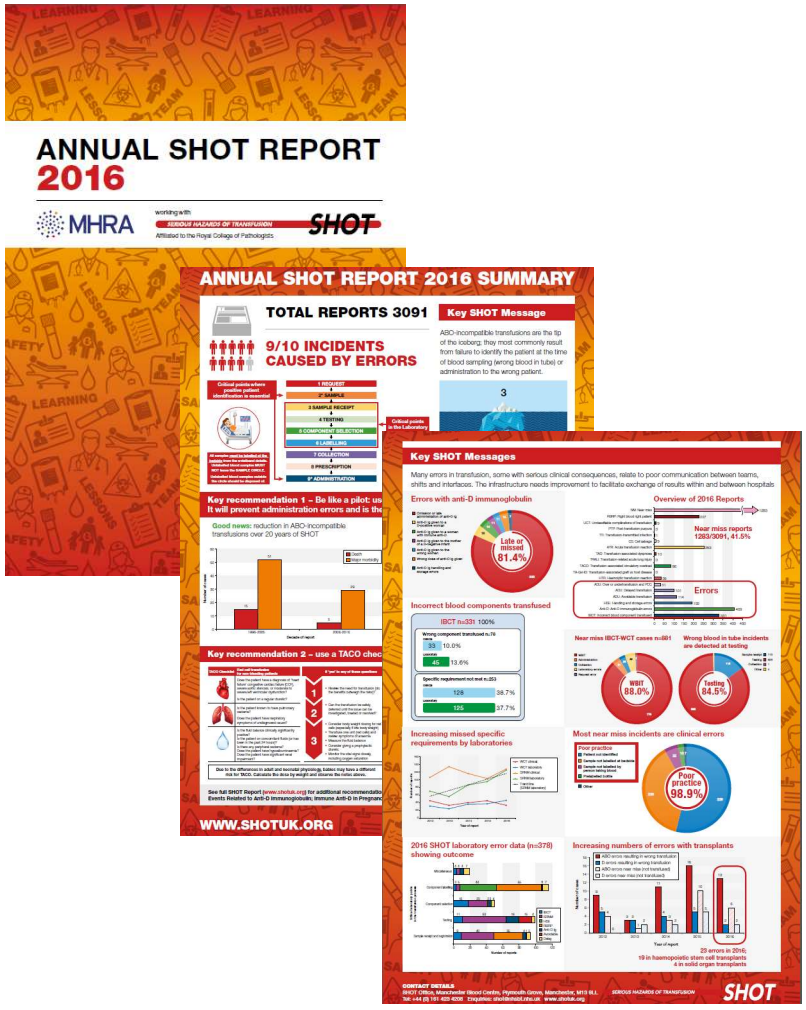
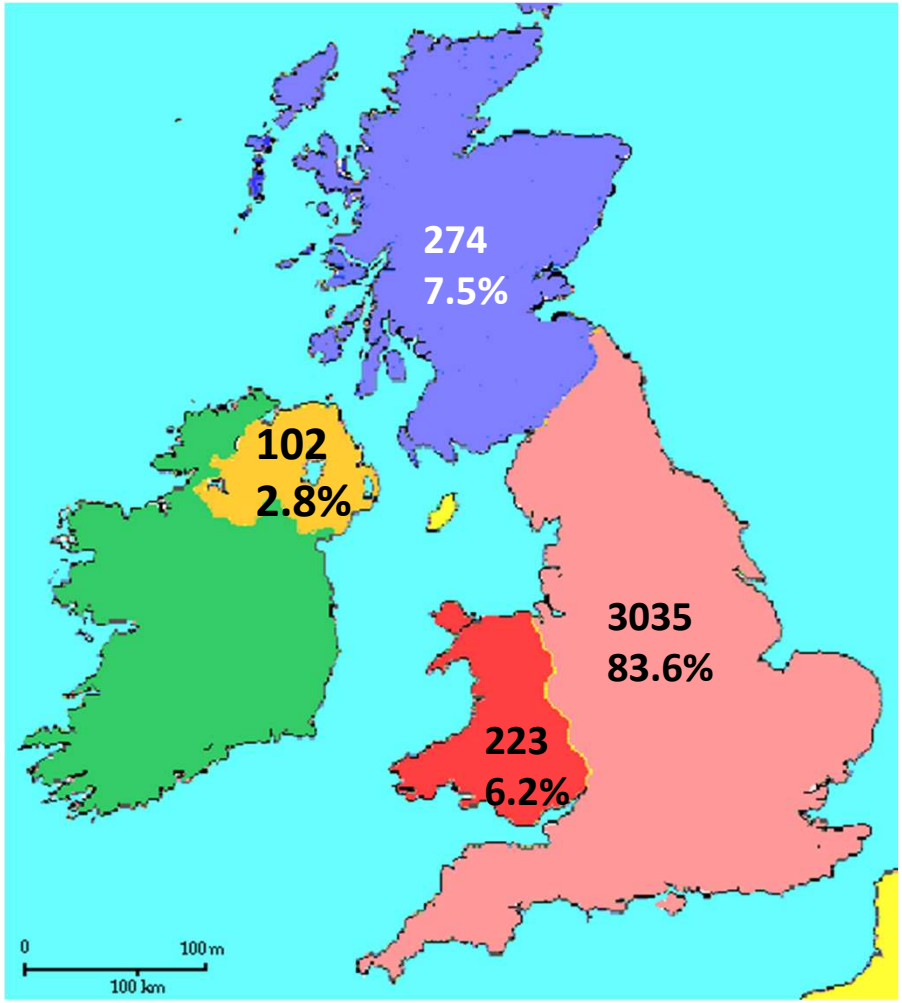
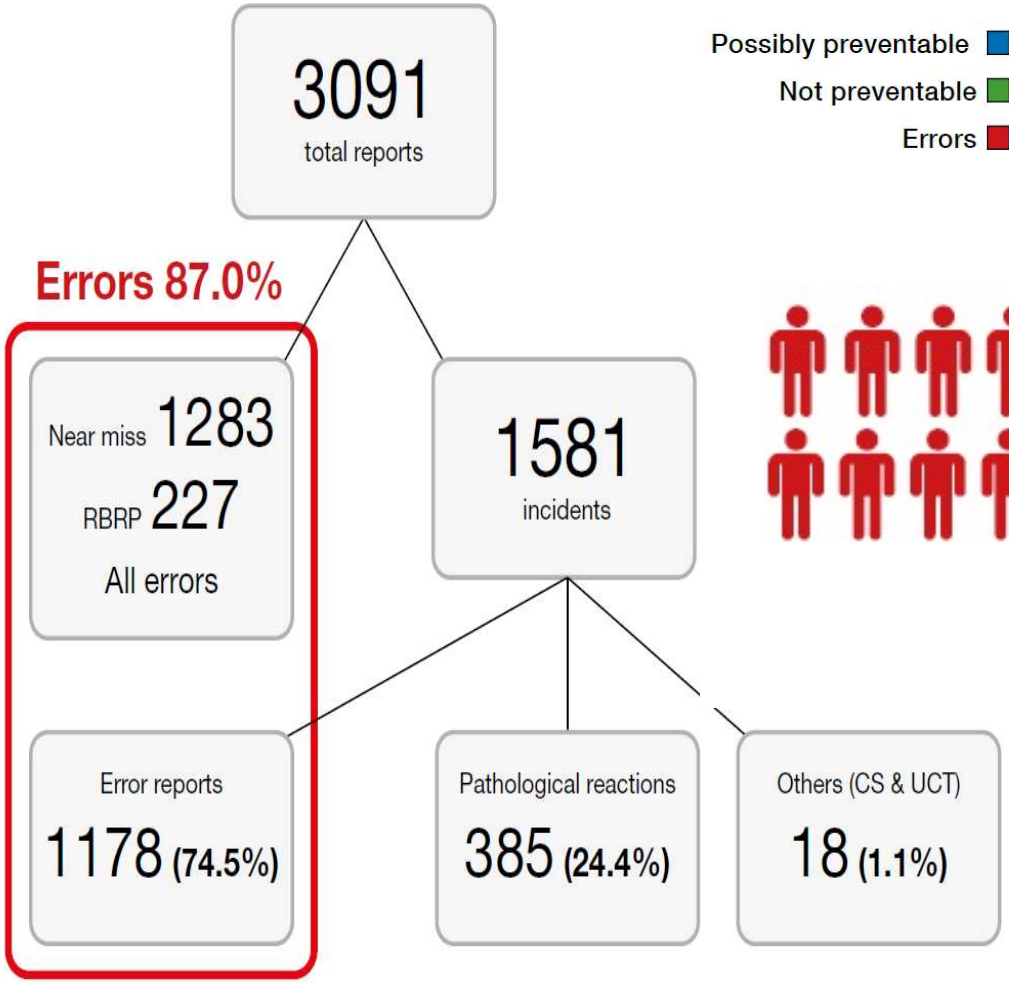
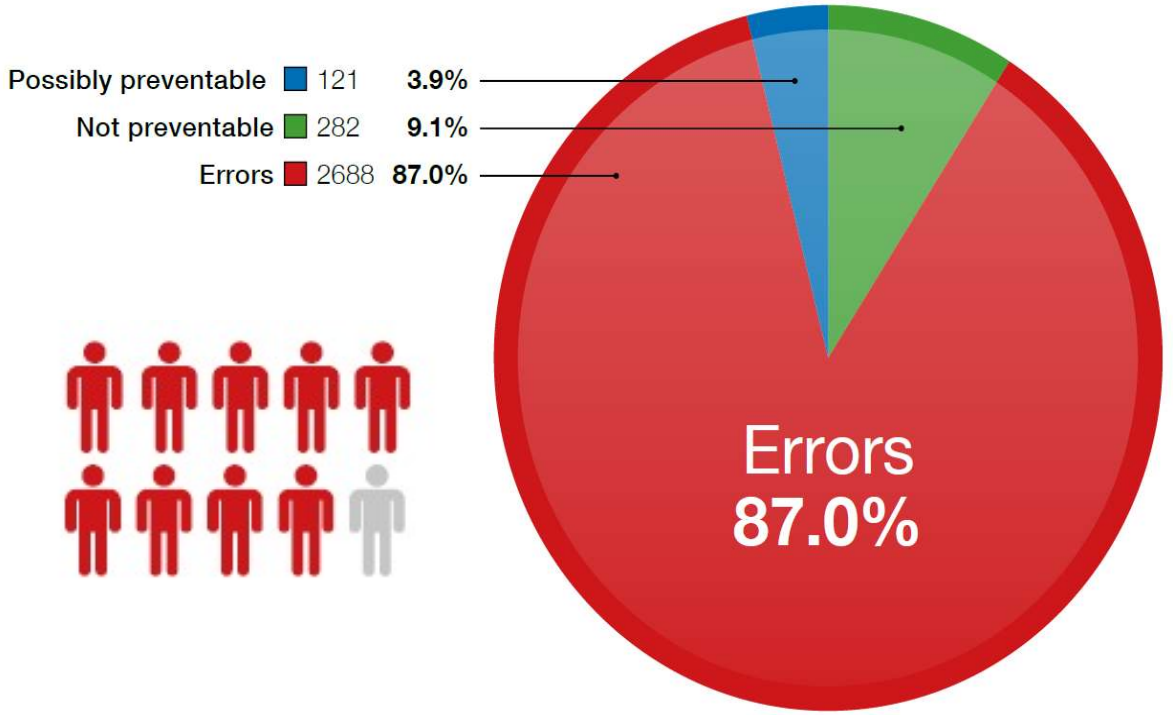
SHOT Report 2016 (n=3634)





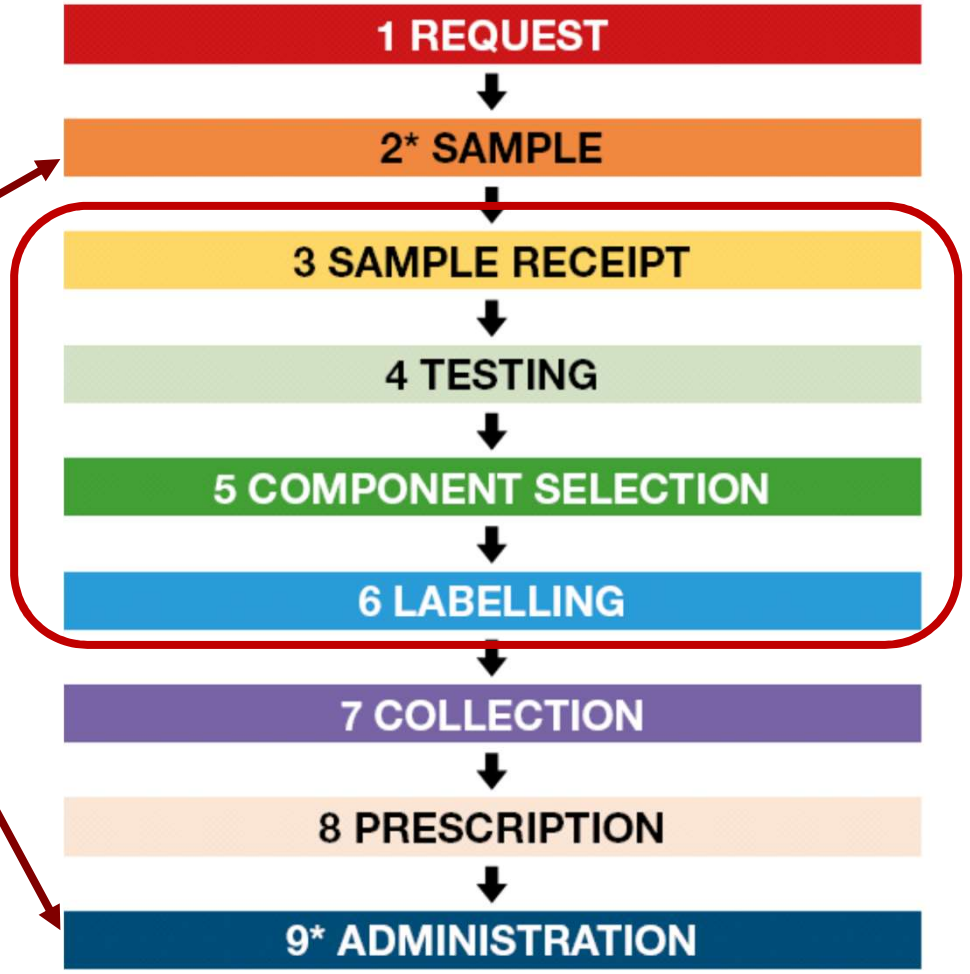
Errors





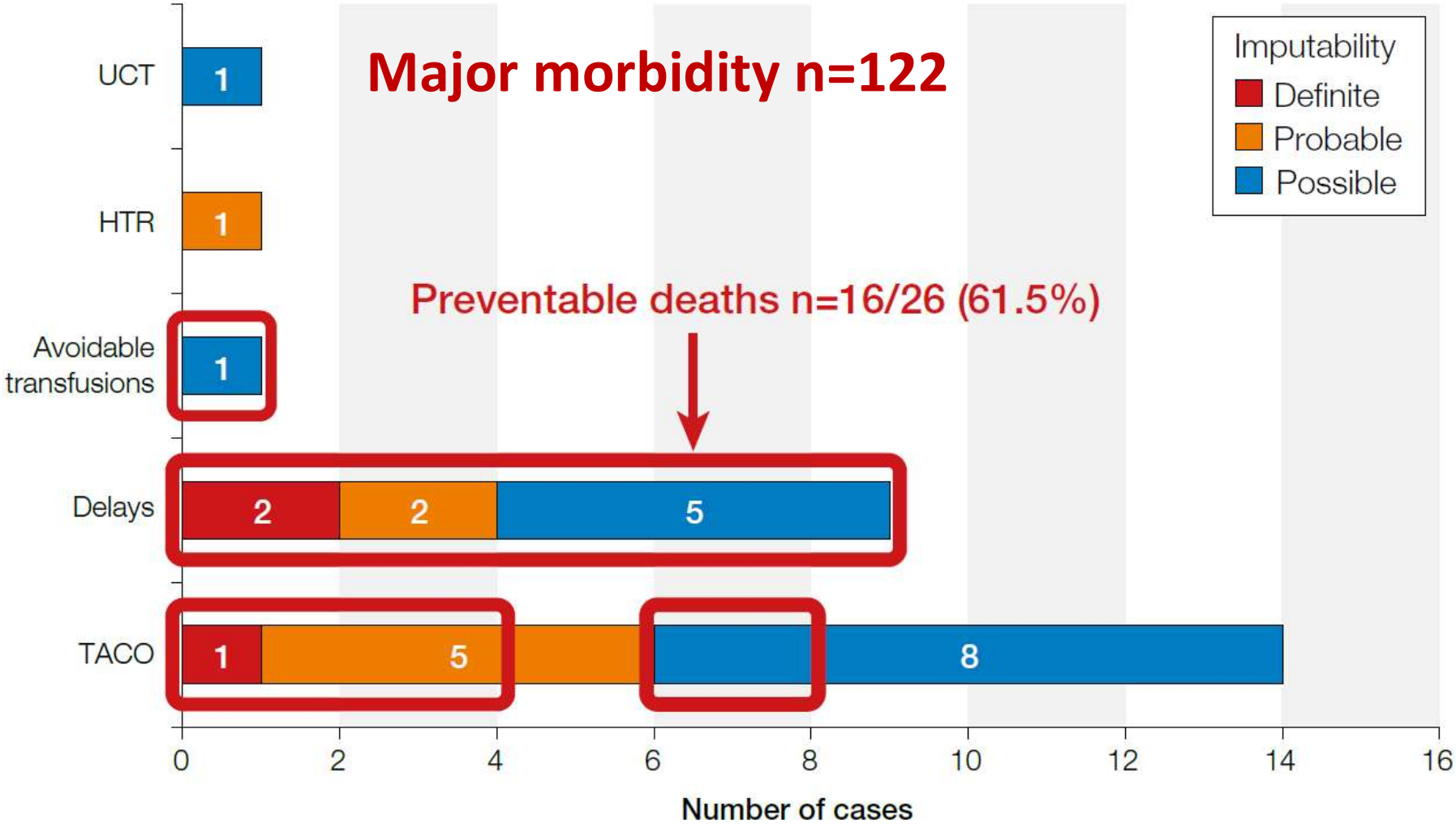
Critical points in the transfusion process

Critical points: Positive patient identification essential



Deaths & Major morbidity

Bad news: 26 patients died where transfusion was implicated



Laboratory error and poor communication

Wrong component transfused

Mother: anti-D and anti-C detected at 17 weeks gestation
Advised close follow-up with titres
Monitored in tertiary centre

Given the WRONG BLOOD
O D-pos (incompatible with maternal antibodies), should be O D-neg

Baby: induced delivery at 36 weeks in local centre: hyperbilirubinaemia, Group O D-pos
NICU staff were not aware of this baby prior to delivery; **not discussed in obstetric high risk meeting**

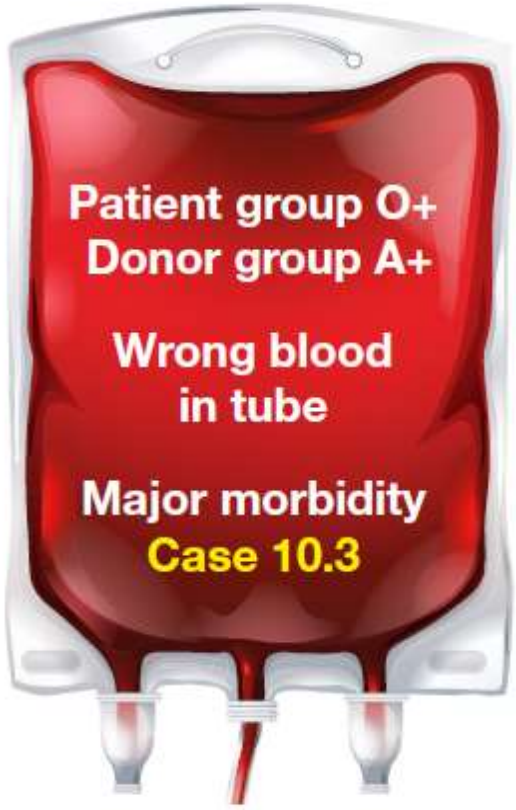
Policies not followed:
Day 3: Verbal requests for urgent blood for exchange
2 BMS did not look at maternal results so provided wrong group

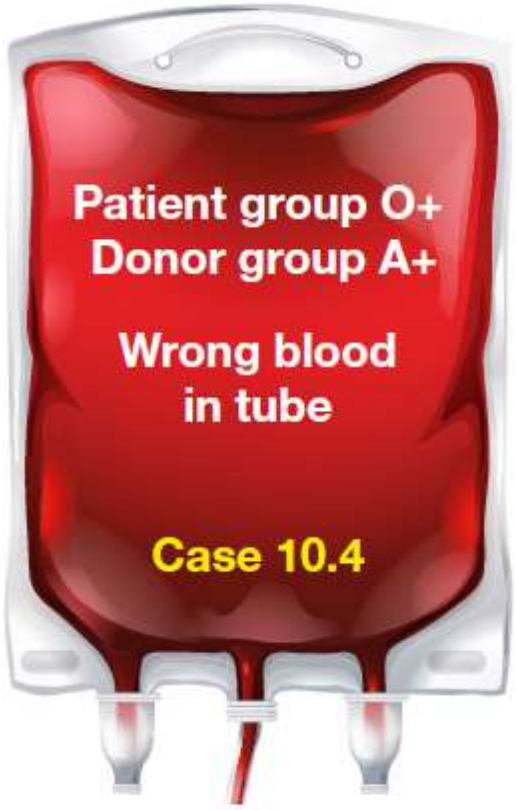
The baby required repeat exchange transfusion with O D-negative on day 6

What went wrong….

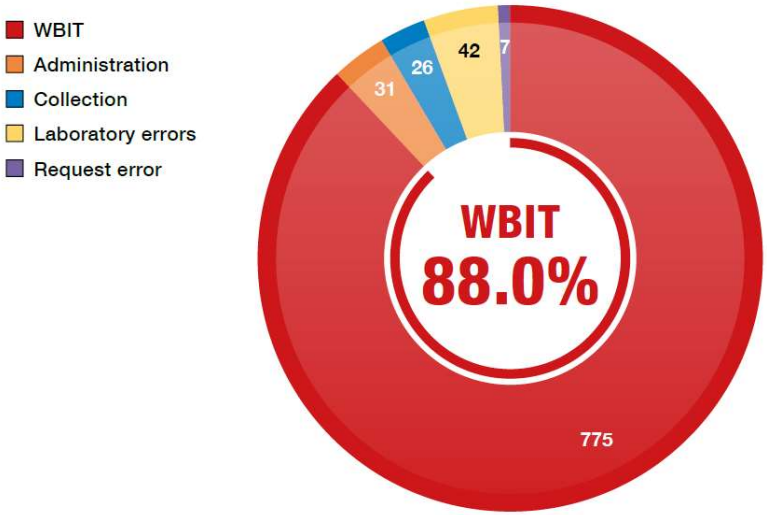
- Day 3 – clinician alerted laboratory, BMS did not review maternal details and issued O+ red cells
- All requests were by telephone, handover not effective and no follow up request form received by laboratory
- On several occasions BMS did not check mothers blood group and antibody results and issued 2 O+ red cells without crossmatching against the mother's sample
- Multiple other human factors contributed
- Kleihauer test was inappropriate due to the mothers antibody status and laboratory staff should not have issued anti-D Ig

ABO-incompatible red cell transfusions (n=3)

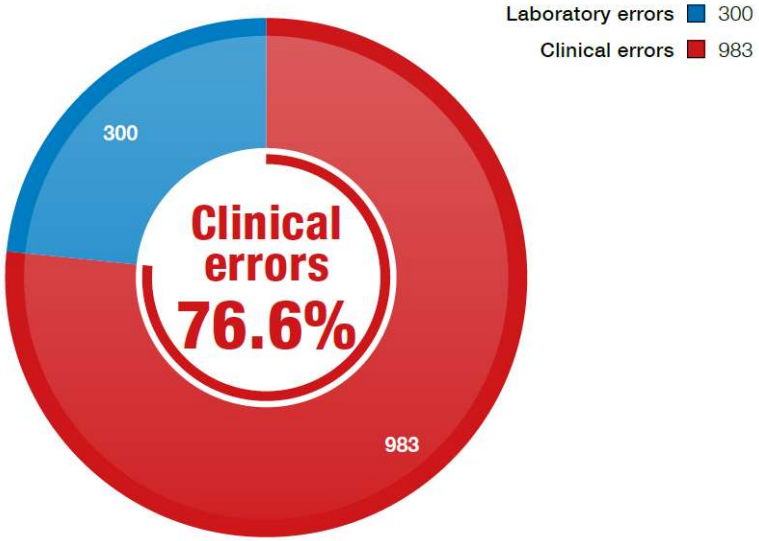




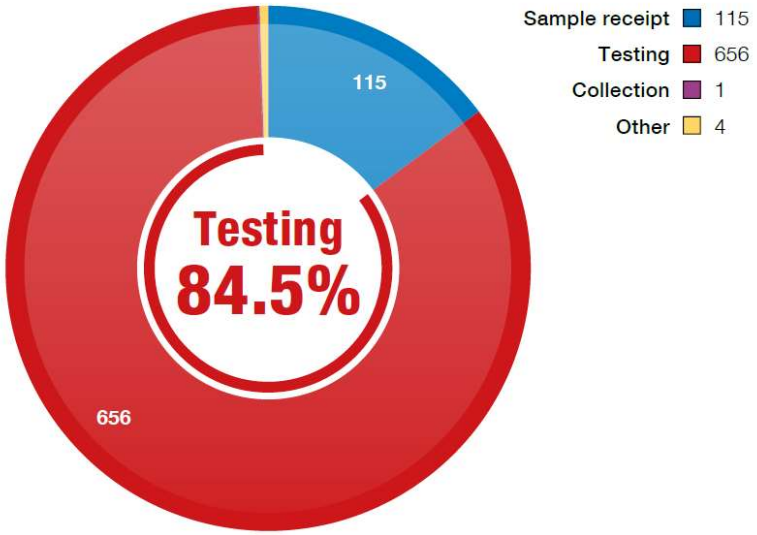
Near miss IBCT-WCT cases n=881

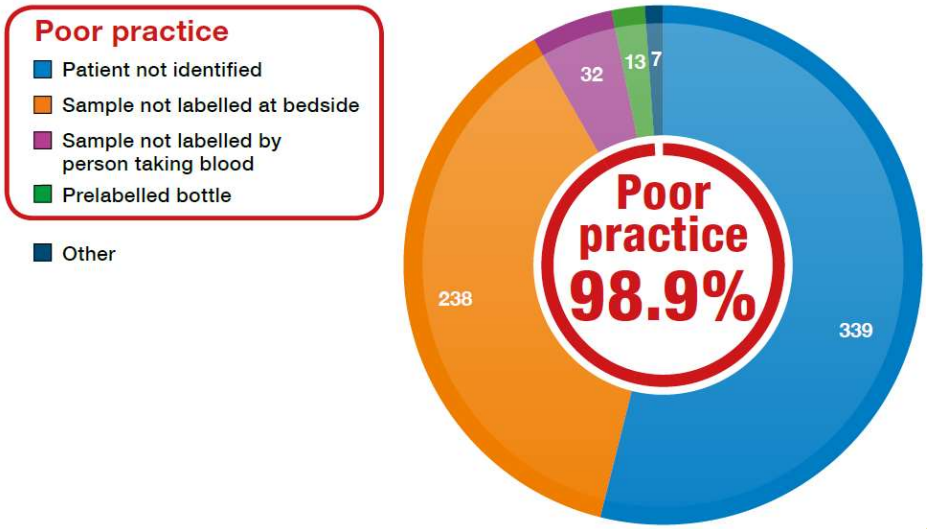


Overall source of near miss errors



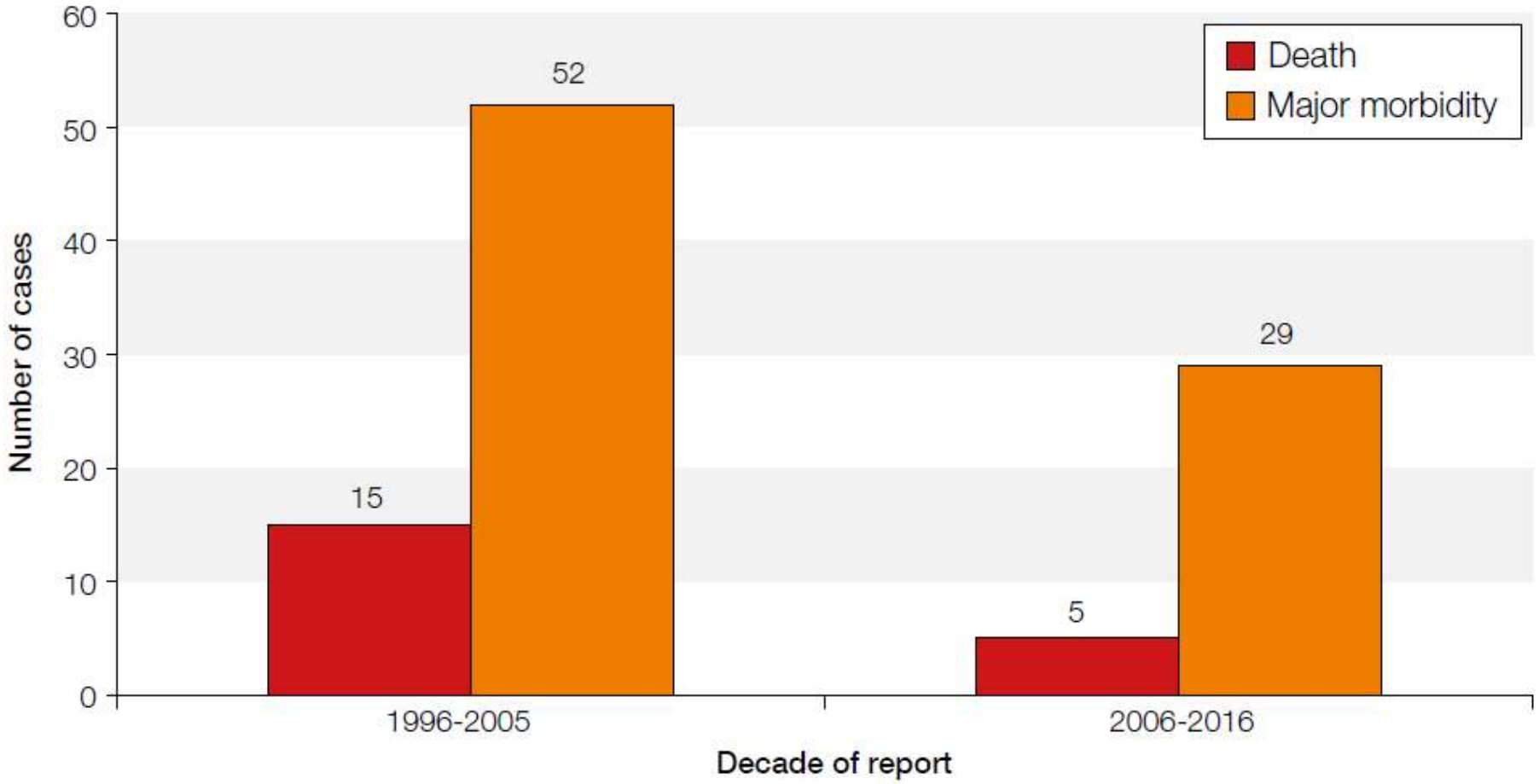
Point in the process where a wrong blood in tube incident was detected



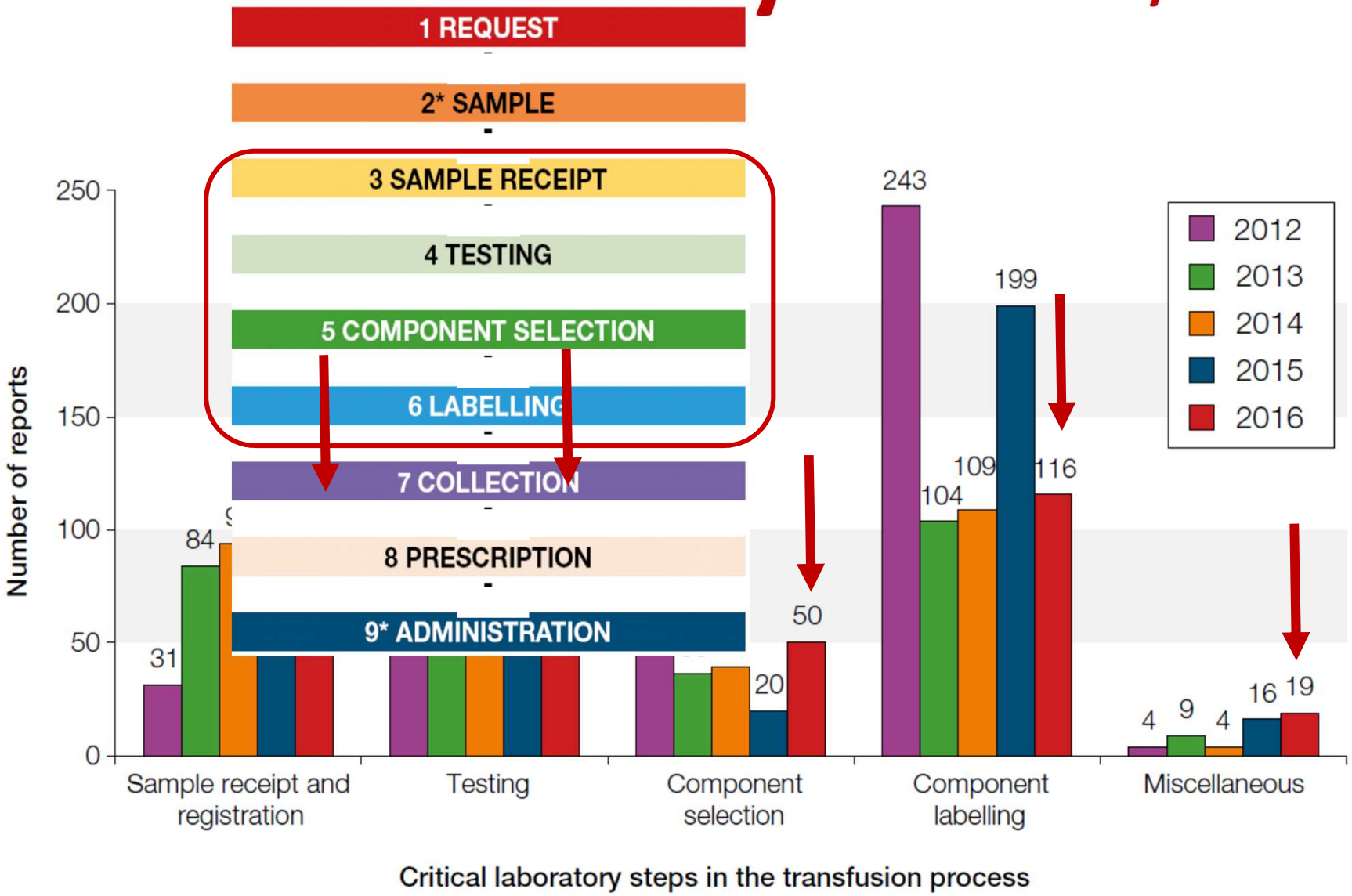


Good news..

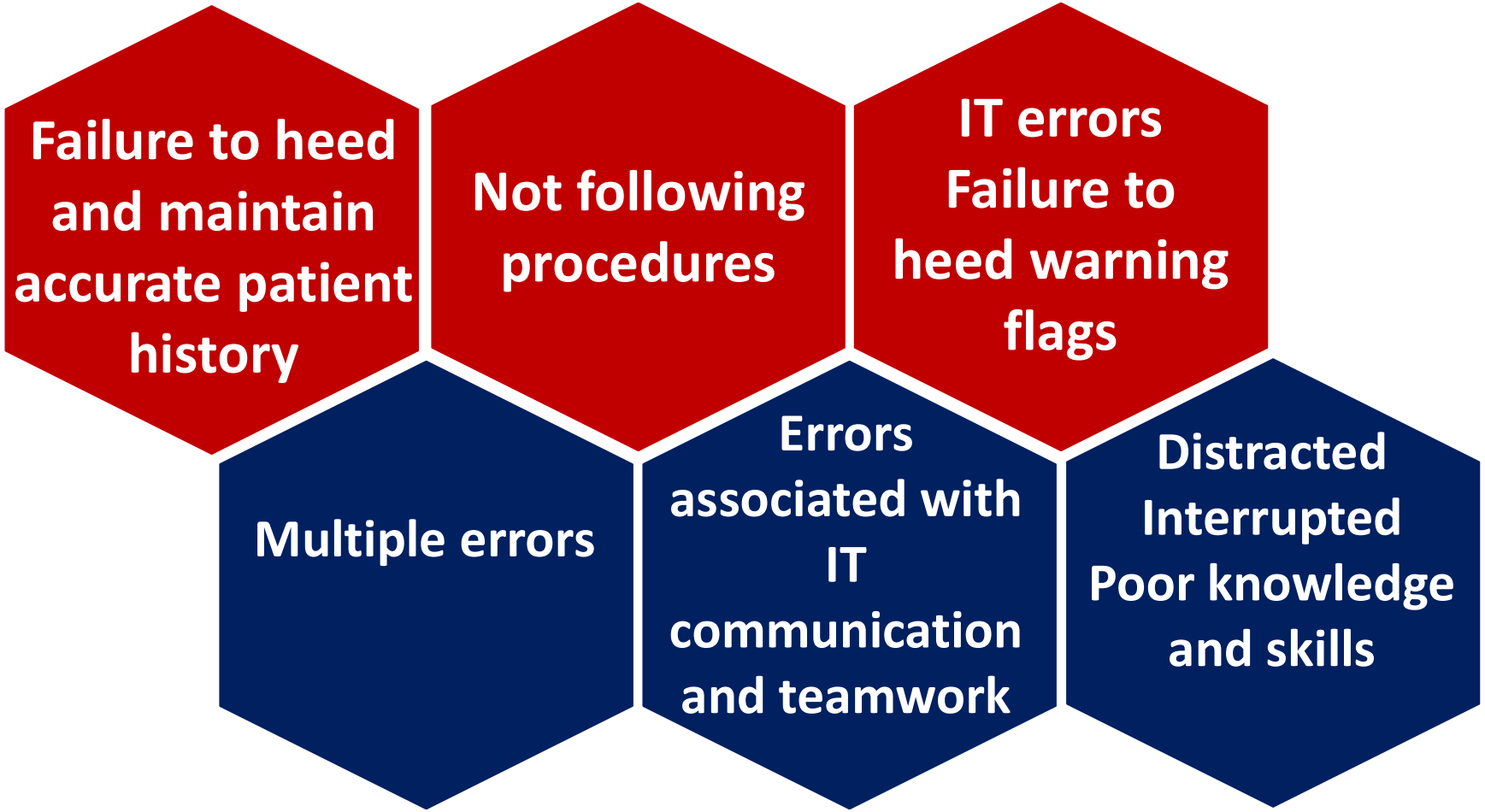
reduction in ABO-incompatible transfusions



SHOT Laboratory data – 5 year trend



Recurring laboratory errors



Sample receipt and registration n=70

Testing n=56

UK NEQAS
Haematology and Transfusion

Errors in antibody identification

Claire Whitham

- Similar errors noted across 3 exercises
  - A process of exclusion not followed where antibodies were masked
  - Antibodies excluded with inappropriate cells
  - Making positive identification with only one example of an antigen positive cell

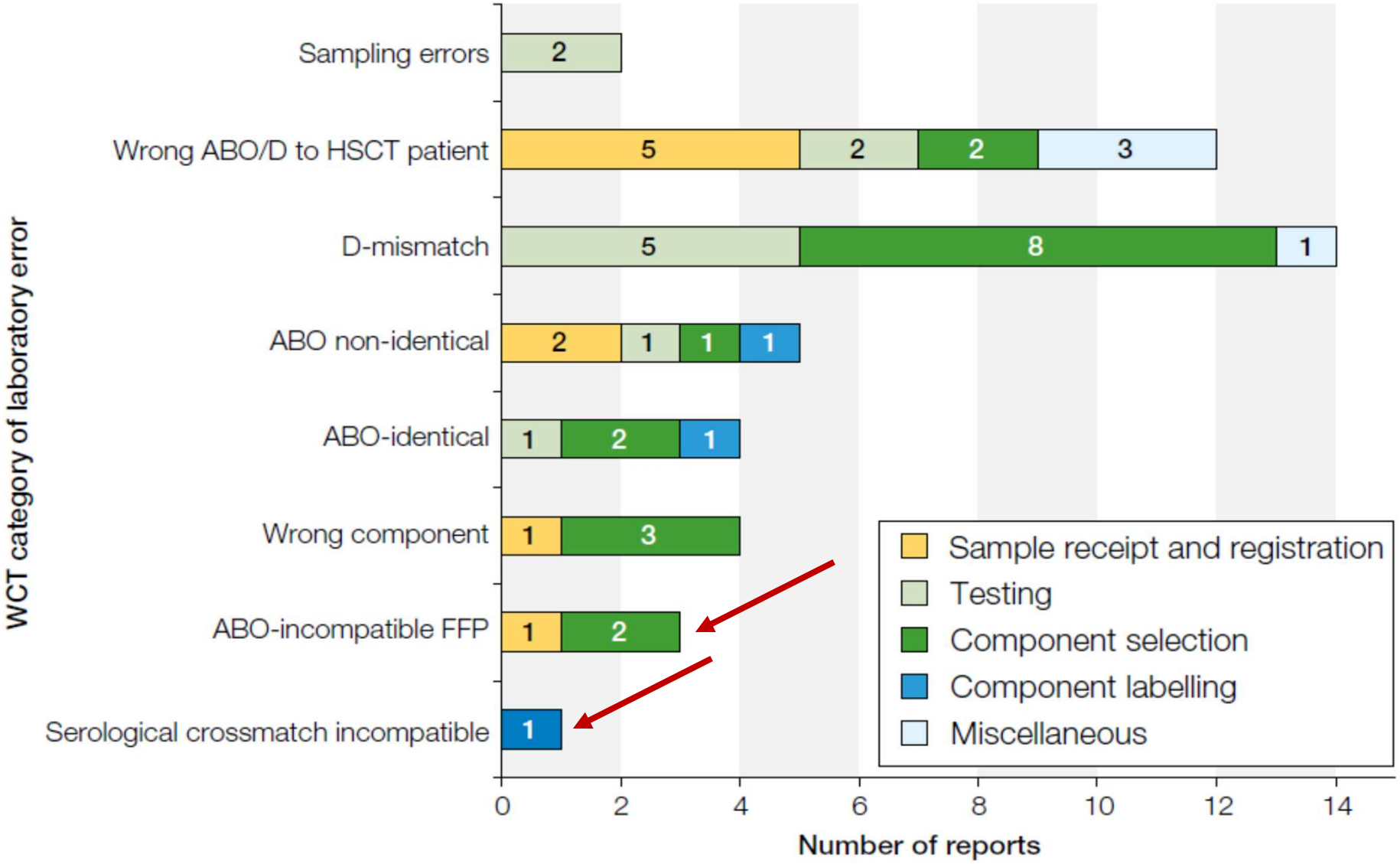
UK NEQAS
Haematology and Transfusion

Learning Points

Claire Whitham

- Every antibody investigation should include a systematic process for exclusion and positive identification of antibody specificities
- All reactions should be accounted for before a conclusion is reached
- Errors in antibody identification cannot be detected at the bedside

Wrong blood component transfused n=15 Wrong component issued n=170



Selection error leads to transfusion of incompatible FFP

- *83 year old male, blood group A, required 3 units of FFP*
- *3 units of group O FFP were issued and 1 unit was transfused*
- *Post transfusion Hb fell from 80g/l to 72g/l, bilirubin was 19µmol/L and DAT was negative* **Component selection**
- *BMS was following the SOP for platelets rather than FFP during a busy period of the day* **Component labelling**
- *There was no warning flag within the LIMS to prevent ABO-incompatible plasma components* **Administration**

SHOT Learning Points

BMS staff should take care to use the correct procedure for each component type

Staff should be conscious that during stressful periods errors are more likely and not rush procedures or short-cut procedural steps

LIMS should have warning flags to highlight blood-group compatibility issues

MHRA Regulatory Reflection

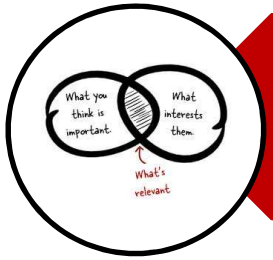
Poor change management when the new LIMS was introduced a number of years before

Change management and validation protocols must challenge the new system or equipment to ensure it is fit for purpose

IT incidents

Knowledge and training

Personal responsibility

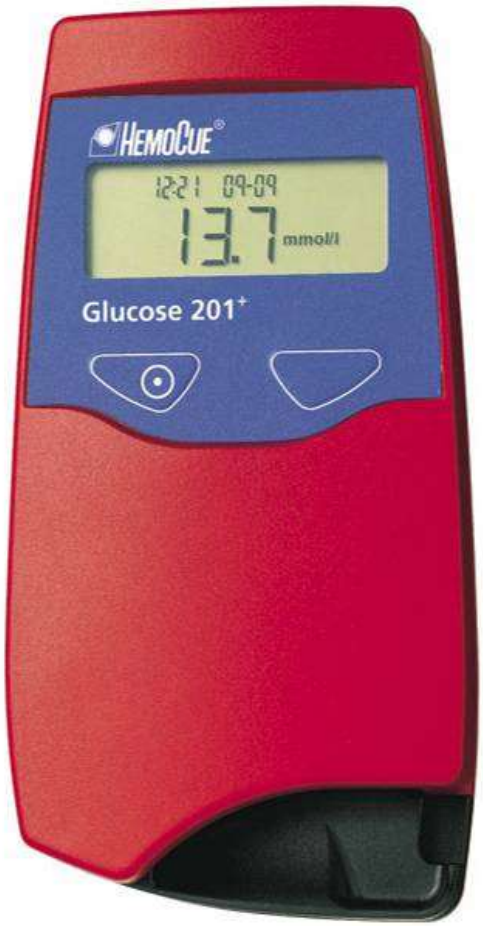


Fit for purpose

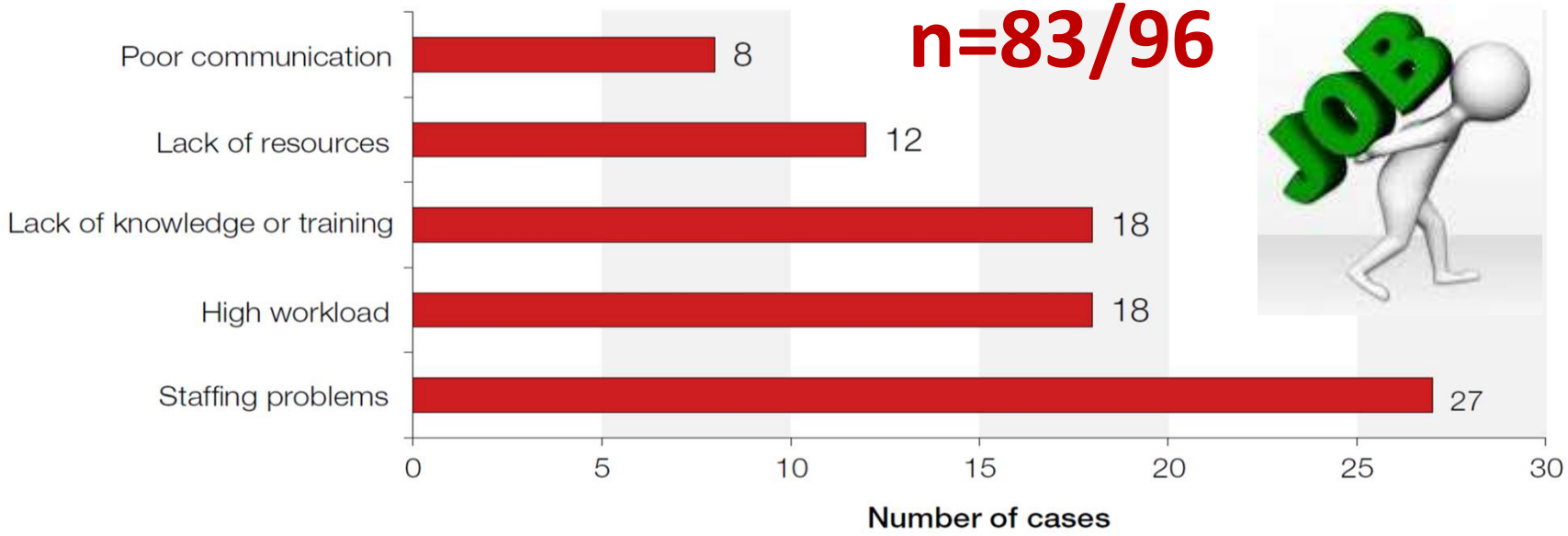
Sharing information

Machine lookalikes

Errors in theatre with point-of-care testing



Human Factors (comments)



"The BMS was sick and should not have been at work, but there was no one else available to cover the night shift so they came in. Staffing levels are critically low and there is no give in the system to allow for sickness. All band 6 staff are locums, because the pay is better…"

UKTLC


TRANSFUSION MEDICINE Official Journal of the British Blood Transfusion Society

Transfusion Medicine | GUIDELINES

UK Transfusion Laboratory Collaborative: minimum standards for staff qualifications, training, competency and the use of information technology in hospital transfusion laboratories 2014

SUMMARY

BACKGROUND

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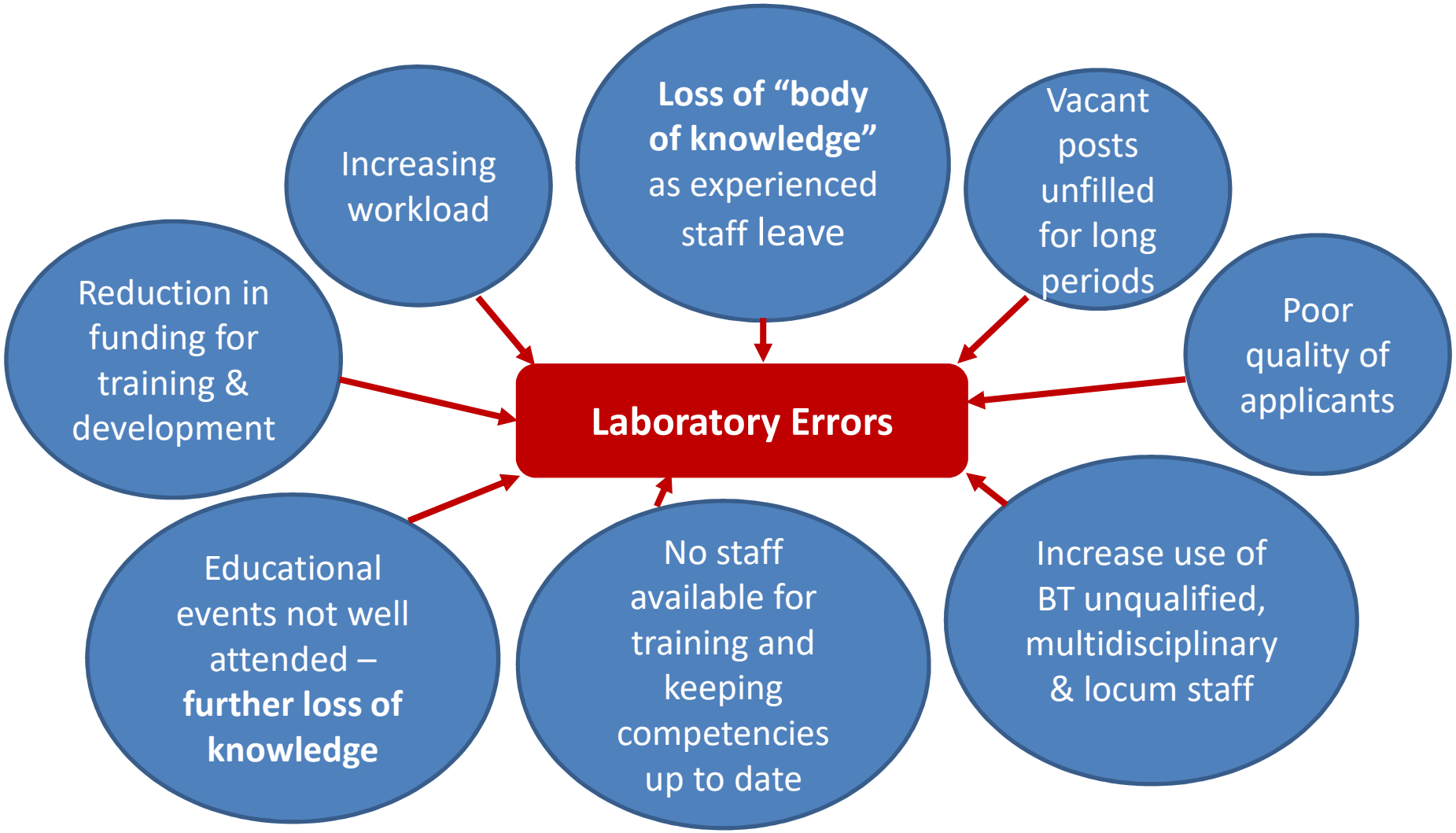
- Collaboration of IBMS,SHOT,BBTS,NEQAS & RCPath formed in 2006
- Targeted with a 50% reduction of laboratory errors by 2012
- Identified problems with :- IT,Staff levels, Knowledge & skills
- 3 laboratory surveys 2011,2013,2015
  - 2014 UKTLC standards available

UKTLC 2017 Survey



General comments

Quality of service is suffering due to increased numbers of very inexperienced staff and the inability to recruit anyone with BT experience

As the technical transfusion lead I struggle to keep up with workload within my core 37.5 hours, and regularly work additional hours

Lack of resource and support leads me to feel stressed and under considerable pressure regularly, and the only aspect that keeps me in this profession is my personal interest in the subject

Rotation of staff due to shift systems means less continuity

MHRA Inspections feedback

- 303 blood compliance reports were submitted 1 Apr 2015–31 Mar 2016
- 19 inspections were performed – 1 critical, 43 major, 67 other
- Critical deficiency was as result of the following:
  - Senior management had not ensured that there were sufficient resources to support the quality system
  - Management of incidents was inadequate in several respects

Inspectors' learning points

Key SHOT Messages 2016

Laboratories should always have adequate staffing at the appropriate grade to support those that require training

Appropriate use and management of Laboratory Information Management Systems (LIMS) are essential for patient safety

Gap analysis should be performed against national transfusion guidelines and SOPs amended to correct deficiencies

Conclusion

The standard of transfusion knowledge and education within laboratories is becoming a prevalent source of error

Anecdotal evidence that there is a national shortage of qualified BMS staff applying for vacant positions and vacancies being filled with less qualified staff

It is everyone's responsibility to ensure they complete their part of the process fully with care