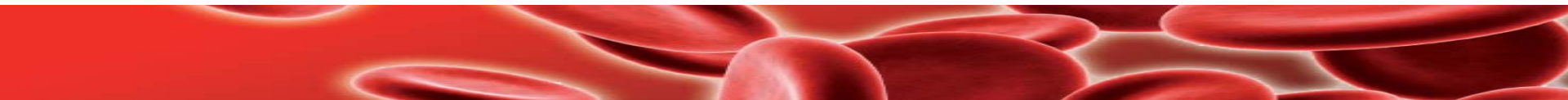


# SHOT Zooms in on Laboratory Errors

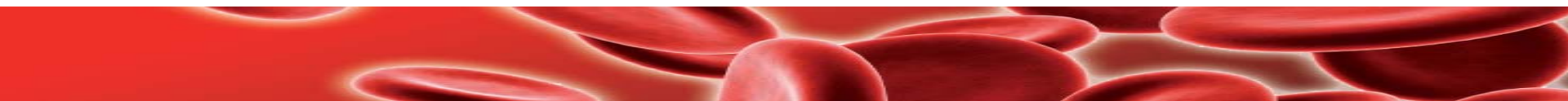
Debbie Asher  
SHOT Standing Working Group





# SHOT and Laboratory Errors

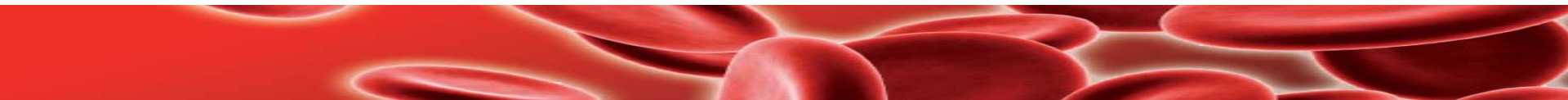
Report Year	No of Analysed IBCT Cases	Laboratory as Site of Primary Error	
		No	%
2003	348	155	45
2004	439	180	41
2005	485	179	37
2006	400	155	39





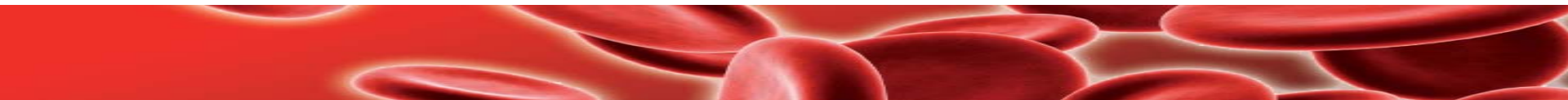
# Summary of Laboratory Errors

Year	Total Errors	Wrong Sample	Transcription	Interpretation	Component Selection	Labelling	Procedural	Testing
2005	179	13	14	2	85	1	49	12
2006	156	3	9	11	55	5	52	21



# ABO Grouping Errors

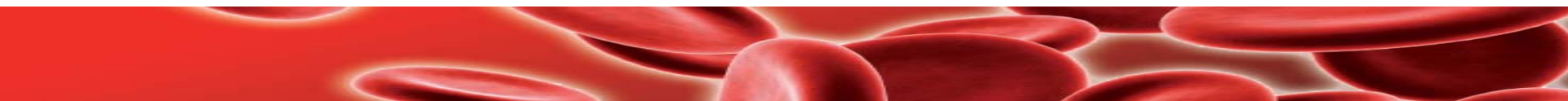
Year	Total No. of Cases	Wrong Sample Tested	Interpretation Transcription Errors	Other	ABO Incompatible Transfusion	Sequelae
2003	17	8	9		7	2 major morbidity
2004	18	5	12	1	6	1 death 1 major morbidity
2005	22	9	12	1	9	1 AHTR
2006	6	2	3	1	0	No morbidity





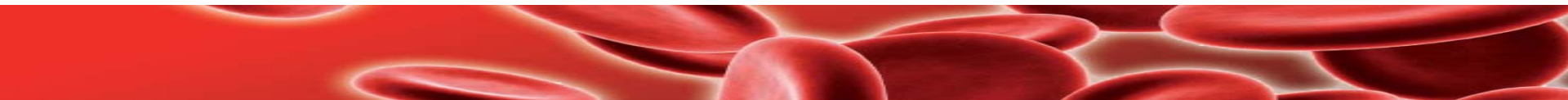
# RhD Typing Errors

- 2 manual tube tests, incorrectly performed
- 1 transcription error, manual test
- 3 query misread/transcription error
- 4 errors in manual recording from automated/semi-automated analysers
- 2 failure to follow protocol following initial weak reactions with anti-D
- 5 errors analyser/equipment problems



# Learning Points 1

- A laboratory quality system, as required by the Blood Safety and Quality Regulations, must include internal incident reporting mechanisms and appropriate, documented, corrective actions.
- Problems with reagents or laboratory equipment should be reported to the manufacturer and to MHRA Medical Devices division so that other users may be alerted.





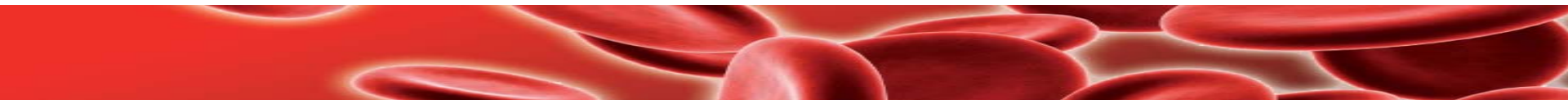
# Other Pre-Transfusion Errors

Testing/Interpretation (n=6):

- Weak antibodies missed
- Incorrect phenotype

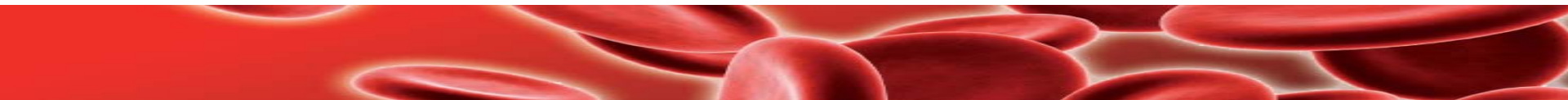
Failure to follow SOP (n=22):

- Inappropriate use of electronic issue
- Use of samples that were too old
- Failure to consult maternal records when supplying blood to baby
- Failure to link current and historic records



## Learning Points 2

- Laboratories must ensure that robust systems are in place for highlighting 'outstanding' work on a patient, for example, patient records awaiting merging, incomplete antibody identification.
- Laboratories should follow the comprehensive guidance on the electronic selection and issue of units given in the BCSH guideline: 'The specification and use of IT systems in Blood Transfusion Practice'.



# Errors Related to IT Systems

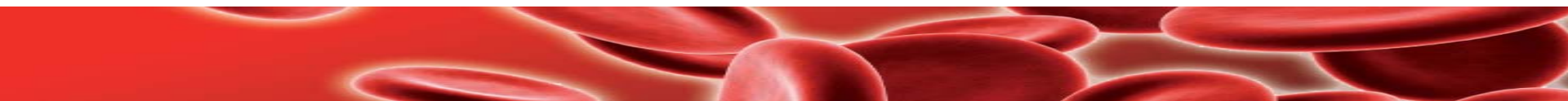
Error	No of Errors	Special Requirements not Met	Other	BMS TX Specialist
Records not merged	6	6	0	3/6
Computer system down	6	5	1 transcription error	6/6
Historical record not consulted	3	3	0	2/3
Search protocols for previous records insufficiently flexible	3	3	0	2/3
Warning flag ignored	2	2	0	1/2
Data not transferred from old system	1	0	1 ABO mismatch	1/1
Failure to update warning flags	1	0	1 MB-FFP for a child	0/1
Inappropriate electronic issue	6	4	2 protocol violations	5/6

# When and Who are Making Errors?

	Total Errors	Core Hours	Non Core Hours	Time Not Known	TX BMS	Not a TX BMS	BMS Specialty Not Known
Wrong Blood Incidents	25	8	15	2	14	10 (2 locums)	1
Other Pre-Transfusion Testing	28	13	14	1	21	7	
Post Transplant	4	1	3		1	3	
<b>Total</b>	<b>57</b>	<b>22</b>	<b>32</b>	<b>3</b>	<b>36</b>	<b>20</b>	<b>1</b>

## Learning Points 3

- Competency based training for laboratory staff must include those working out of hours.
- Clinical staff must ensure that the transfusion laboratory is fully aware of complex cases, and unless there is extreme urgency, pre-transfusion testing should be done by experienced staff during normal working hours.

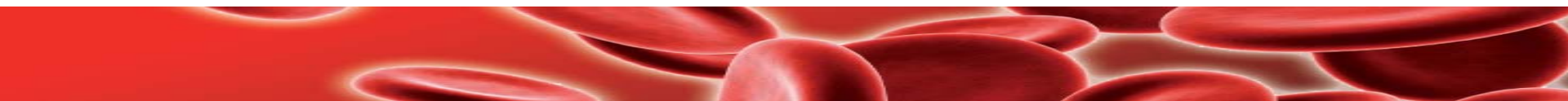




# Errors Relating to Issue of Anti-D

Laboratory errors accounted for 37 (47%) of errors in this category:

- Transcription, documentation
- D typing errors and difficulties
- Inability to correctly interpret the finding of anti-D in antenatal serology testing
- Inappropriate staffing:
  - MLA issued anti-D when immune anti-D present
  - Insufficient, experienced staff available to interpret a Kleihauer film



## Learning Points 4

- Laboratories undertaking antenatal serological testing should have clear protocols based on BCSH guidelines including algorithms for repeat testing in cases where there is uncertainty whether anti-D is passive or immune.
- Senior, experienced laboratory staff should take responsibility for interpretation of results post issue of anti-D.

