Lessons from Annual

SERIOUS HAZARDS OF TRANSFUSION SHOT

Report 2015

What is SHOT...

- Serious Hazards of Transfusion (est. 1996)
- Collect serious adverse reactions and events
- Data reviewed by transfusion experts to produce Annual Report
- Participation is professionally mandatory

  a requirement of quality, inspection and accreditation organisations

- Small team based in Manchester

Haemovigilance definition

Blood is a living transplant

Collection, transport, processing and testing
Delivery to the patient

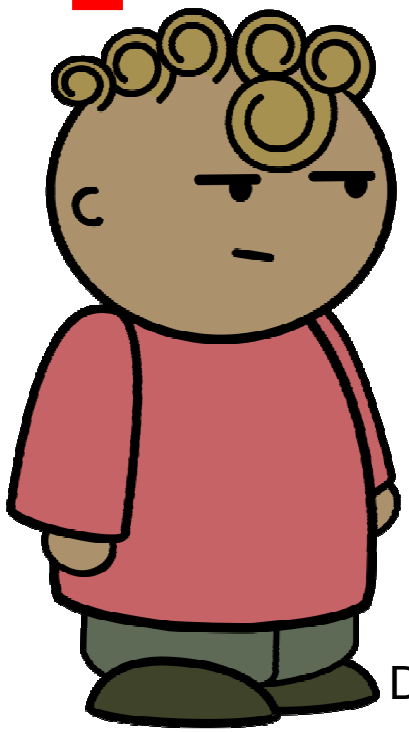
Is the donor safe?

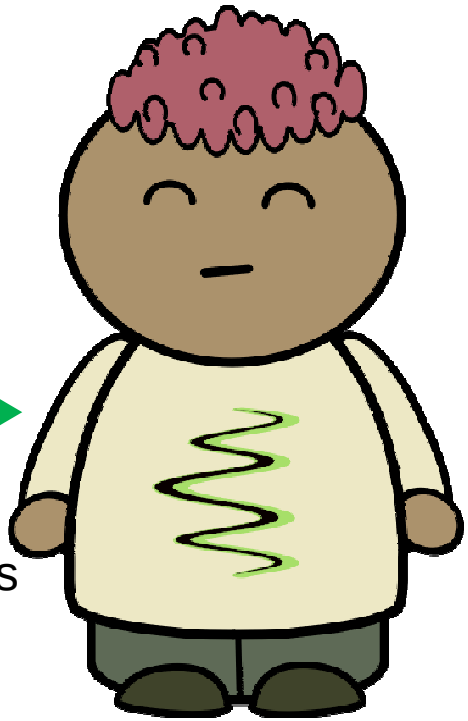
Is the process safe?

Is a transfusion the most appropriate treatment?

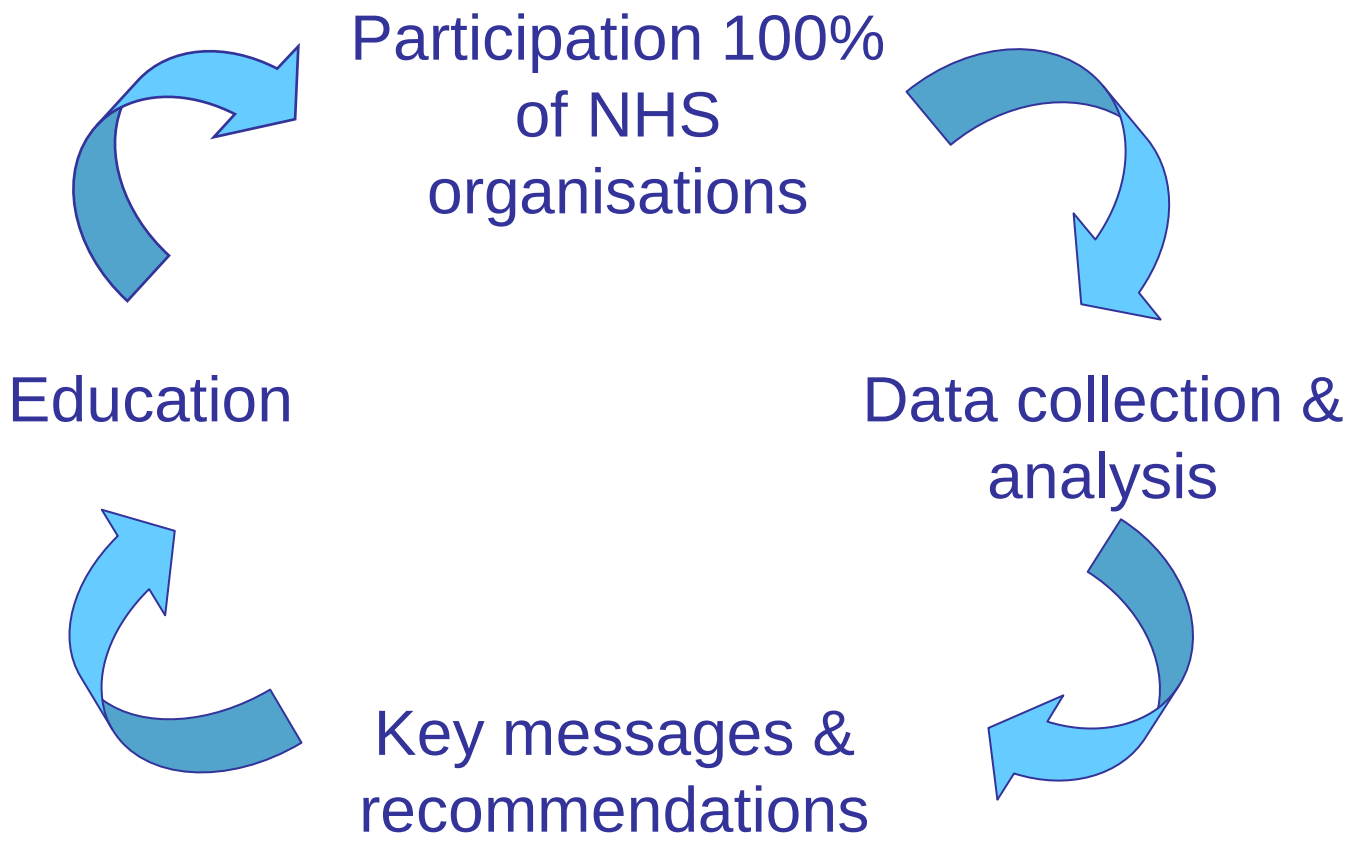
Recipient characteristics

Donor characteristics

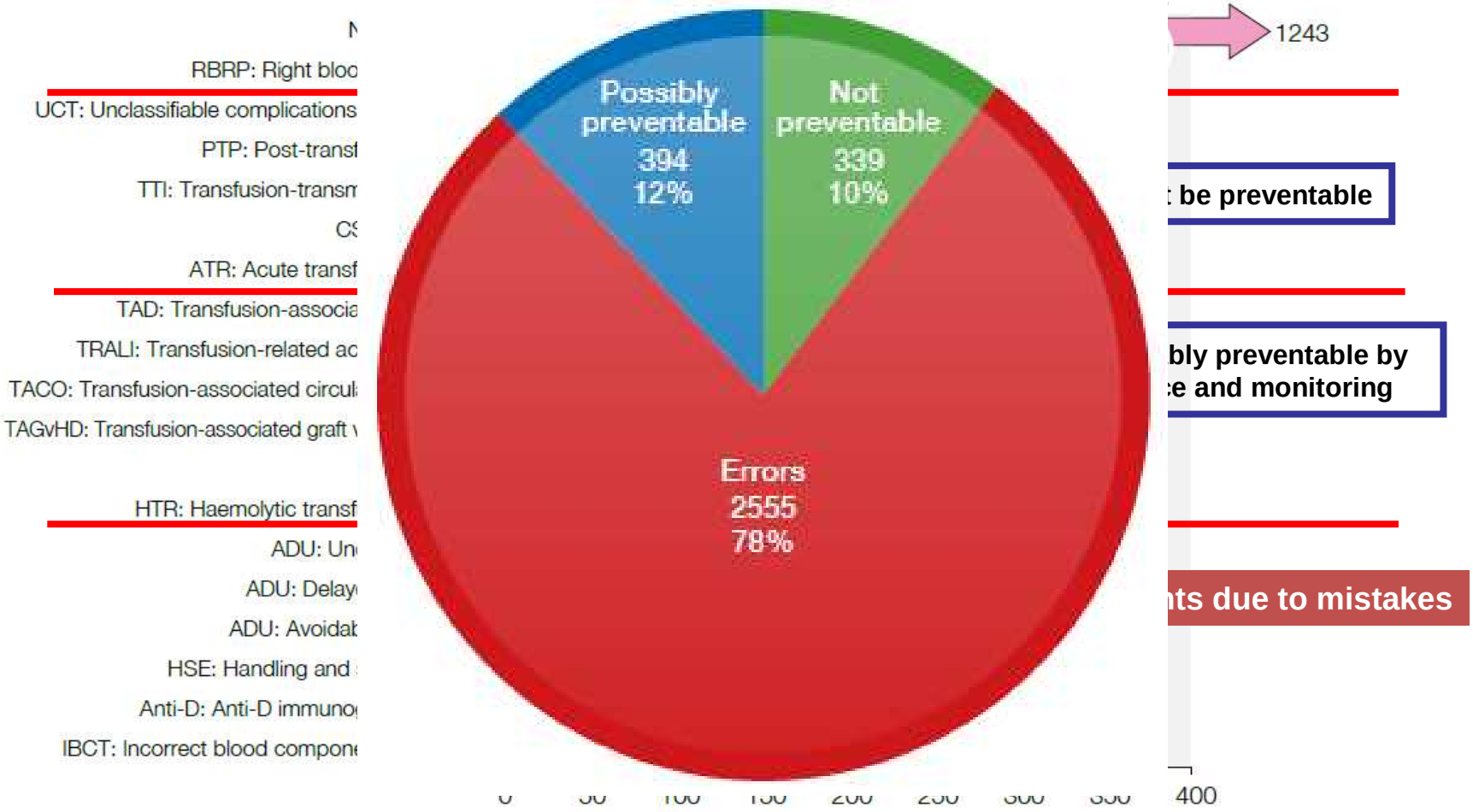




The cycle...

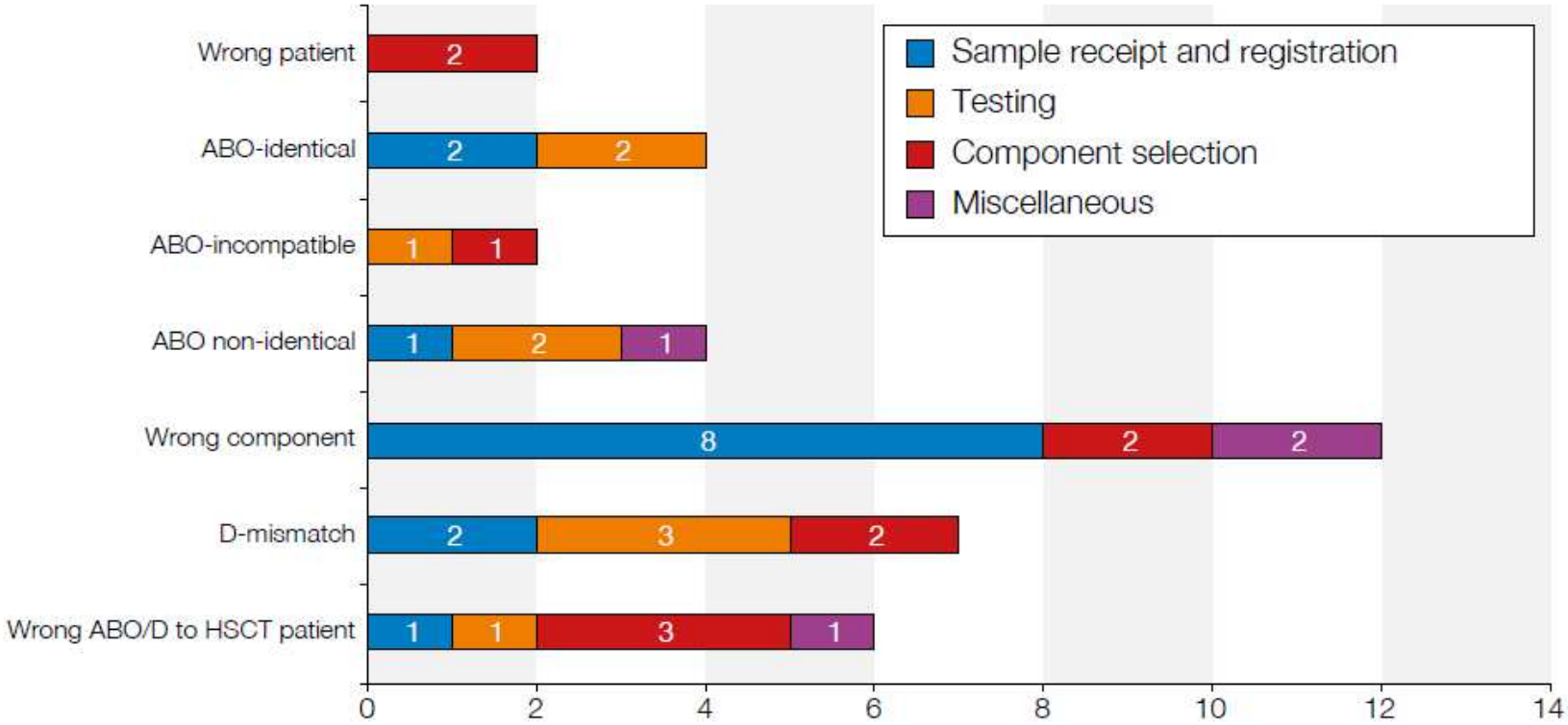


SHOT 2015 n=3288

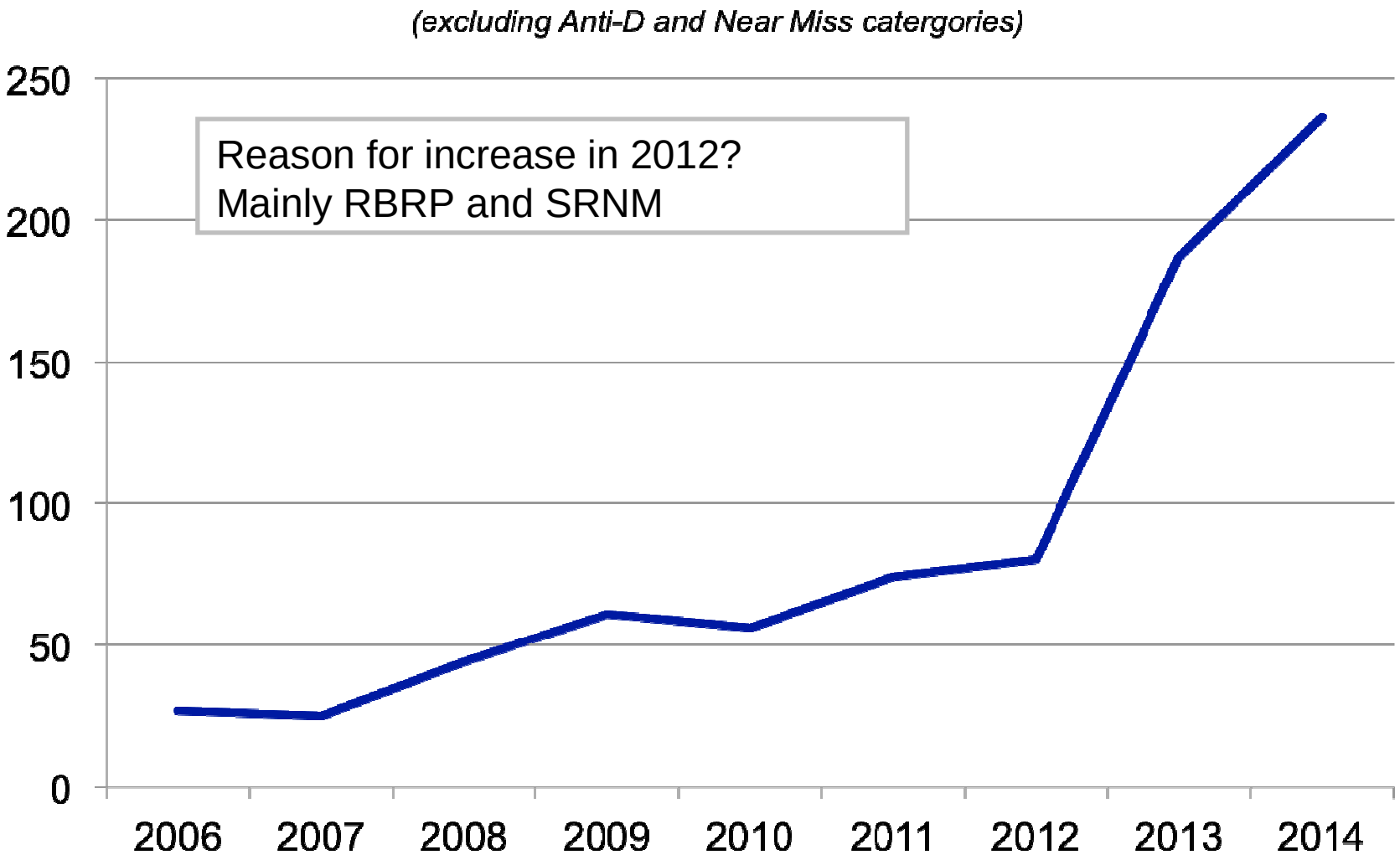


Incorrect blood component transfused: wrong component transfused (WCT) n=82

Laboratory errors n=37



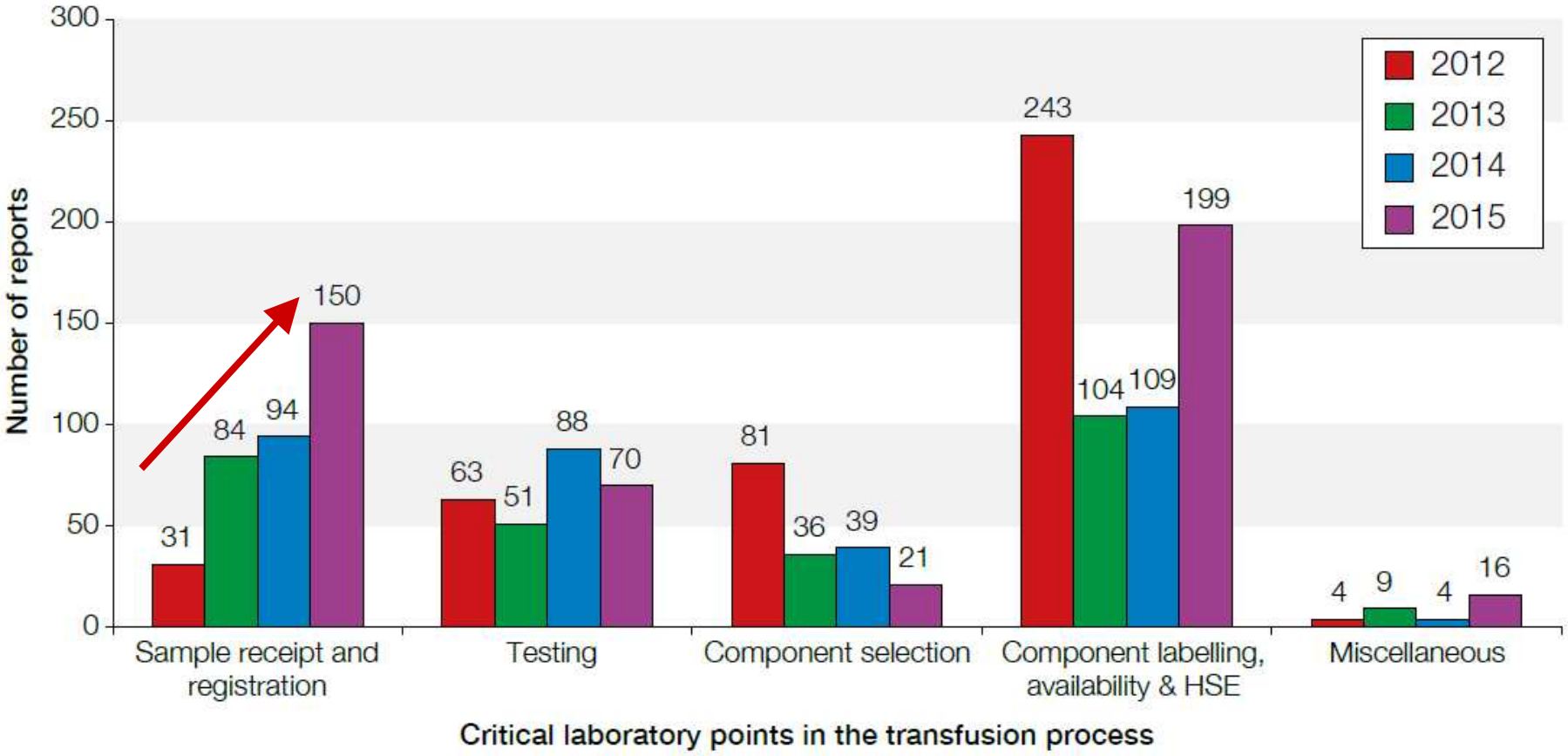
SHOT errors attributed to IT (2006-2014)



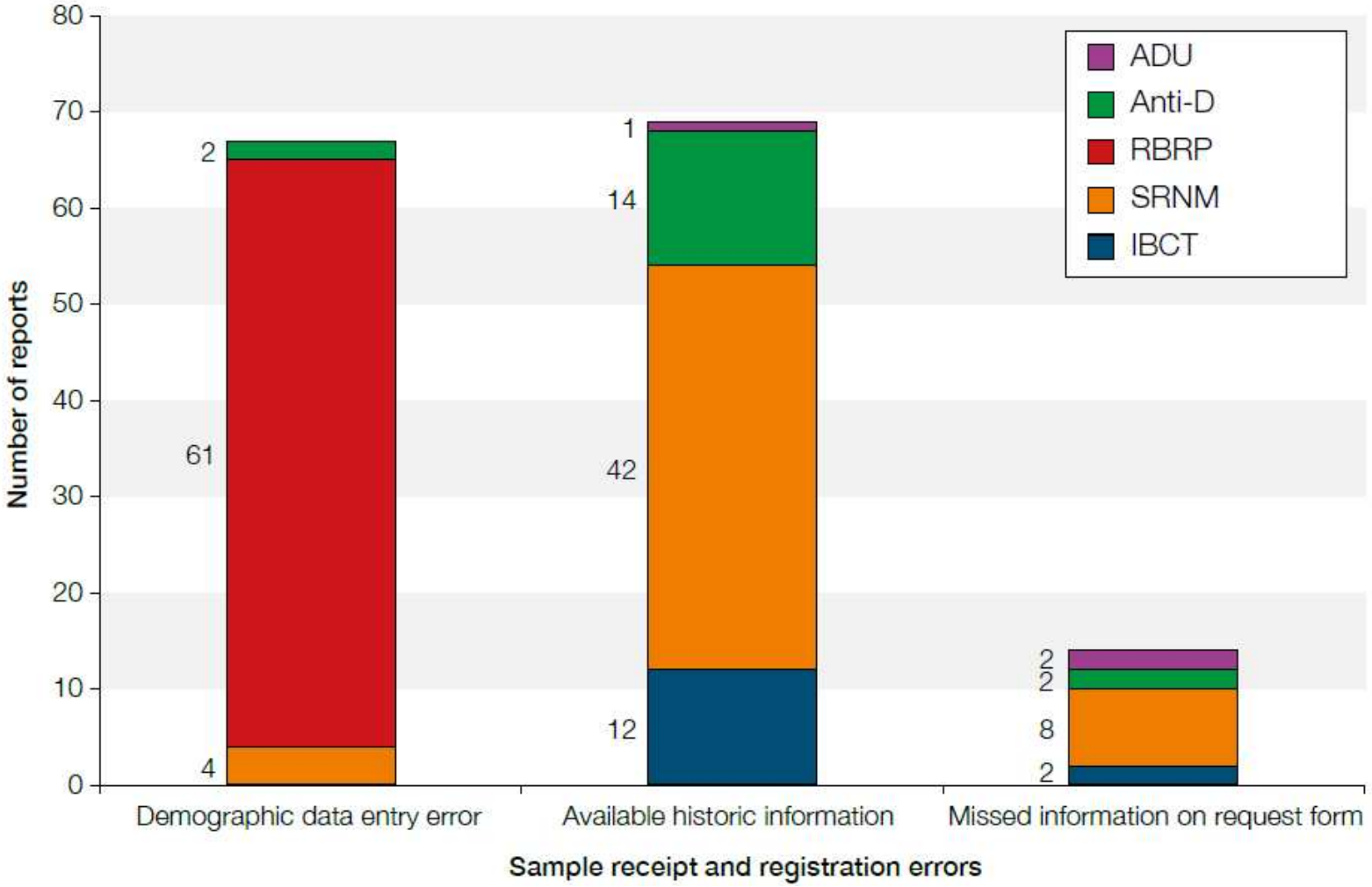
Error	No. of reports	Non-irradiated unit transfused	Antigen positive unit transfused	Non-CMV Neg unit transfused	Other
Records not merged	6	2	4	0	0
Computer system 'down'	6	3	1	1	1 (transcription error)
Historical record not consulted	3	2	1	0	0
Protocols for searching previous records insufficiently flexible	3	3	0	0	0
Ignored warning flag	2	1	1	0	0
Data not transferred from old system	1	0	0	0	1 (ABO mismatch)
Failure to update warning flags	1	0	0	0	1 (MB-FFP for a child)
Inappropriate electronic issue	6	0	4	0	2 Protocol violations

Detailed analysis of IT errors

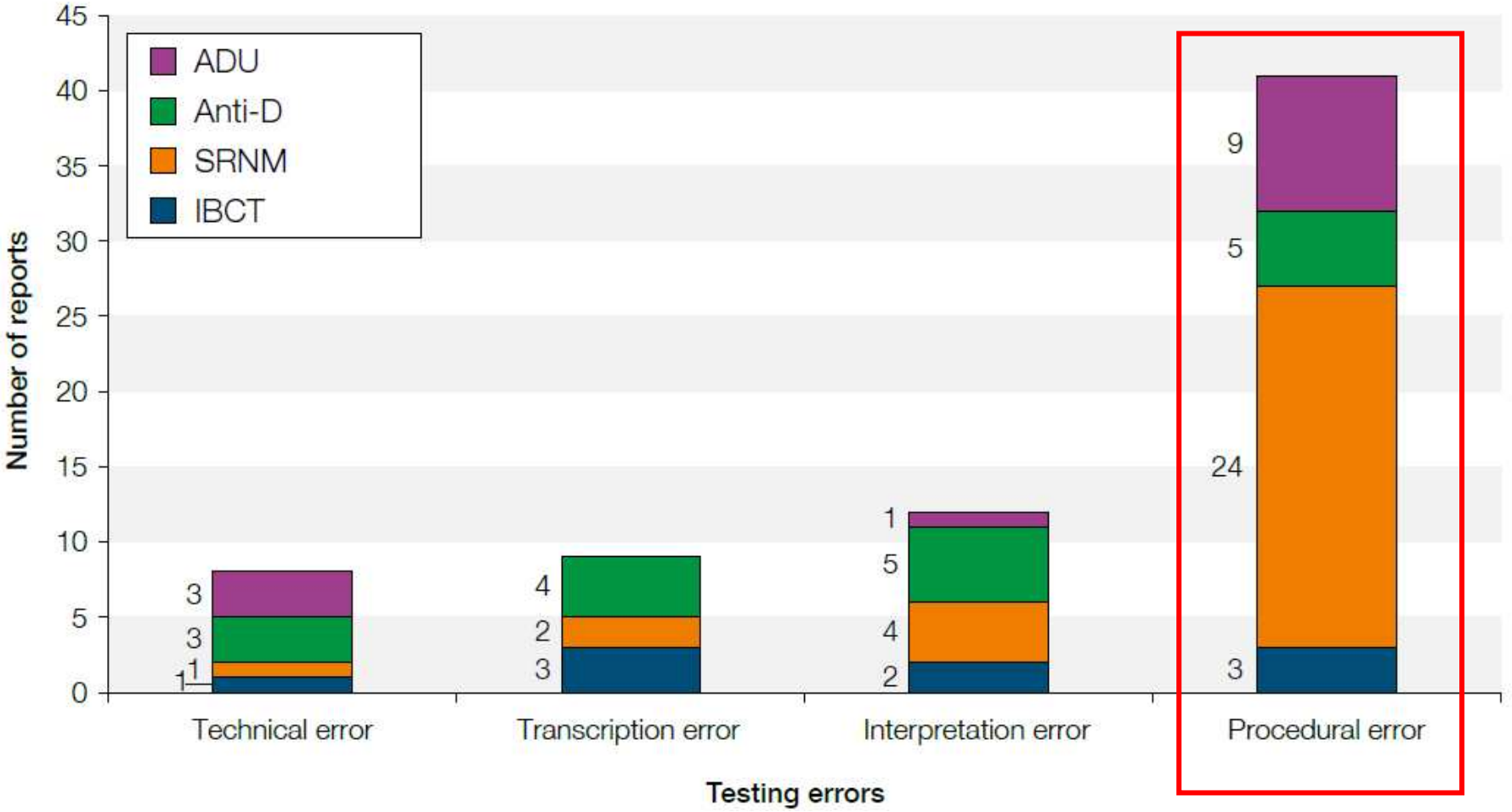
Critical laboratory steps in the transfusion process – 4 year trend



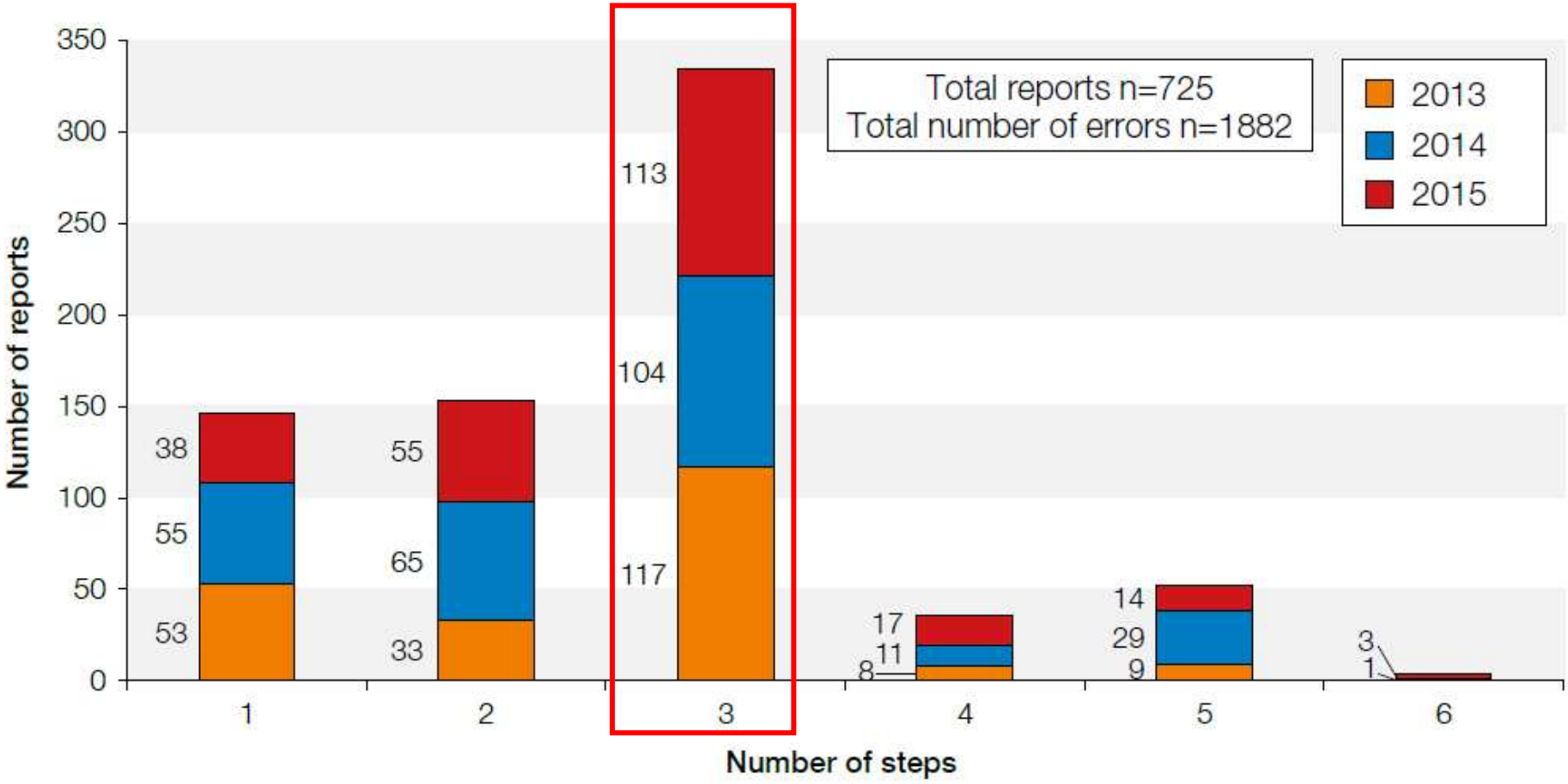
Sample receipt and registration errors with their outcome (n=150)



Testing errors with their outcome (n=70)



Multiple errors

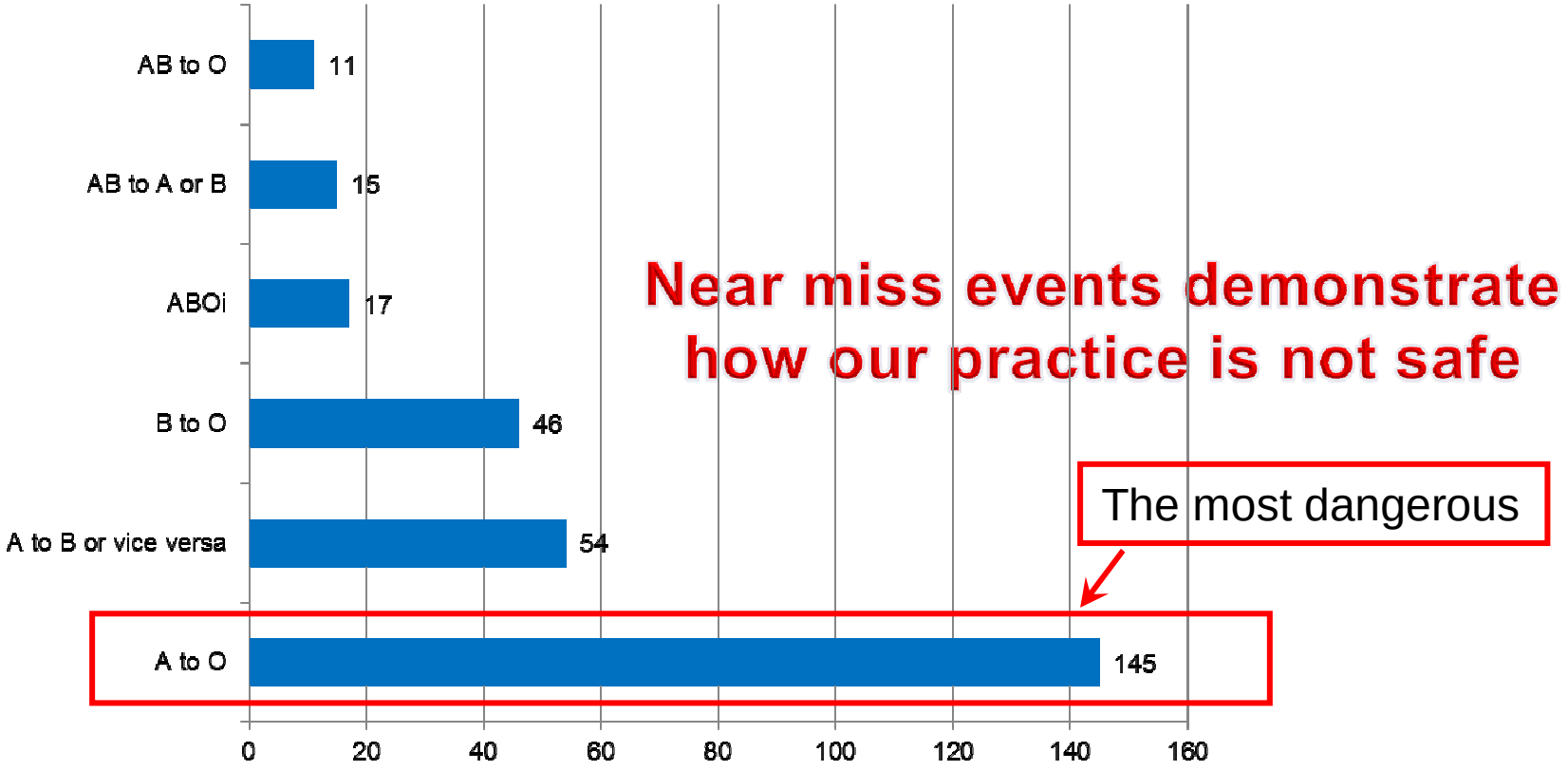


Near miss incidents – potential outcomes

Total 288 possible ABO-incompatible transfusions

Cumulative SHOT data show that about 33.3% of ABO-incompatible red cell transfusions cause death or serious harm

So a third, 96/288, of patients potentially harmed



Death – Delayed transfusion

- An elderly woman was admitted for elective aortic aneurysm repair
- The aneurysm had been identified when she attended the emergency department (ED) with gastroenteritis
- She was transferred to another hospital where she was an inpatient for several days
- On admission for surgery a week later, blood samples were taken and 6 units of red cells crossmatched
- When the blood was required in theatre a discrepancy in the spelling of the patient's name was discovered (one letter was incorrect)
- The case notes and consent form had the wrong spelling but the blood was labelled correctly
- The units were returned to the transfusion laboratory according to the hospital protocol
- There was subsequently a delay in transfusion which contributed to her deterioration with development of coagulopathy and death later that night

Irmgard

Irngard

Woman 'bled to death after operation because her name was misspelt on spare blood'

Ross Lydall
Health Editor

A WOMAN died after a successful operation because a spelling mistake meant that emergency blood supplies were unavailable.

Irmgard Cooper had just had surgery at Northwick Park hospital, in Harrow, to repair a life-threatening bulge in the main artery to her heart when her blood pressure dropped.

As a surgeon began unclamping the artery to allow blood to recirculate, he found a weak pulse and called for extra blood. The anaesthetist told him there was no cross-matched blood and although all-purpose O-negative blood was obtained within an hour, Mrs Cooper died shortly before midnight.

It was discovered that there was no blood on standby because it had been returned to the blood bank because the German-born grandmother's name had been wrongly spelled as Irngard on the supplies.

After the operation, her daughter Lorraine Booker was told by the surgeon that the operation had gone as planned, despite a "little problem" with her blood clotting.

However, when Mrs Booker was taken to intensive care, she found her mother "lying in a pool of blood, which was running off the bed" and the "floor was drenched in blood".

Grandmother: Irmgard Cooper, with her daughter Lorraine Booker, had undergone a successful heart operation

Barnet coroner Andrew Walker found Mrs Cooper died from neglect and said her death was avoidable. He found gross failings in the failure to provide blood at a critical time when it was known supplies would be needed.

Mrs Cooper, 85, who had two children and three grandchildren and had been married to Raymond for 62 years, was admitted to hospital in May last year for an aortic aneurysm repair.

Mrs Booker, from Chesham, Buckinghamshire, who was at the hospital during the operation, said: "I phoned home and told my father and the rest of the family that she had come through the operation, which devastates me now. I went to intensive care to see her, I took one look at all her readings and felt her body, which was ice cold, and I knew she was going to die. She was lying in a pool of blood, which was running off the bed. The floor was drenched in blood.

"My father has suffered from nightmares over my mother's death ever since. We just feel very let down and betrayed by the hospital for a death that should never have occurred."

> 'We feel let down and betrayed by the hospital for a death that should never have occurred'
> Lorraine Booker, daughter

A serious incident investigation by the hospital found that Mrs Cooper, from Hayling Island, Hampshire, died from sepsis, blood clotting difficulties, cardiovascular collapse, haemorrhage and the delay in giving blood.

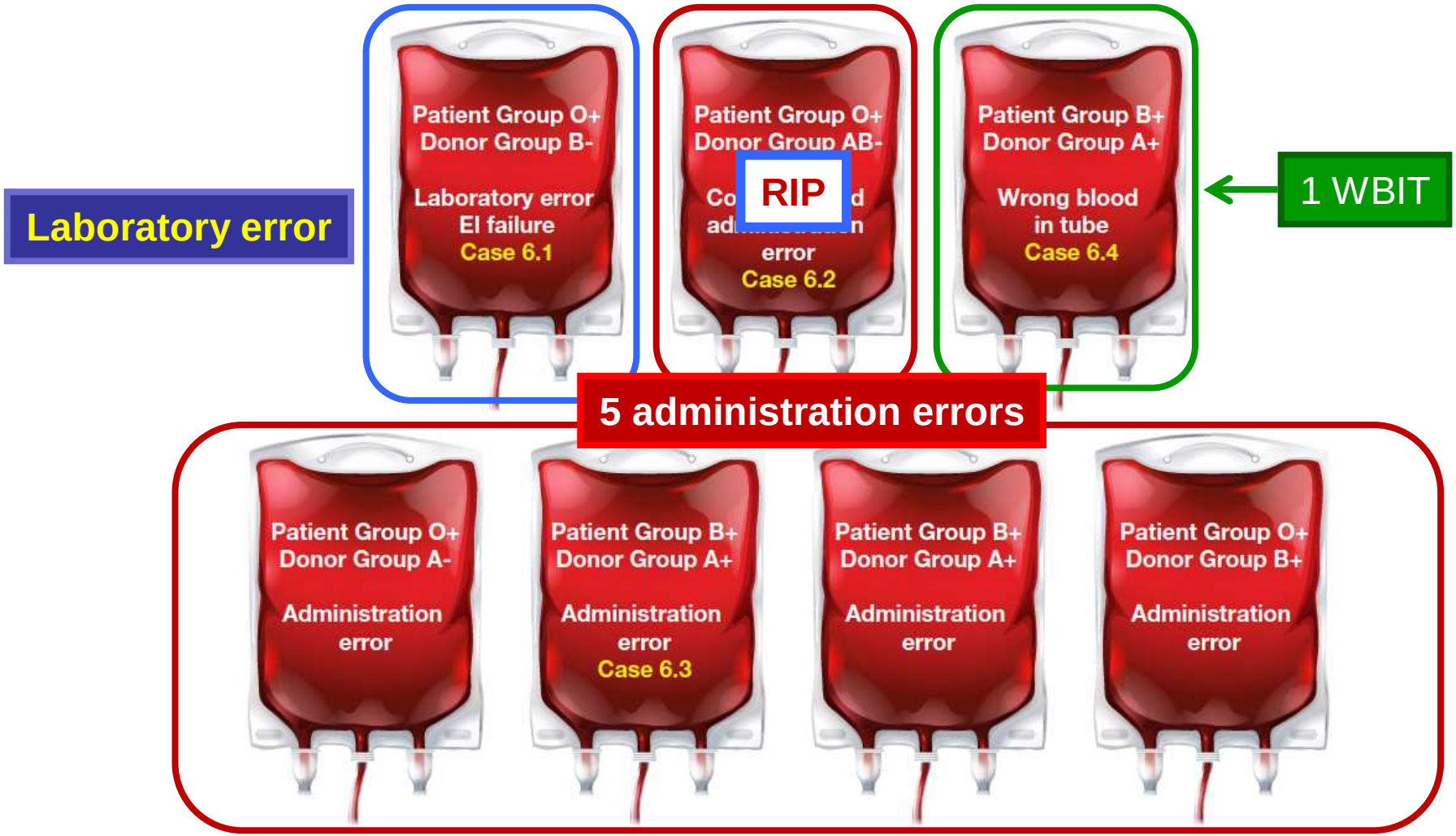
Renu Daly, of medical negligence firm Hudgell Solicitors, said: "Mrs Cooper was effectively dead from the time she arrived in intensive care. She was already suffering from catastrophic internal bleeding, which meant death was inevitable. This catalogue of errors demonstrates an enormous breach of care."

London North West Healthcare, which runs Northwick Park, has admitted liability. Chief executive Jacqueline Docherty said: "I would like to offer my sincere condolences to the family of Irmgard Cooper." @RossLydall

How did this happen...?

- Name correct on transfer letter but incorrectly entered onto patient information system
- Discovered prior to admission, the electronic patient records were updated but hard copy case notes was not
- Wristband correct on admission, but this was not accessible at surgery (under drapes) so blood checked against hardcopy notes

ABO incompatible red cell transfusions n=7



ABO-incompatible transfusion permitted by an electronic issue system which was not fit for purpose as it had not been validated

- A 29 year old male in sickle crisis required transfusion of 3 units of red cells
- The patient was known to be group O D-positive with no alloantibodies
- The BMS selected 3 group B D-negative red cell units in error and proceeded to issue these electronically via the LIMS
- Warnings stating the ABO discrepancy were displayed, but were overridden by the BMS by pressing a function key, because there was no requirement to enter text such as 'yes proceed'
- During transfusion of the first unit, the patient felt unwell and transfusion was stopped
- The unit was returned to the laboratory but rather than initiating an investigation, the unit was placed in quarantine until the day staff came on duty when the ABO discrepancy was noticed
- Overnight, 2 further ABO-incompatible units were transfused to the patient

Double & confusing nomenclature for K & k

Two different nomenclatures used for the k antigen (little k, formerly known as Cellano):

NEG:…(k) in the upper label, but k̄ in lower panel

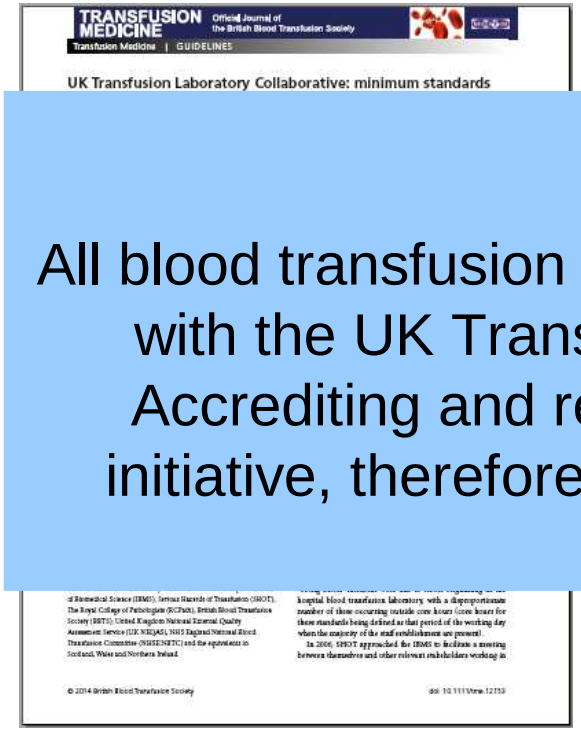
Don't improvise

Follow the procedure

Can't follow the procedure?

Review and change the procedure

UK Transfusion Laboratory Collaborative


TRANSFUSION MEDICINE Official Journal of the British Blood Transfusion Society

Transfusion Medicine | GUIDELINES

UK Transfusion Laboratory Collaborative: minimum standards

- Collaboration of IBMS,SHOT,BBTS,NEQAS & RCPath formed in 2006

Recommendation

All blood transfusion laboratories should be familiar with and comply with the UK Transfusion Laboratory Collaborative standards. Accrediting and regulatory organisations have supported this initiative, therefore compliance with these standards is strongly recommended

Reasons we continue to fail...

- Competing priorities on resources: time, staff, money, targets
- Communication barriers
- Lack of knowledge: training, fatigue, etc

‘Human factors’

Human factors

Acknowledgements

- SHOT Team in Manchester
- SHOT Working and Writing Expert Group
- SHOT Steering Group
- UK NHS Organisations for reporting

sample taken from incorrect patient after SATNAV error

Community healthcare assistant (HCA) working out of a general practice was supposed to take a group and crossmatch sample from Patient A

Patient's address was entered into the satnav system but the directions led to patient B's address which was similar to patient A's address

The HCA greeted Patient B using Patient A's name outside the house and the patient beckoned her to come in

The HCA did not perform correct positive patient ID, so did not check the patient's name or DOB before taking the blood or labelling the bottles

The GP noticed the patient's haemoglobin was too high for the expected patient and contacted Patient A who said they had not had a sample taken