SERIOUS HAZARDS OF TRANSFUSION SHOT

Multiple laboratory errors resulting in transfusion of incorrect blood components

Hema Mistry[1], Julie Ball[1,] Peter Baker[1] Debbi Poles[1] and Paula H.B. Bolton-Maggs[1,2]

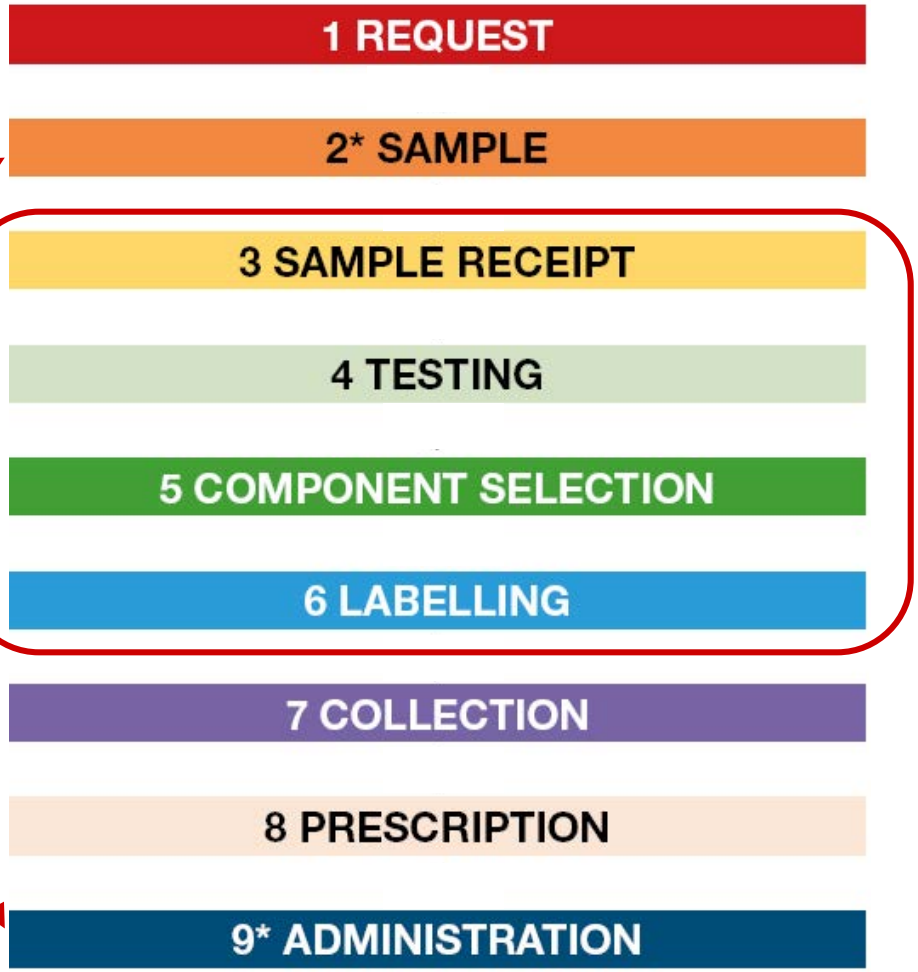
[1]Serious Hazards of Transfusion on behalf of the SHOT Steering Group, Manchester, UK, [2]University of Manchester, UK

The Transfusion Steps

(as used by SHOT to analyse the data)

Critical points: Positive patient identification essential

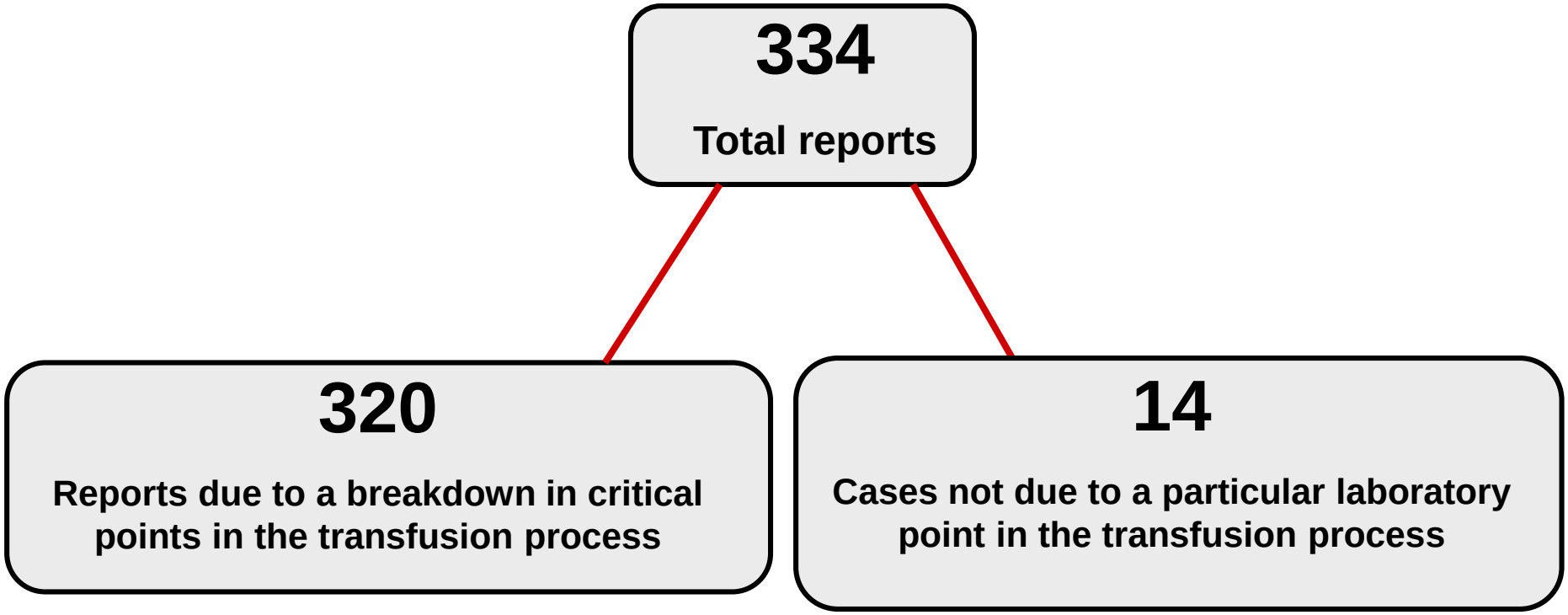
Note: once a decision to transfuse is made, the authorisation or prescription may be written at variable times during this sequence, but **must be checked at the final stage**



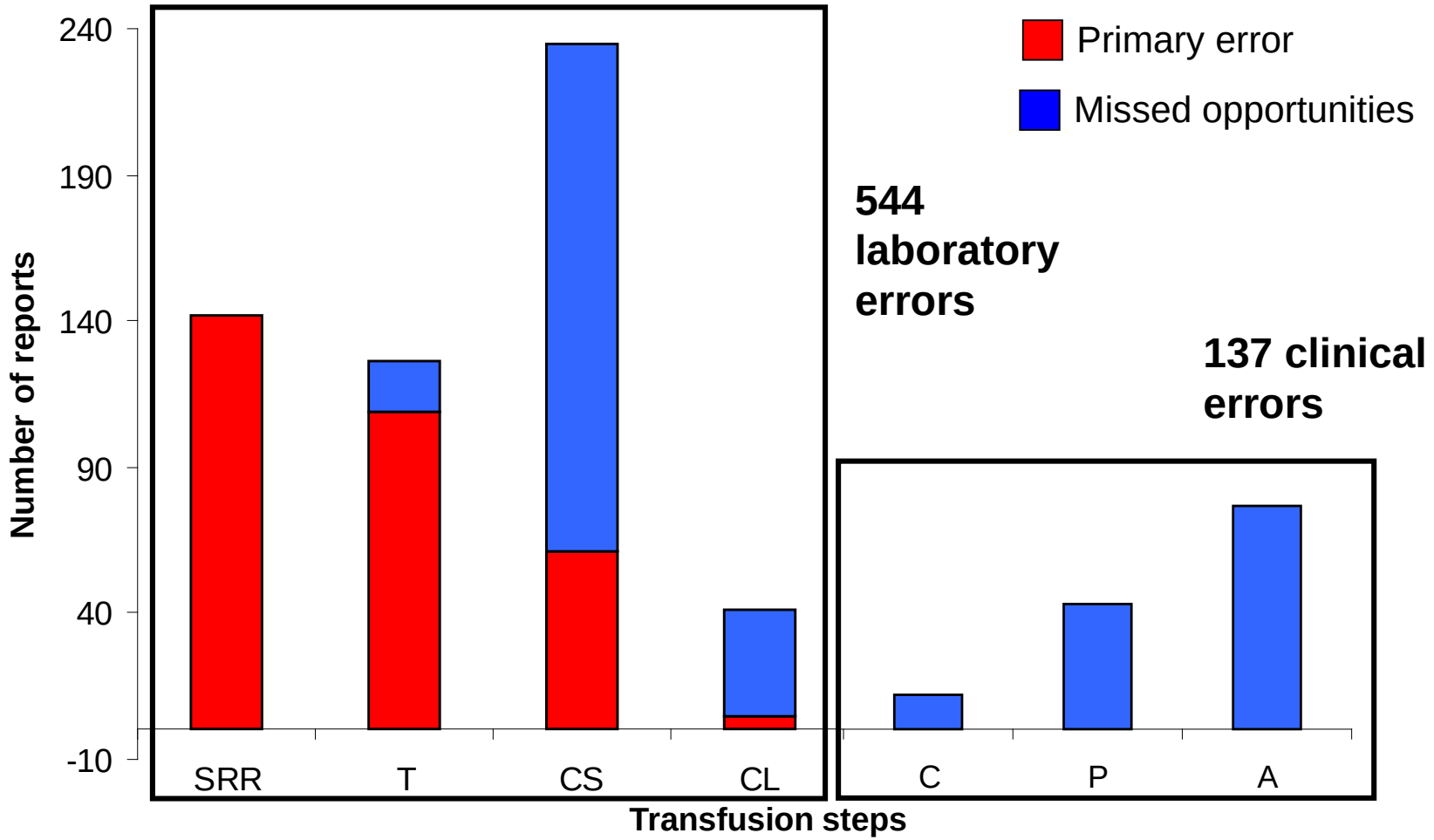
Serious harm associated with laboratory errors reports 2013-2015

- 16 instances of major morbidity
  - 1 ABO-incompatible transfusion
  - 1 wrong component
  - 14 cases of sensitisation in women of childbearing potential (Anti-K=11, Anti-D=3)
- 6 ABO-incompatible red cell transfusions
- No deaths

Overview of laboratory cases where the wrong component was transfused 2013-2015



Steps in the process where an error was made or where an opportunity was missed to detect the primary error



SRR: sample receipt and registration, **T**: testing, **CS**: component selection, **CL**: component labelling, **C**: collection, **P**: prescription, **A**: administration

Case Study: Failure to heed request for irradiated units results in 4 errors including 3 opportunities to detect the error

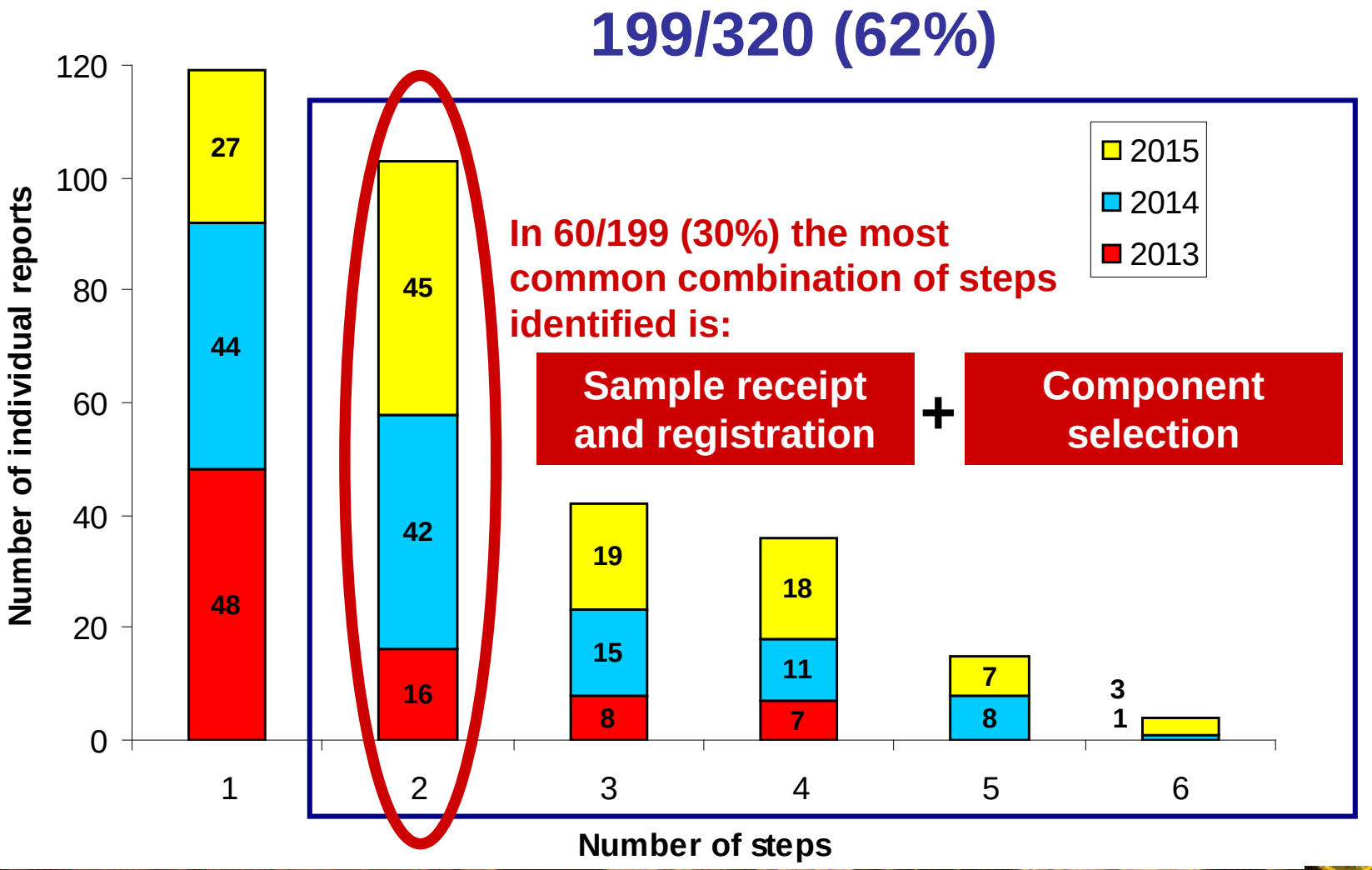
The irradiated 'red cells' box was ticked on the request form.

Missed by both MLA at booking in and BMS issuing the red cells.

Not noticed by the clinical staff, resulting in the transfusion of one unit of non-irradiated red cells to a patient on fludarabine

1. **Primary error: Sample receipt and registration** – need for irradiated units was indicated on the request form, which was missed at booking in
2. **Component selection:** missed again when the BMS issuing the component did not notice the ticked box for irradiation on the request form either
3. **Prescription:** nursing staff did not check for specific requirements on the prescription
4. **Administration:** need for irradiated components was not noted at the bedside check and a non-irradiated component was administered

Number of steps where there was a critical breakdown in the transfusion process n=320



Case Study: Patient known to have anti-C was transfused with C-positive units

Known patient with computer alert noting need for C-negative, and E-negative red cells was issued 3 units of C-positive blood.

Patient received 1st unit and part of 2nd before the error was detected.

The patient was admitted to monitor for signs of delayed transfusion reaction.

1. **Primary error: Sample receipt and registration** – The BMS failed to heed patient historical records and the computer alert flagging the requirement for C-negative, E-negative red cells

2. **Component selection** – suitable units had already been put to one side for this patient and there was documentation in the lab for the shift handover, however the units were not found and instead C-positive units were selected from stock

Main issues in Laboratory IBCT cases

- **199/320 (62%)** reports demonstrated multiple errors
- In **142/320 (44%)** reports the primary error was made in the sample receipt and registration step and not detected at subsequent steps prior to transfusion
- **80/320 (25%)** reports had combined laboratory and clinical errors which were not detected by either area
  - In **240/320 (75%)** reports, clinical staff could not have detected the errors made earlier by laboratory staff

Main causes of errors

- Not following Standard Operating Procedures
  - Warning alerts
  - Testing procedures
  - Not heeding patient historical records
- Communication failures
  - Effective handover
- Team work problems
- Failure to use Information Technology correctly

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

Conclusion

- Laboratory and clinical staff should work as one integrated team

- Many laboratory errors cannot be detected

WARM

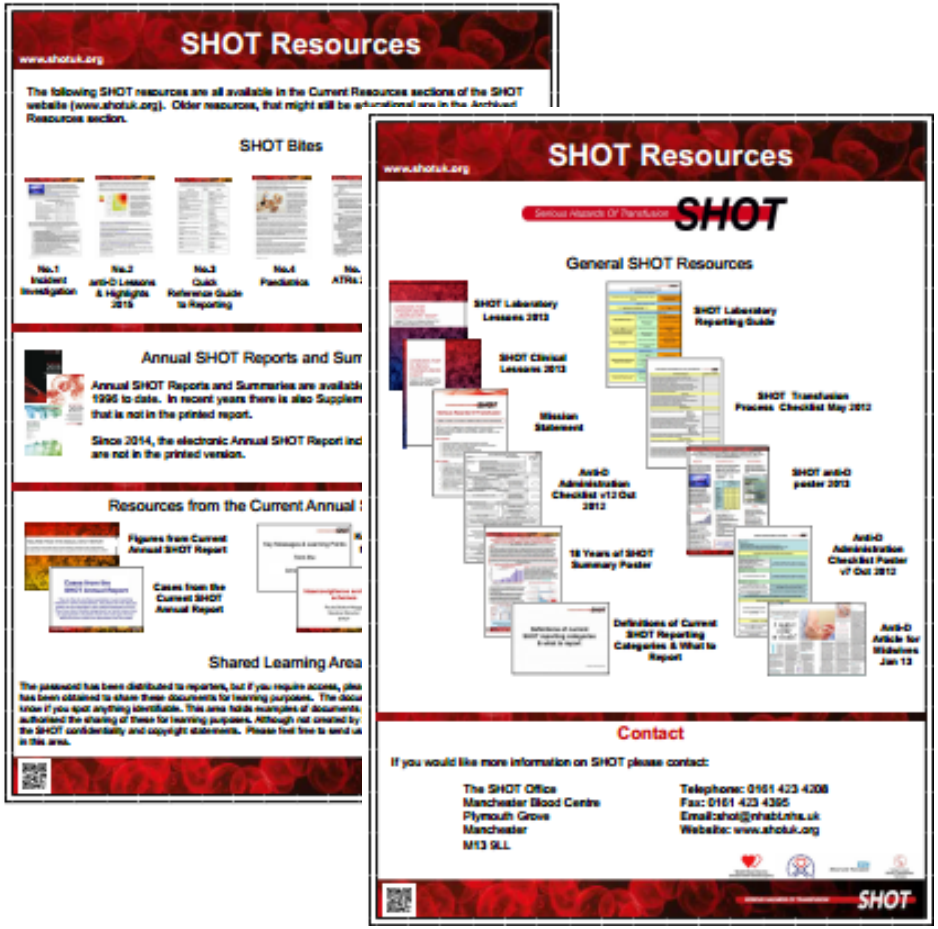
Work Accurately and Reduce Mistakes

- Safe transfusion depends on accuracy at every step

Additional Information

Following documents available on website to help with reporting: www.shotuk.org

- **Reports**
- **Summaries**
- **Education resources**
  - **-SHOT Bites**
  - **-Case Studies**



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