Annual SHOT Report 2014 – Supplementary Information

Chapter 7: Near Miss Reporting (NM)

DATA SUMMARY
Total number of cases: n=1167

Implicated components		Mortality/morbidity	
Red cells	**0**	Deaths *definitely* due to transfusion	**0**
Fresh Frozen Plasma	**0**	Deaths *probably/likely* due to transfusion	**0**
Platelets	**0**	Deaths *possibly* due to transfusion	**0**
Cryoprecipitate	**0**	Major morbidity	**0**
Granulocytes	**0**	Potential for major morbidity *(Anti-D or K only)*	**0**
Anti-D Ig	**0**		
Multiple components	**0**		
Unknown	**1167**		

Gender		Age		Emergency vs. routine and core hours vs. out of core hours		Where transfusion took place	
Male	**423**	≥ 18 years	**1075**	Emergency	**0**	Emergency Department	**103**
Female	**697**	16 years to <18 years	**7**	Urgent	**0**	Theatre	**31**
Not known	**47**	1 year to <16 years	**31**	Routine	**0**	ITU/NNU/HDU/Recovery	**32**
		>28 days to <1 year	**15**	Not known	**1167**	Wards	**422**
		Birth to ≤28 days	**37**			Delivery Ward	**6**
		Not known	**2**	In core hours	**613**	Postnatal	
				Out of core hours	**180**	Medical Assessment Unit	**20**
				Not known/Not applicable	**374**	Community	**22**
						Outpatient/day unit	**68**
						Hospice	**3**
						Antenatal Clinic	**67**
						Hospital Transfusion Laboratory	**294**
						Obstetrics	**83**
						Other/Unknown	**16**

(ITU=Intensive therapy unit; NNU=Neonatal unit; HDU=High dependency unit)

Sub categorisation of total near miss errors n=1167

Table 7.4: Numbers of near misses originating in clinical or laboratory areas

Category of incidents	Number of cases	Percentage of cases
Clinical errors	854	73.2%
Laboratory errors	313	26.8%
Total	**1167**	**100%**

Near miss clinical errors n=854

Table 7.5: Clinical errors according to category

Category of clinical errors	Number of cases	Percentage of cases
Sample errors - Wrong blood in tube (WBIT)*	686	80.3%
Other sample labelling errors	21	2.4%
Request errors	58	6.8%
Component collection/administration errors	45	5.3%
Cold chain errors	34	4.0%
Anti-D immunoglobulin errors, e.g. requests for: incorrect volume, D positive woman, woman with immune anti-D	10	1.2%
Total	**854**	**100%**

**Includes 2 full blood count (FBC) wrong blood in tube errors where transfusions nearly took place based on the incorrect results*

Wrong blood in tube (WBIT) n=686

Definition of wrong blood in tube incidents:

- Blood is taken from the wrong patient and is labelled with the intended patient's details
- Blood is taken from the intended patient, but labelled with another patient's details

Table 7.6: Staff responsible for wrong blood in tube incidents

Staff responsible for taking sample	Number of cases	Percentage of cases
Doctor	255	37.2%
Nurse	148	21.6%
Midwife	128	18.7%
Healthcare assistant	53	7.7%
Phlebotomist	49	7.1%
Medical student	4	0.6%
Other/unknown	49	7.1%
Total	**686**	**100%**

Year on year, doctors remain the staff group most likely to be responsible for wrong blood in tube errors, accounting for 255/686 (37.1%) in 2014.

Table 7.7: Practices leading to wrong blood in tube

Practices leading to wrong blood in tube	Number of cases	Percentage of cases
Patient not identified correctly	293	42.7%
Sample not labelled at patient's (bed)side	243	35.4%
Sample not labelled by person taking blood	38	5.6%
Pre-labelled sample used	9	1.3%
Maternal/baby or twin samples (n=3) transposed	35	5.1%
Other/unknown*	68	9.9%
Total	**686**	**100%**

**Includes one report of deliberate identity fraud (Case 2 in Chapter 8 Human Factors)*

Table 7.8: Circumstances leading to the detection of wrong blood in tube

How wrong blood in tube error was detected		Number of cases	Percentage of cases
Detected before laboratory procedures started (n=107)	Sample taker realised	63	9.2%
	Laboratory vigilance	38	5.5%
	Results from non-transfusion samples (e.g. FBC)	6	0.9%
Detected during laboratory procedures (n=478)	During testing	238	34.7%
	At authorisation	240	35.0%
Detected after laboratory procedures completed (n=101)	Further sample differed	37	5.4%
	Other colleague realised sampling error	25	3.7%
	Sample taker realised	18	2.6%
	Results from non-transfusion samples (e.g. FBC)	16	2.3%
	Pre-administration checks	3	0.4%
	Patient realised the error	2	0.3%
Total		**686**	**100%**

The detection of a wrong blood in tube incident relies on constant vigilance. Laboratory quality processes during testing and authorisation detected 478/686 (69.7%), usually by grouping anomalies, but 107/686 (15.6%) were identified before laboratory testing began, often by the sample taker realising their error. A further 101/686 (14.7%) were detected after laboratory procedures were completed.

Request errors n=58

Table 7.9: Categories of request errors

Request errors		Number of cases	Percentage of cases
Specific requirements not requested (n=41)	Irradiated	29	50.0%
	Red cell phenotype	6	10.3%
	CMV negative	3	5.2%
	Group for HSCT* patient	3	5.2%
Request based on erroneous test results		6	10.3%
Request for incorrect patient		6	10.3%
Inappropriate request		5	8.7%
Total		**58**	**100%**

**HSCT=haemopoietic stem cell transplant*

Table 7.10: Mode of detection of request errors

Mode of detection	Number of cases	Percentage of cases
In laboratory	37	63.8%
Bedside pre-administration check	21	36.2%
Total	**58**	**100%**

Component collection/administration errors n=45

Table 7.11: Component collection/administration errors

Collection/administration errors	Number of cases	Percentage of cases
Incorrect units collected by ward staff/porters	33	73.4%
Attempted administration to incorrect patient	10	22.2%
Wrong details on collection slip	1	2.2%
Other - incorrect giving set	1	2.2%
Total	**45**	**100%**

Collection of an incorrect component can be the key error, whether it is for the wrong patient or the wrong type of component. This can lead to a sequence of mistakes that if not caught could result in the patient receiving an incorrect blood component.

Case 3: Red cells collected instead of fresh frozen plasma (FFP)

FFP was prescribed but red cells were collected, resulting in the incorrect component being spiked, but not given. A nurse asked the healthcare assistant (HCA) to collect FFP, but the nurse did not complete a collection slip. The HCA did not have an access barcode for the refrigerator, so asked another HCA to help. This HCA completed the collection slip, wrongly putting that red cells were required, so red cells were collected instead of FFP. The nurse did not do the bedside checks before spiking the bag in the treatment room. When the nurse went to the patient's bedside it was realised the prescribed component was FFP.

Errors related to management of the cold chain n=34

Table 7.12: Errors related to management of the cold chain

Cold chain errors	Number of cases	Percentage of cases
Components stored inappropriately	17	50.0%
Incorrect transport/packing of units	10	29.4%
Returned to issue refrigerator after out of temperature controlled environment >30 minutes	6	17.7%
Part used unit returned to satellite blood refrigerator	1	2.9%
Total	**34**	**100%**

Anti D Immunoglobulin errors n=10

Table 7.13: Anti D immunoglobulin errors

Anti D Immunoglobulin errors	Number of cases	Percentage of cases
Incorrect volume requested	5	50%
Requested for D-positive woman	3	30%
Requested for woman with immune anti-D	1	10%
Anti-D Ig not given when required	1	10%
Total	**10**	**100%**

Near miss laboratory errors n=313

The near miss laboratory errors reflect those discussed in Chapter 11, Summary of Events Originating in the Hospital Transfusion Laboratory.

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Table 7.14: Categories of laboratory errors made

Near miss laboratory categories	Total	Percentage	Chapter					
			IBCT	SRNM	HSE	RBRP	ANTI-D	ADU
Sample receipt and registration	58	18.6%	14	29	0	14	1	0
Testing	36	11.5%	21	12	0	0	3	0
Component selection	68	21.7%	17	17	11	0	23	0
Component labelling, availability, handling and storage	150	47.9%	7	1	51	85	6	0
Other = Bacterial contamination*	1	0.3%	0	0	1	0	0	0
Total	**313**	**100%**	**59**	**59**	**63**	**99**	**33**	**0**

**This case was reported in the Transfusion Transmitted Infection Chapter in the 2013 Annual SHOT Report, because the investigation had been completed by the Blood Service, but the incident report was not finalised in the SHOT Database until 2014, so is included here this year.*

Sample registration and receipt n=58

Table 7.15: Sample receipt and registration errors

Sample receipt and registration errors	Number of cases	Percentage of cases
Specific requirements not met	29	50.0%
Incorrect identifiers entered onto LIMS	14	24.1%
Sample booked under incorrect record	14	24.1%
Incorrect patient merge in LIMS/PAS	1	1.8%
Total	**58**	**100%**

Testing n=36

Table 7.16: Testing errors

Testing errors	Number of cases	Percentage of cases
Incomplete testing	12	33.3%
Interpretation	8	22.2%
Transcription errors	6	16.7%
Equipment failure / testing problem	6	16.7%
Manual grouping errors	4	11.1%
Total	**36**	**100%**

Component selection n=68

Table 7.17: Component selection errors

Component requirement or specification missed		Number of cases	Percentage of cases
Red cell phenotype		11	16.2%
Time expired component selected		11	16.2%
Incorrect component type selected		7	10.3%
Incorrect D type selected		7	10.3%
Irradiated		6	8.8%
Incorrect ABO type selected		3	4.4%
Anti-D immunoglobulin (Ig) selection errors (n=23)	Anti-D Ig issued to D-positive woman	10	14.7%
	Wrong volume of Anti-D Ig issued	9	13.2%
	Anti-D Ig issued to woman with immune anti-D	2	2.9%
	Anti-D Ig issued to mother of D-negative baby	1	1.5%
	Wrong product selected (PCC*)	1	1.5%
Total		**68**	**100%**

**PCC=prothrombin complex concentrate*

Component labelling, availability, and handling and storage errors (HSE) n=150

Table 7.18: Component labelling, availability, and handling and storage errors (HSE)

Component errors	Number of cases	Percentage of cases
Component labels transposed	66	44.0%
Time expired component available	34	22.7%
Incorrect patient information on label	31	20.7%
Cold chain errors	11	7.3%
Exceeded BCSH* (Milkins et al 2012) sample timing guidelines	7	4.7%
Incorrect component sent to ward	1	0.6%
Total	**150**	**100%**

**BCSH=British Committee for Standards in Haematology*

Near Miss - Previous Recommendations

Year first made	Action	Recommendation
2013		No new recommendations
2012	**Hospital Transfusion Committees (HTC)**	Laboratory and clinical areas should continue to report 'near miss' errors, as these are a useful indication of potential failings, allowing corrective and preventative actions to be taken before any harm is done
2012	**Chief Executive Officers of Hospitals, Trusts/Health Boards, Pathology Laboratory Managers**	There should be zero tolerance of sample labelling errors across all pathology disciplines and local audits of sample labelling should continue to be undertaken to identify the ongoing risks of patient misidentification
2012	**Hospital Transfusion Committees (HTC)**	There should be strict adherence to the requirement for a group check sample on patients without a historical blood group as detailed in the British Committee for Standards in Haematology (BCSH) guidelines for pre-transfusion compatibility testing
2010	**Deaneries, clinical risk managers, HTTs**	All Trusts must ensure that medical staff are trained and competency assessed for taking blood samples in accordance with the requirements of NPSA SPN 14
2010	**HTTs**	Education for staff involved in the transfusion process should include knowledge of the correct storage conditions for all blood components.
2010	**HTCs**	Each Trust should possess a policy and procedure for the transfer of blood components with a patient which reflects the guidance given by the National Blood Transfusion Committee (NBTC) and the NHSBT Appropriate Use of Blood Group. There is also guidance on transfer of stocks between hospitals that Medicines and Healthcare products Regulatory Agency (MHRA) have provided with clarification and guidance regarding Blood Safety and Quality Regulations (BSQR) requirements and compliance which is available as follows: http://www.transfusionguidelines.org.uk/index.aspx?pageid=7722&section=23&publication=REGS&Highlight=transfer