

Where and When is blood transfused?

Right blood, Right **place**, Right **time**

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20th November 2006

SHOT & NBTC educational update



Background

- SHOT has repeatedly shown that 37% of clinical transfusion errors resulting in IBCT occur outside core hours
- Denominator data lacking
 - How many units are transfused out of hours?

The Where and When study

- Collected data on time, location and speciality of all red cell units transfused over a 7 day period in participating hospitals in Northern and Yorkshire regions
- With the support of Northern and Yorkshire RTCs and Hospital Transfusion Teams

Aims

- Identify denominator data on time and location of transfusions and compare with SHOT data for same year
 - Objective 1-establish proportion of units transfused in and out of core hours (08:01-20:00)
 - Objective 2 -establish location of transfusions using SHOT headings
 - Objective 3-gather data about use by specialities

How did we do it?

- Approached all HTTs in Northern and Yorkshire regions
- Asked HTC chair to get necessary approval (Data could not be traced to patient)
- Chose “normal” week-3rd week in September 2005, Sunday to Sunday

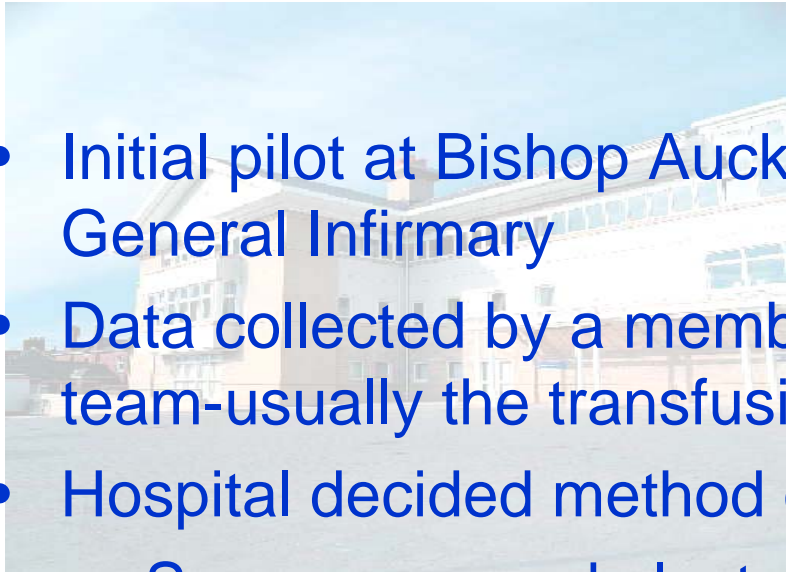
- Locations

- Theatre/recovery
- ITU/HDU/SCBU
- OP/DU
- A&E
- Wards
- Other

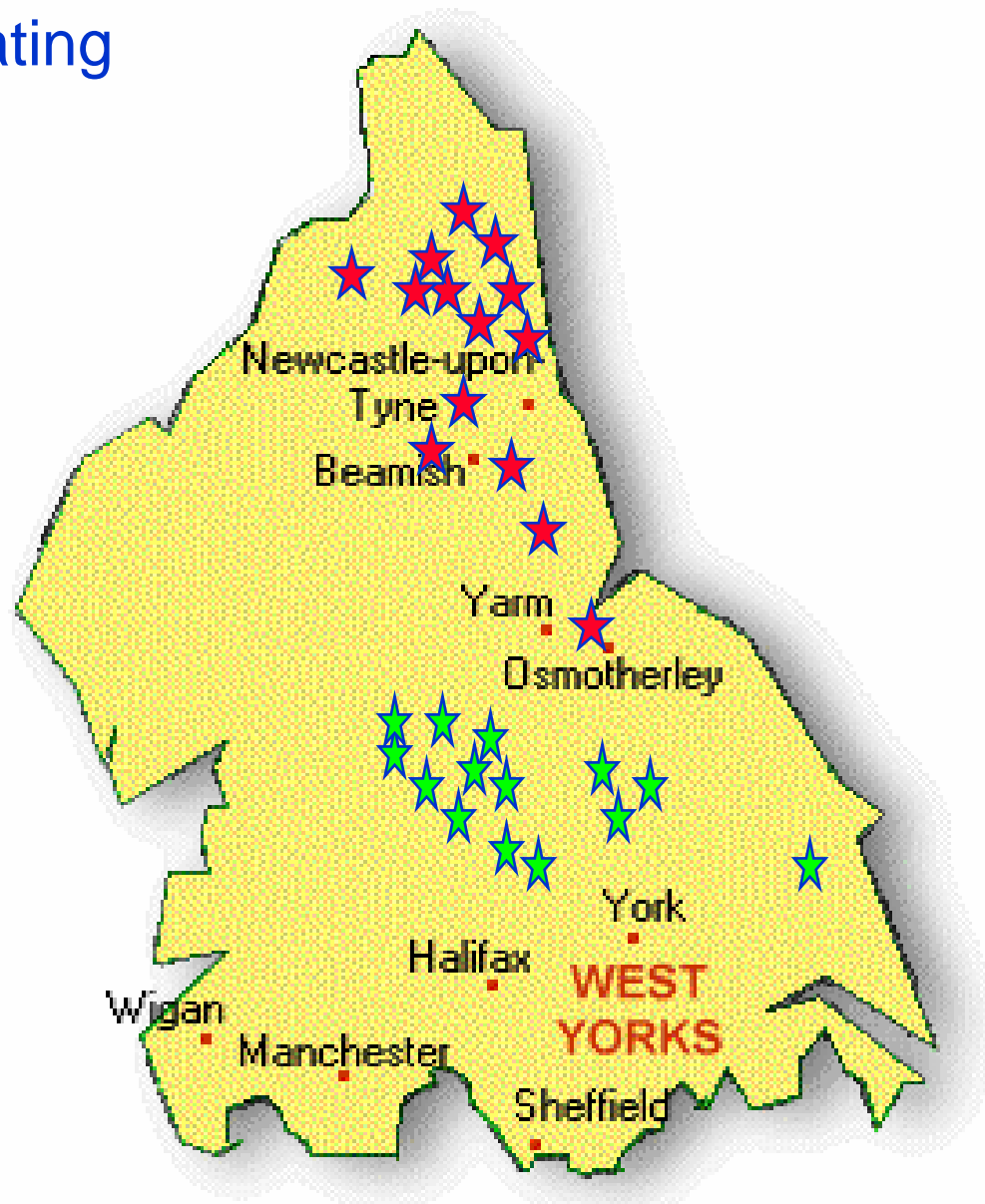
- Specialities

- Elective surgery
- Emergency surgery
- Obstetrics
- Gynae
- Haem/Onc
- GI
- Paeds/neonates
- Medicine

- Initial pilot at Bishop Auckland Hospital and Leeds General Infirmary
- Data collected by a member of the hospital transfusion team-usually the transfusion practitioner
- Hospital decided method of data collection
 - Some accessed electronic systems
 - Most had to trawl through notes
 - Footwork!
- Data transferred onto Excel spreadsheet using “Eyes and hands” optical scanning



28 participating hospitals



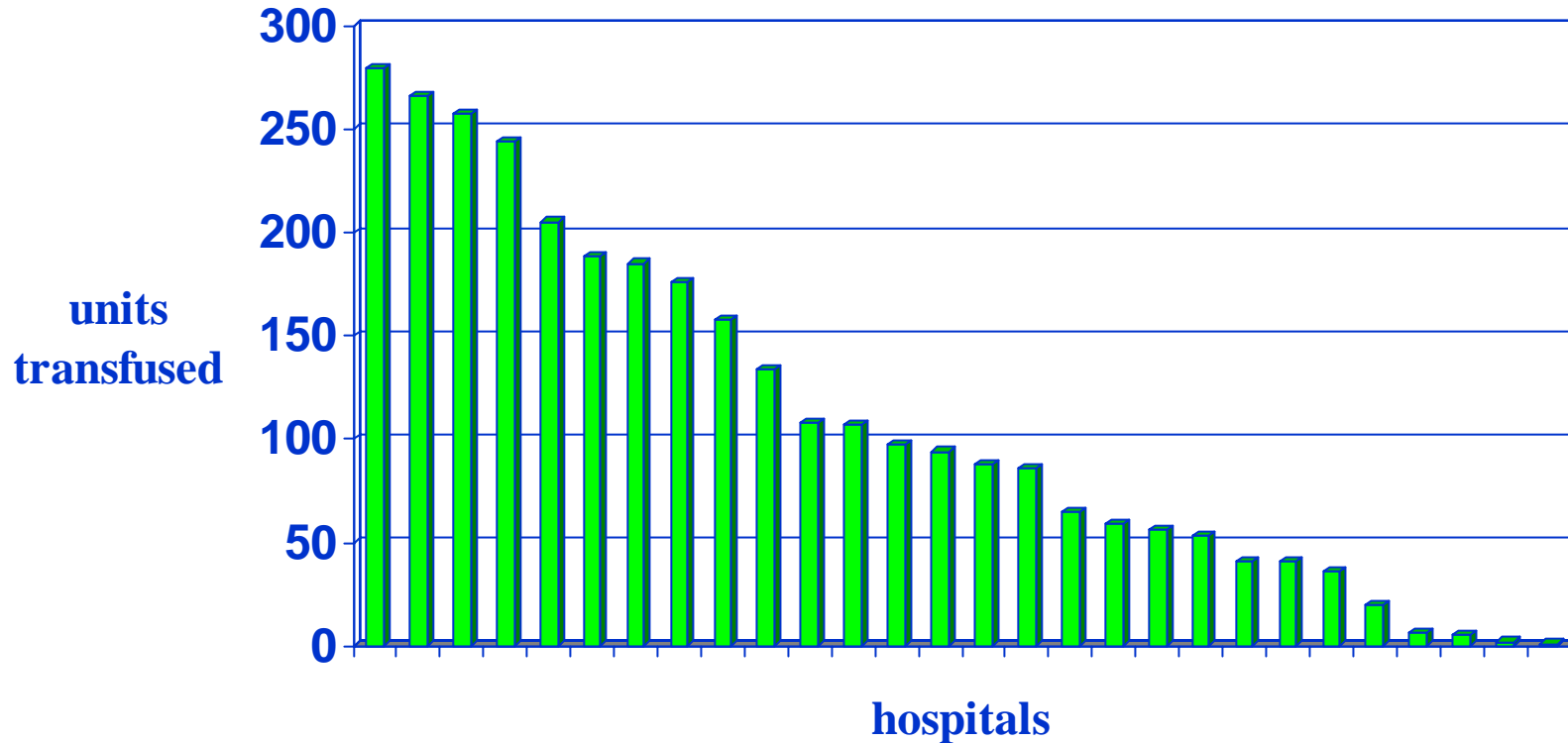
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Participating Hospitals

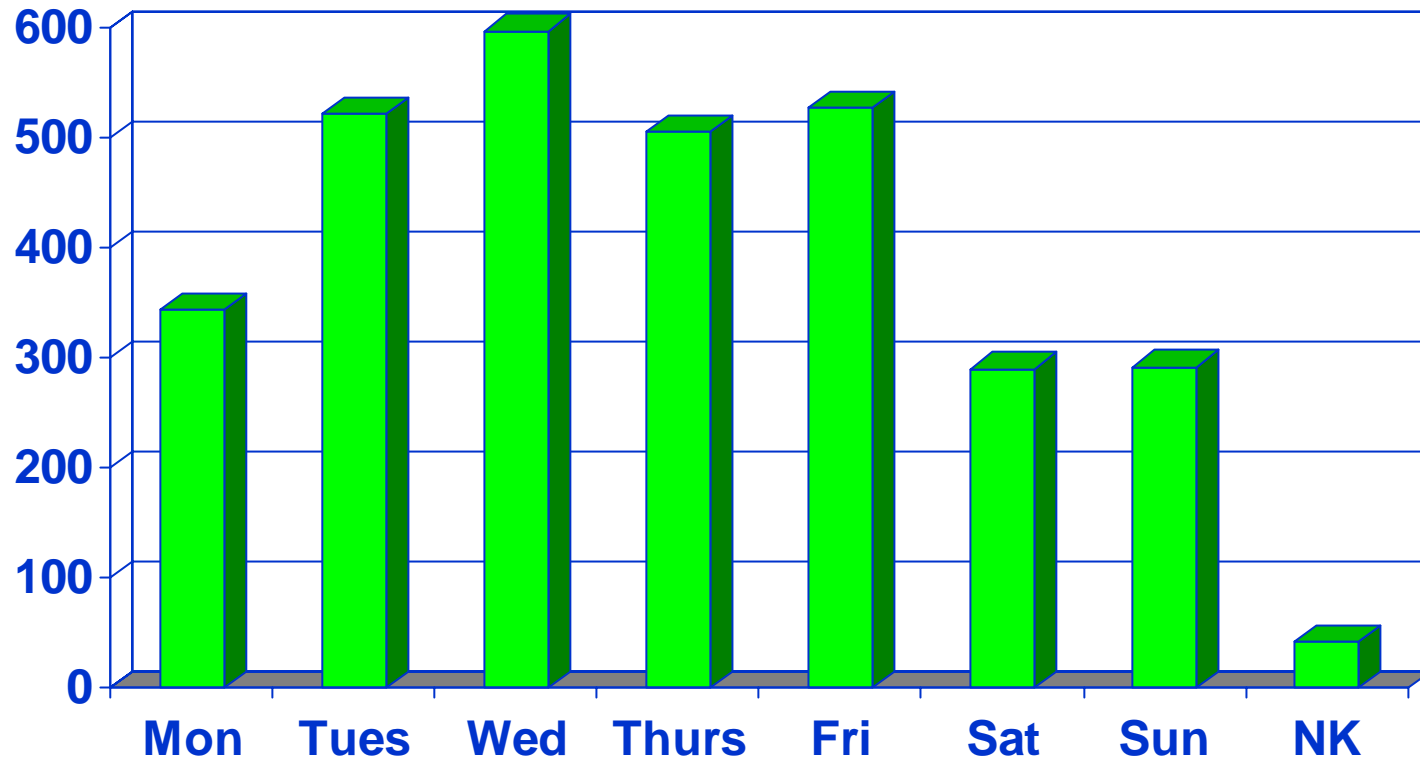
average number units transfused per week-108



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More transfusions happen on a Wednesday!

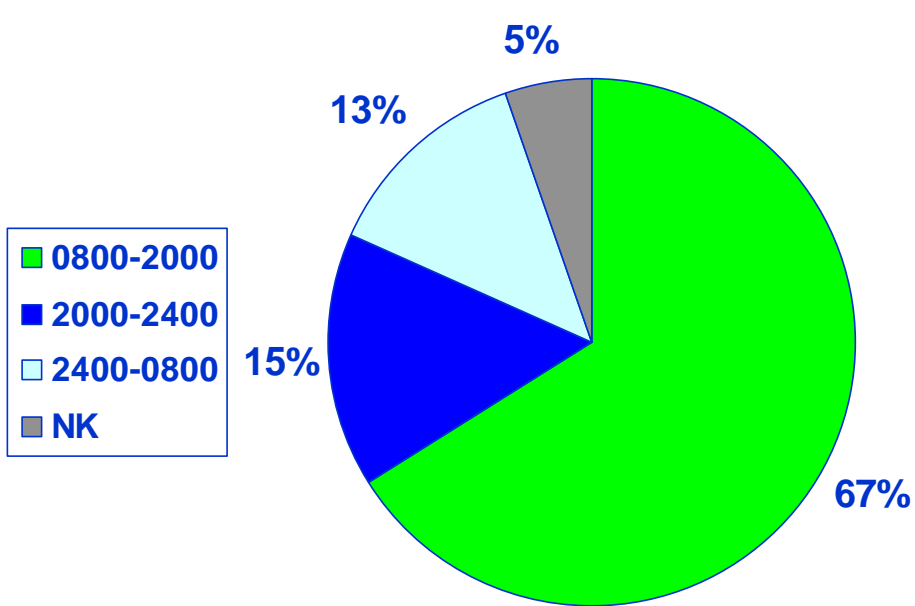


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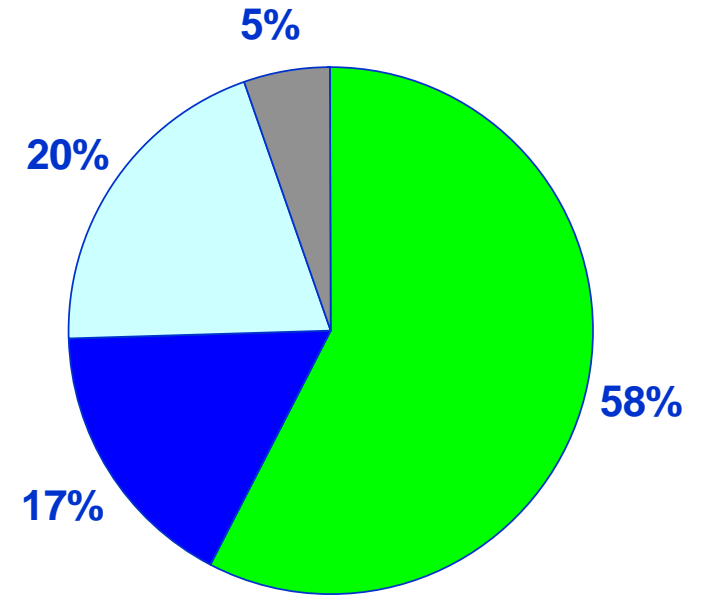
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Time of transfusion



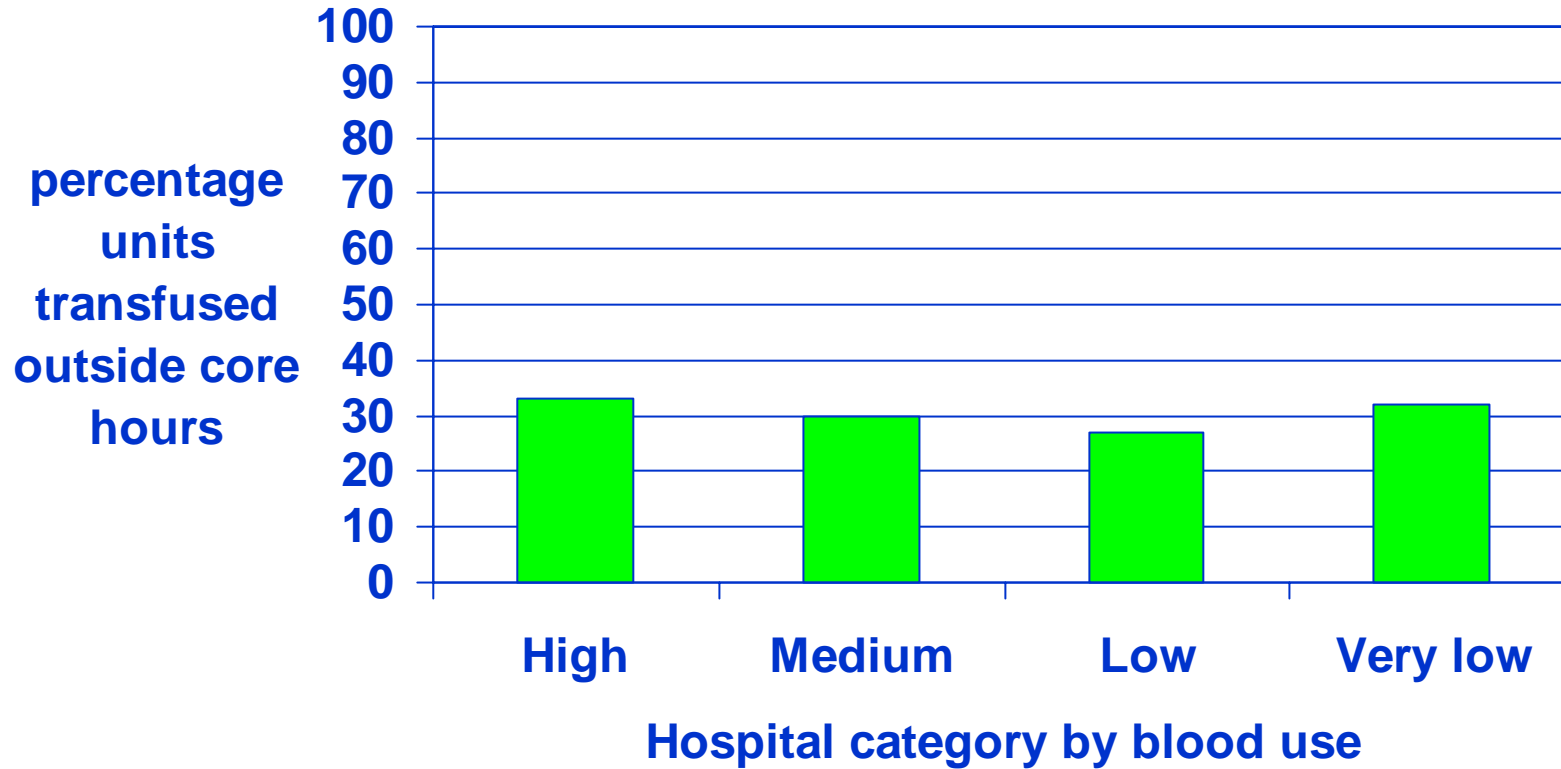
Northern and Yorkshire data
(3118 units)



SHOT data 2005
(169 reports)



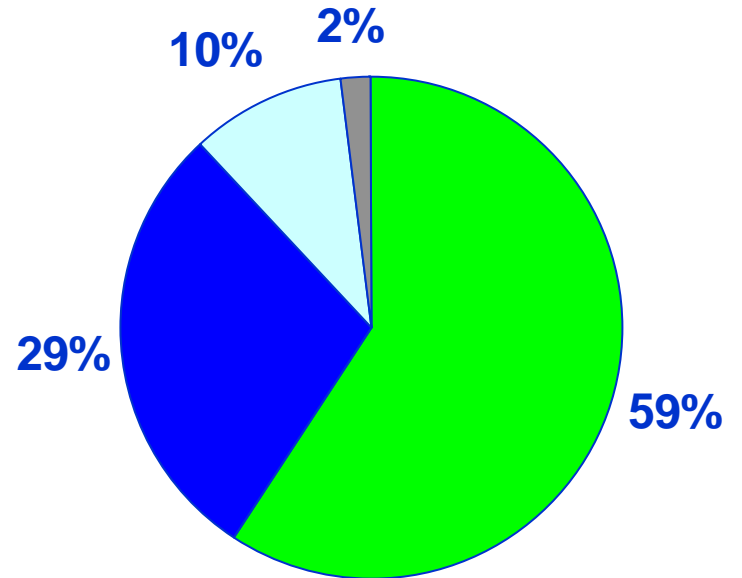
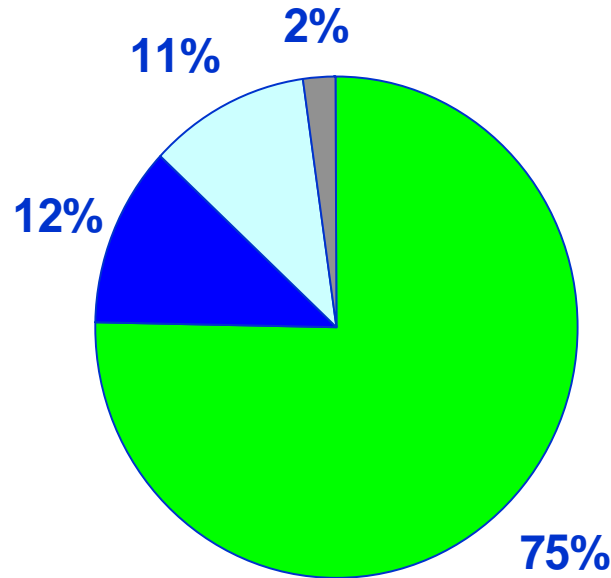
Hospital activity did not affect Out of Hours transfusion rate



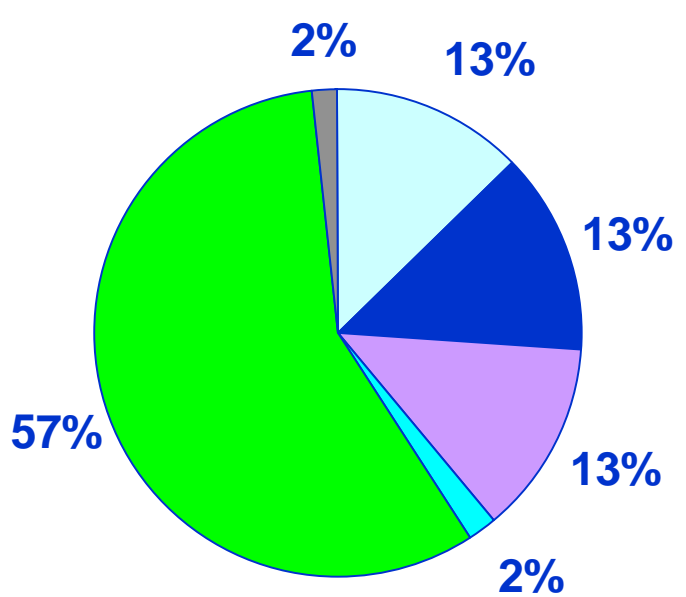
Risks-Timing

- Out of hours transfusion is **risky**
 - 28% (889/3118) of transfusions take place between 2001 and 0800
 - 37% (63/169) of SHOT errors happen then ($p < 0.03$)

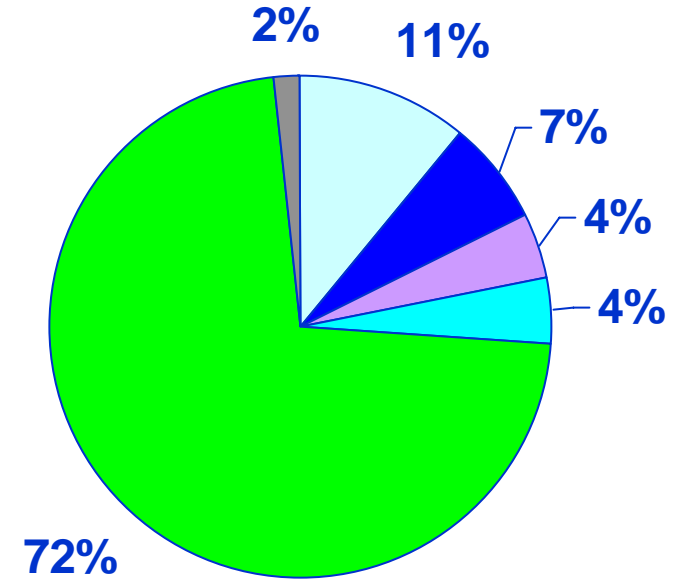
Time of transfusion-two large hospitals



Transfusion Location



Northern and Yorkshire data



SHOT data 2005



Risks-Locations

- Transfusions in certain clinical areas carry more **risk**
 - 57.5% (1794/3118) of units are transfused on wards but these account for 72.2% (122/169) of errors ($p < 0.001$)
 - 1.92% (60/3118) of units are transfused in A and E but these account for 4.14% (7/169) of errors

Safe locations?

- Day Units
 - 12.7% of units are transfused in day units but this location accounts for only 4.1% of errors ($p < 0.001$)
- ITU/HDU/SCBU
 - 13.4% units are transfused in these locations which account for only 6.5% of errors ($p < 0.001$)

Is it as simple as that?

- No!



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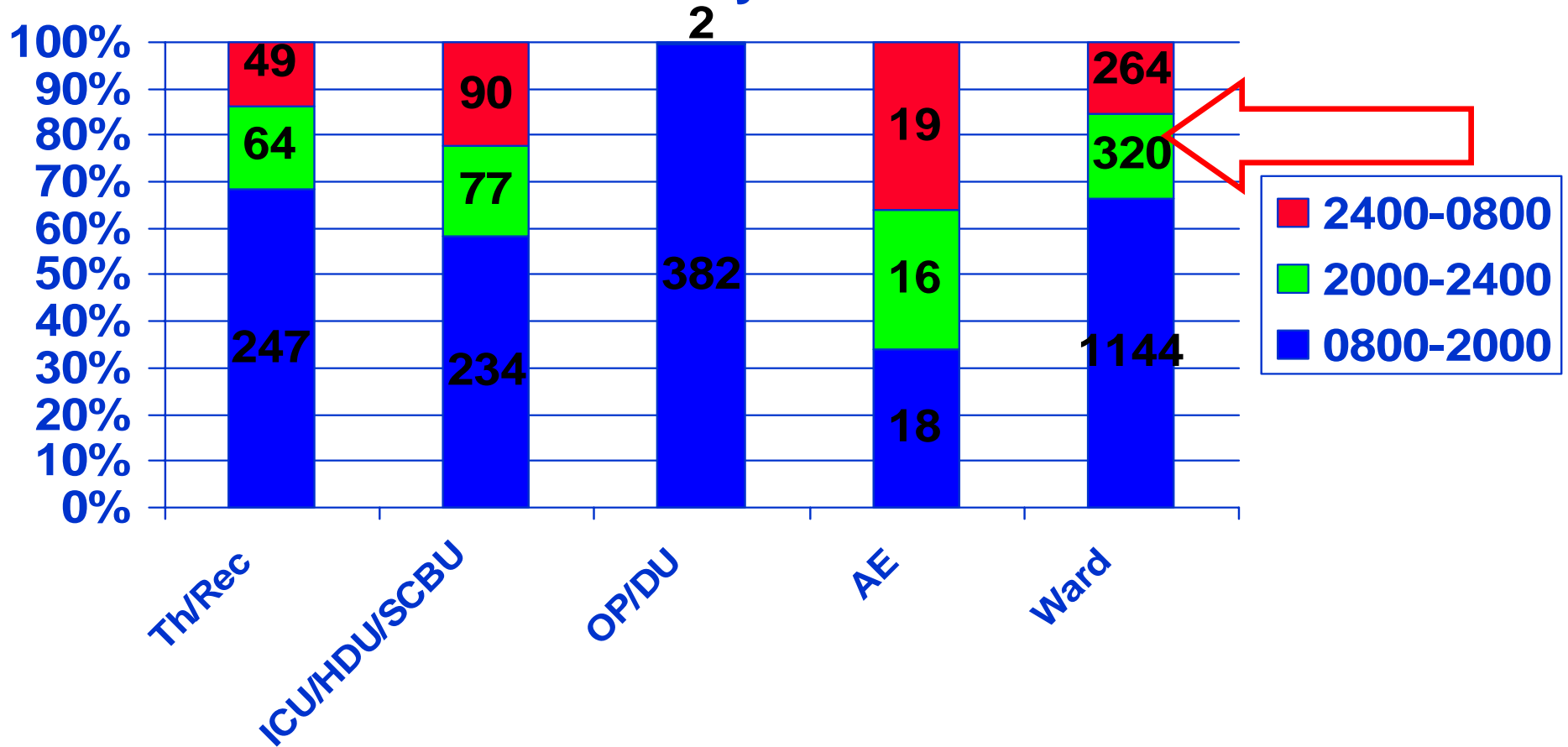
Is it as simple as that?

- No!
- Logistic regression shows that the proportion of out of hours transfusions varies :
 - between clinical locations
 - extent of variation depends on day of the week
- But.....

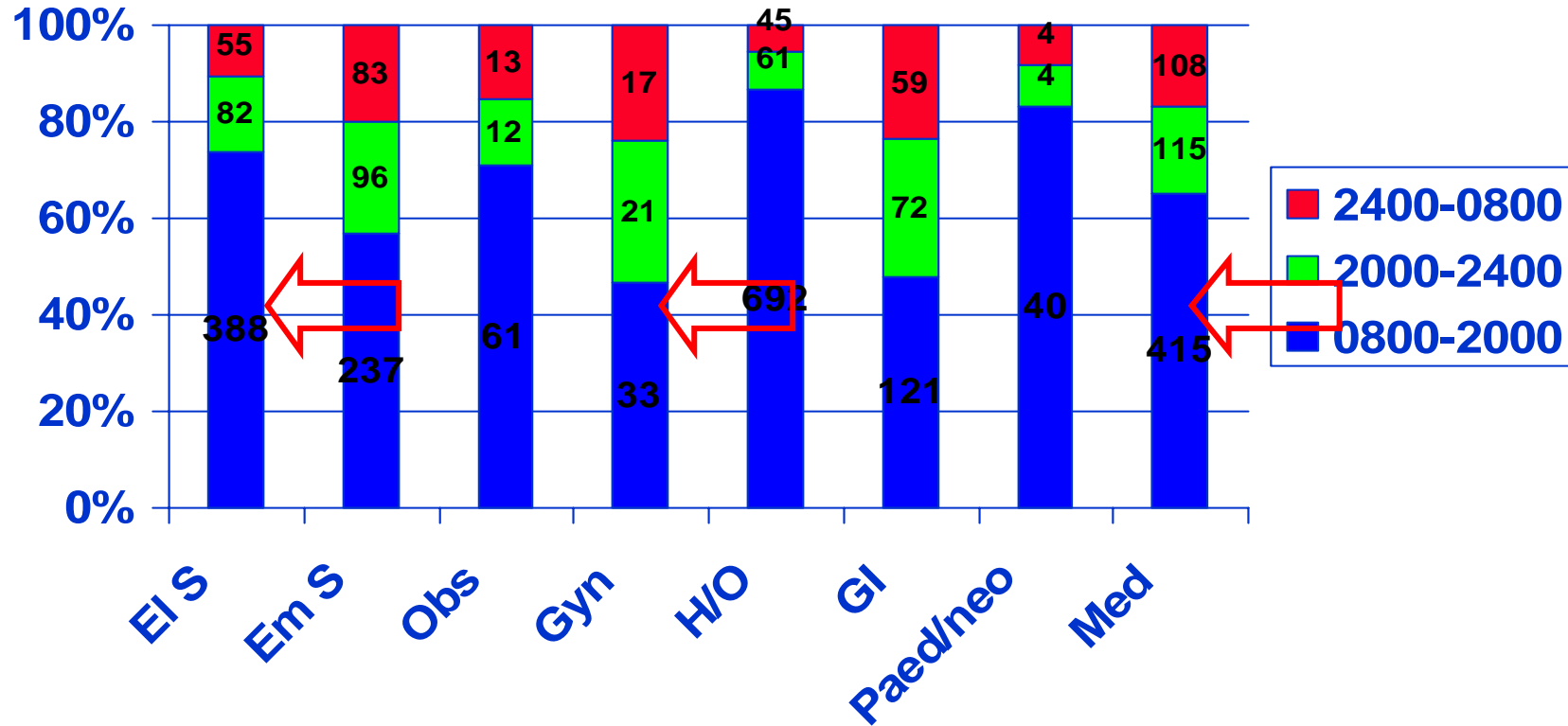
**Do transfusions outside core hours
appear risky because they are performed
in risky clinical situations?**



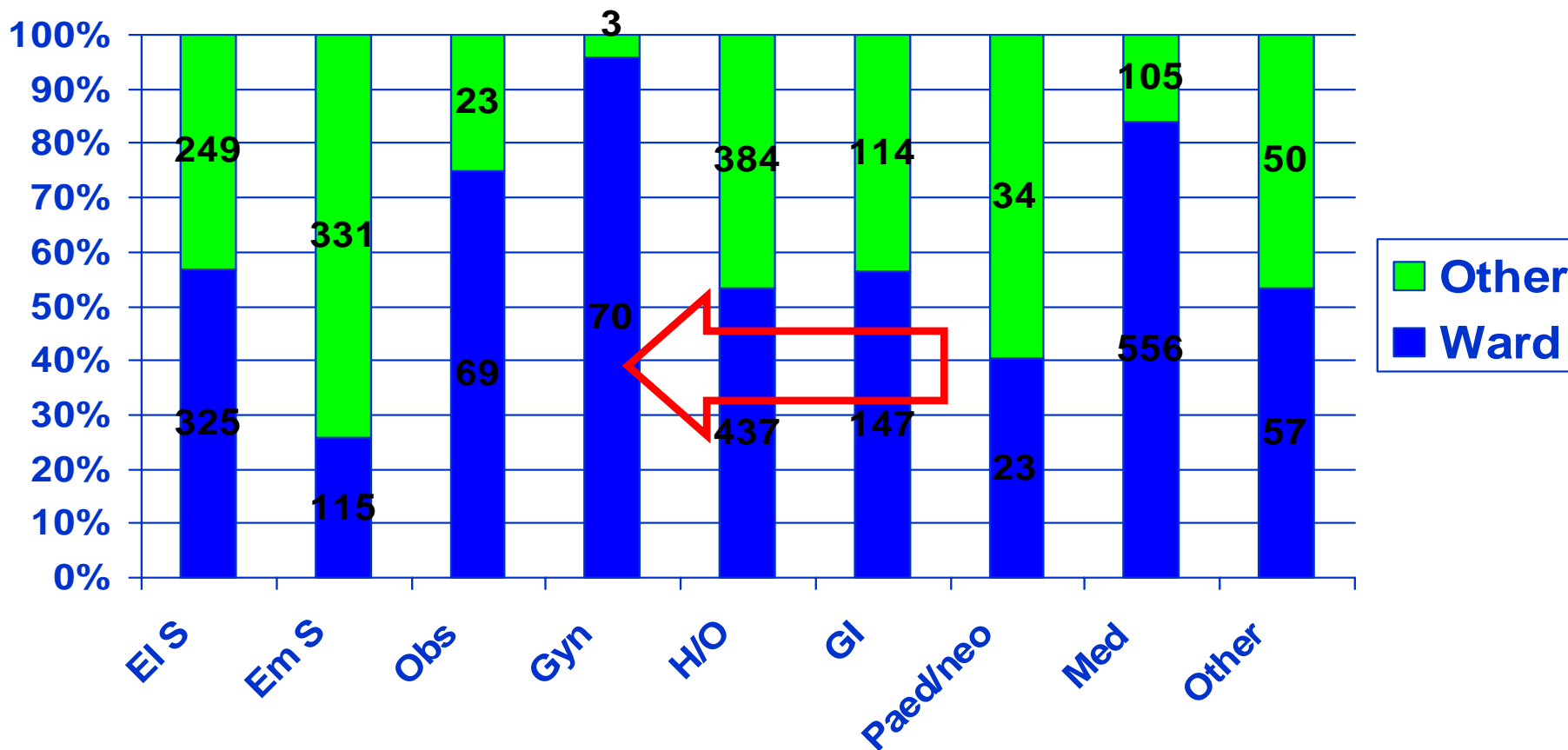
Out of hours transfusions as a percentage of blood use by location



Which specialities transfuse out of hours?



Ward-based transfusion as a percentage of total by speciality



Conclusions

- Evidence suggests that transfusion outside core hours is associated with more clinical errors
- It appears that not all transfusions outside core hours are urgent
- Use of blood in gynaecology in the Northern and Yorkshire region requires more study
- It would be helpful to repeat this study elsewhere

Thanks!

- To Jeni Whitehead and NBS audit department
- To Northern and Yorkshire RTCs
- To UKT statisticians
- But especially.....
- To all who collected our data!

