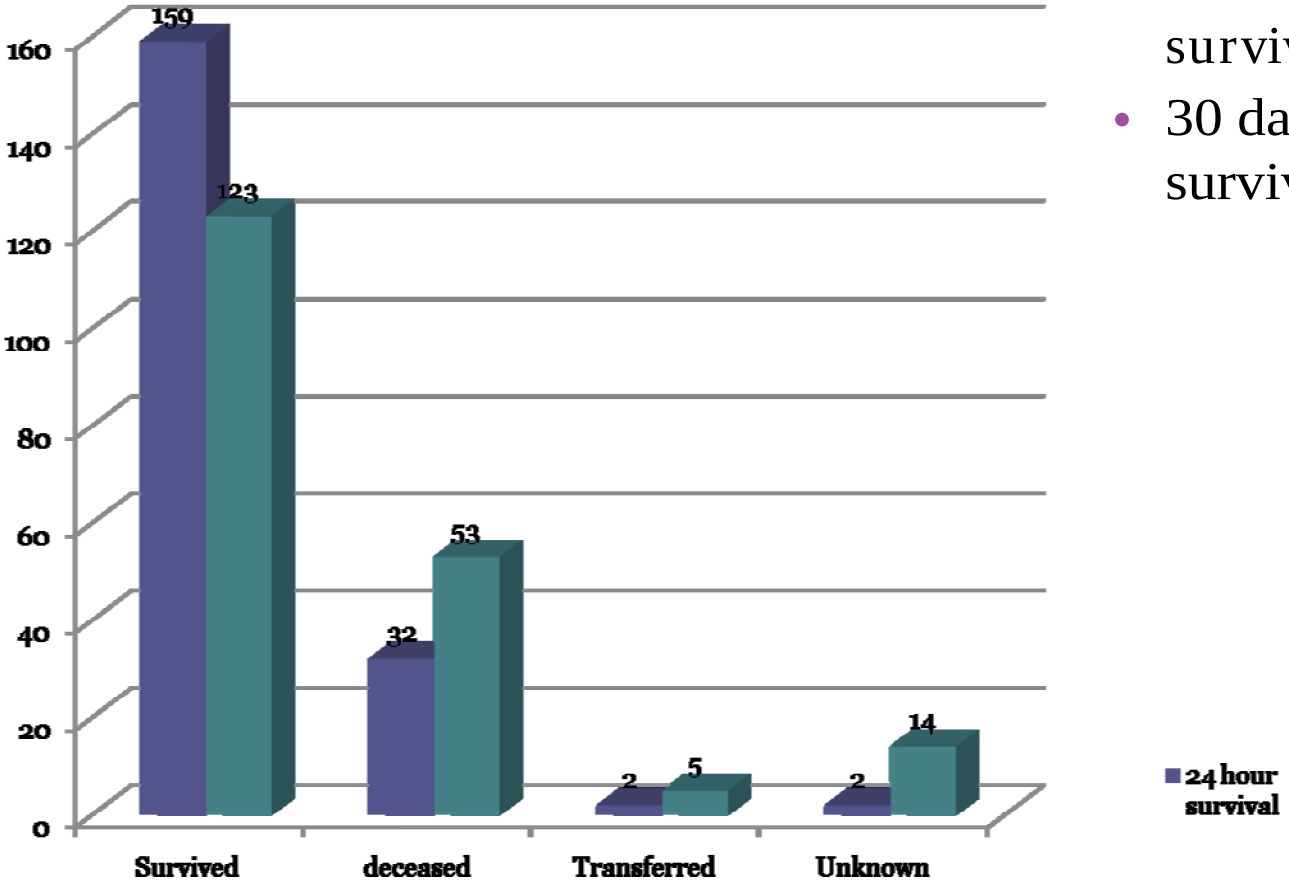


Complications

- 1- renal failure
- 3- transfusion reactions
- 12- multiorgan failure
- 1- thrombosis

- 12 patients specifically had bleeding as cause of death

Survival



- 24 hours = 81 .5% survival
- 30 days = 63% survival

Appropriate Activation?

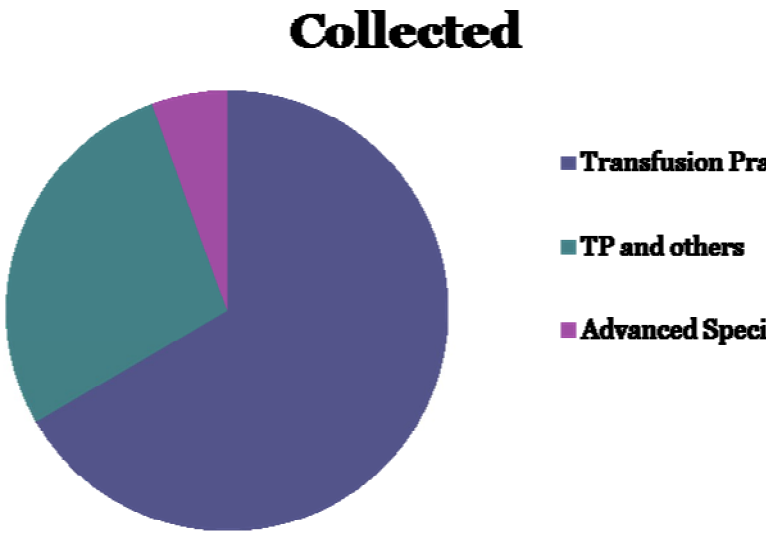
- 97 appropriate (49.7%)
- 68 not known (34.9%)
- 30 inappropriate (15.4%)
- No patients were reported to have suffered harm as a result of delay in transfusion

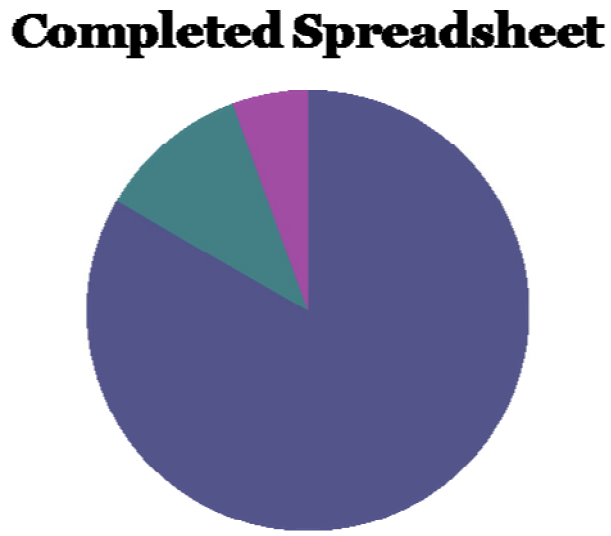
Learning Points as a Region?

- ?increase use of Tranexamic acid.
- Aim to decrease wastage
- Laboratory still not receiving communication about progress- need to improve on this aspect

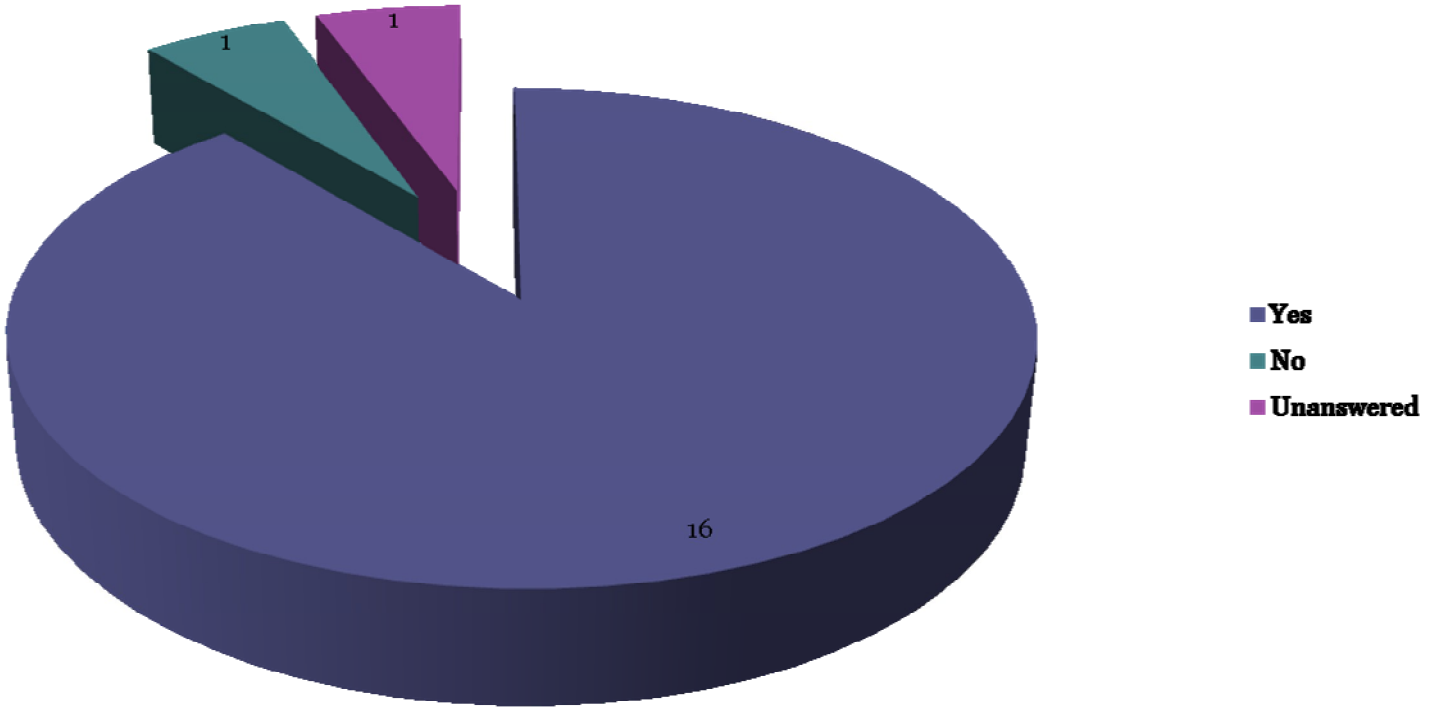
Questionnaire to feedback on Data Collection period

- 18 responses on questionnaire





Would you participate again?



Comments……..

- Missing info – Gender, estimated blood loss, haematology consultant informed
- Proforma not matching the spreadsheet, needs to capture all info.
- Need more input from clinicians involved in management
- Spreadsheet big with lots of “no” boxes
- 30 day survival “ a lot of work”, age calculator inaccurate.

Improvements to Toolkit/ data collections set

- Improved way of collecting data on time to first products
- Attempt to gain meaningful information on whether wastage was avoidable or unavoidable
- Blood results- simplifying which results and focusing if normal/ abnormal

2nd data collection period (preliminary results)....

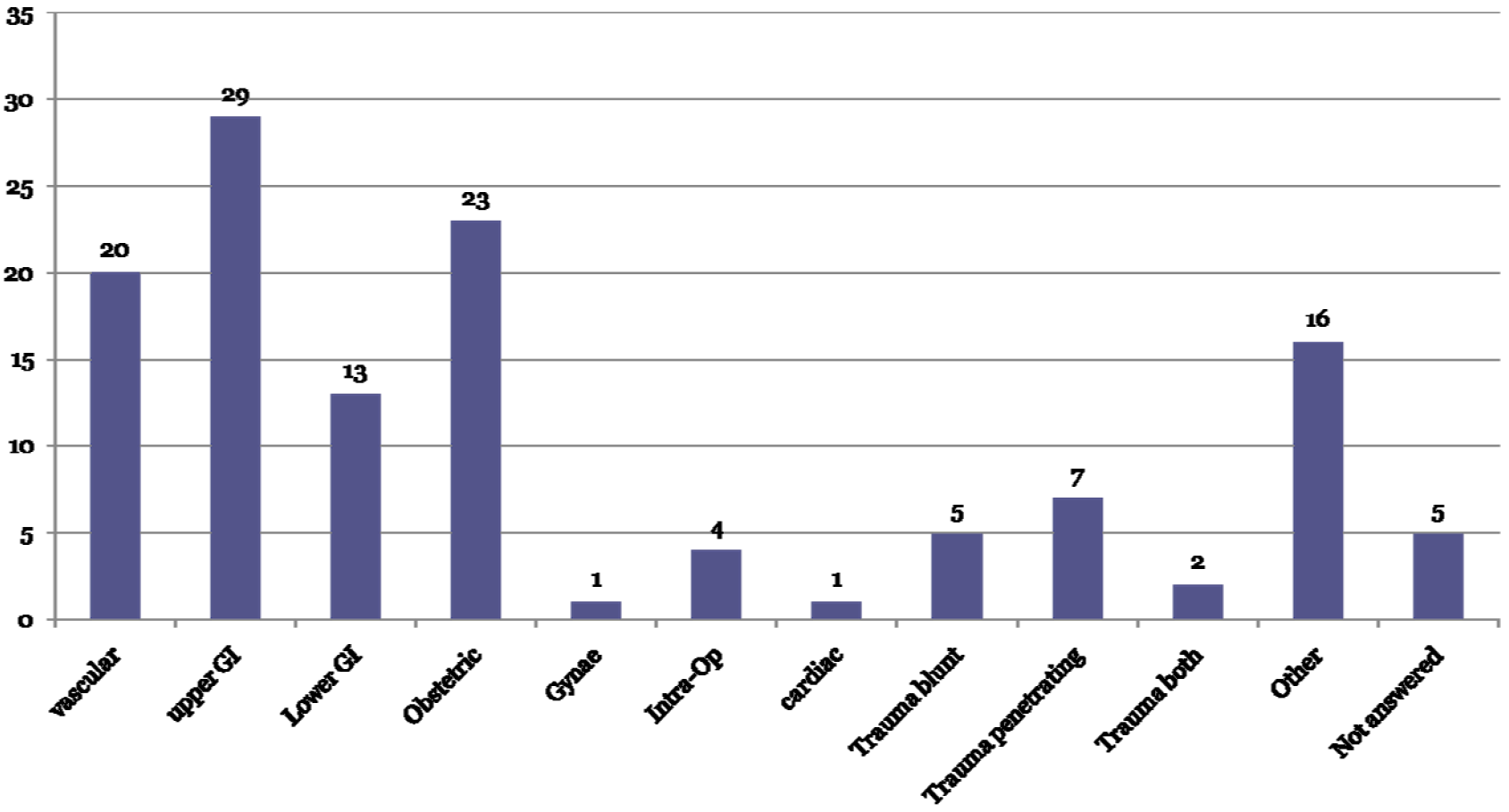
- 6 trusts have submitted data
- 4 trusts have responded with “no activations” having occurred.

- Total of 121 Cases so far (5 paediatric cases also submitted)

Further results

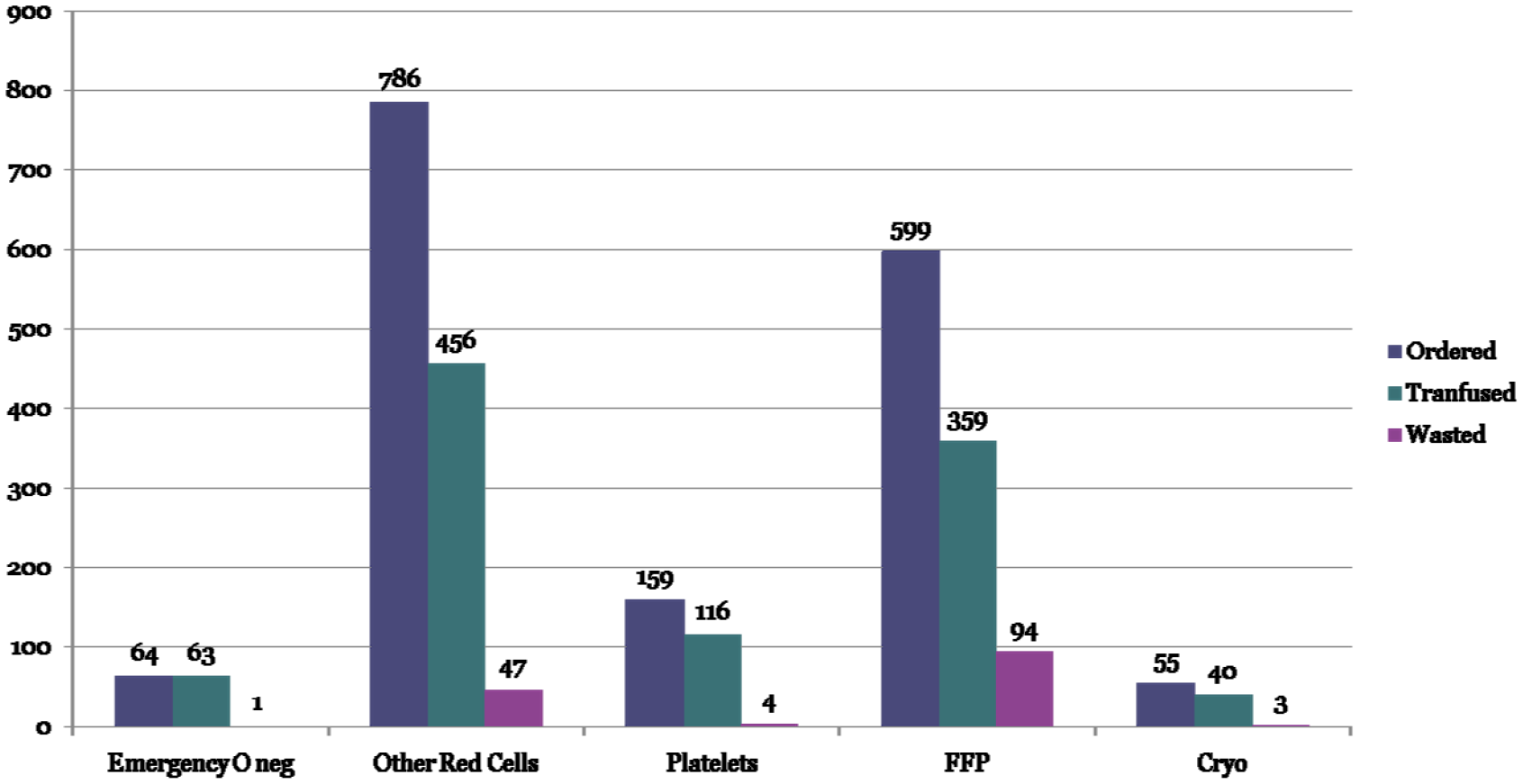
- Emergency cases 101 of 126 (83%)
- Pathway not activated in 19 cases (16%)- not answered in 5 cases.
- Lab not informed in 3 cases (2%).

Presentation



- Of the 14 trauma cases 5 had a trauma call put out (36%)
- 26 cases used O Neg. Emergency blood (time to supply not answered in 15 cases, unknown in 2, issued “pre activation” in 4).
- Time to be given submitted for 5 cases. Range 6 to 68 mins, mean=32.6 mins.

Total units ordered, transfused and wasted



Cell salvage and Laboratory tests

- Cell salvage was used in 19 cases (15.7% cases). Unknown if used in 26 cases.
- Fibrinogen checked in 46 cases (38%), unknown in 1
- TEG used in 12 cases (10%), unknown in 7, not answered in 1.

Tranexamic acid

- Used in 19 cases (16%), Unknown in 18, not answered in 30

- Of the 14 trauma cases it was used in 3 cases (21%), not used in 6 (42%), unknown in 3 cases and not answered in 2 cases.

Outcome

- 54 % (65 cases) were admitted to critical care (question not answered in 7 cases)

- Lab informed of stand down in 38 cases (31%), not answered in 7 cases and unknown in 40 cases. 30% cases lab not informed

- At 24 hours 18 patients had deceased (15%), 1 was transferred and this was not answered in 6 cases.

So what next?

- Awaiting remaining data submission for 2nd audit period.
- Working group also in progress looking at use of TEG/ROTEM
- Ongoing modification to toolkit as new evidence arrives
- Continued development and sharing of resources throughout region.

Thank you for listening