7 Near Miss Reporting (NM) n=1167

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Definition:

A 'near miss' event refers to any error which if undetected, could result in the determination of a wrong blood group or transfusion of an incorrect component, but was recognised before the transfusion took place.

Key SHOT messages

- Ensure a group check policy is in place as detailed in the British Committee for Standards in Haematology (BCSH) guidelines for pre-transfusion compatibility (BCSH Milkins et al. 2013)
- Identify patients fully at every stage, but particularly when taking a pre-transfusion sample and before spiking units for transfusion
- Laboratory staff should ensure all information technology (IT) systems are audited on a regular basis against the BCSH guidelines for the specification, implementation and management of IT systems in hospital transfusion laboratories (BCSH Jones et al. 2014). There should be a robust policy for any manual amendments
- All relevant near miss events should be reported to SHOT for improved learning opportunities

Near misses n=1167

There were 1167 near misses reported in 2014 compared to 996 reported in 2013. There continues to be a high number of reports of wrong blood in tube incidents (WBIT), representing 686/1167 (58.8%) of all near misses.

WBIT incidents are discussed in greater detail in Chapter 9, Incorrect Blood Component Transfused (IBCT).

Previous Annual SHOT Reports have commented that there might be a disinclination to report near miss incidents other than the most serious cases (such as WBIT incidents) that could result in transfusion of an incorrect component. This may be due to competing workload pressures. Non-WBIT near miss cases include all other serious errors that were identified before the patient was harmed. These could have led to transfusion of an incorrect or less suitable blood component or erroneous treatment related to anti-D immunoglobulin (Ig) prophylaxis (Table 7.1 shows the sub-categorisation of near miss events according to SHOT definitions). In 2014 there was an increase in reports of near miss cases other than WBIT incidents. These comprise 481/1167 (41.2%) of all near misses, compared to 353/996 (35.4%) in 2013 (Figure 7.1). Important lessons can be learnt from all near miss errors, so continued reporting is strongly encouraged.

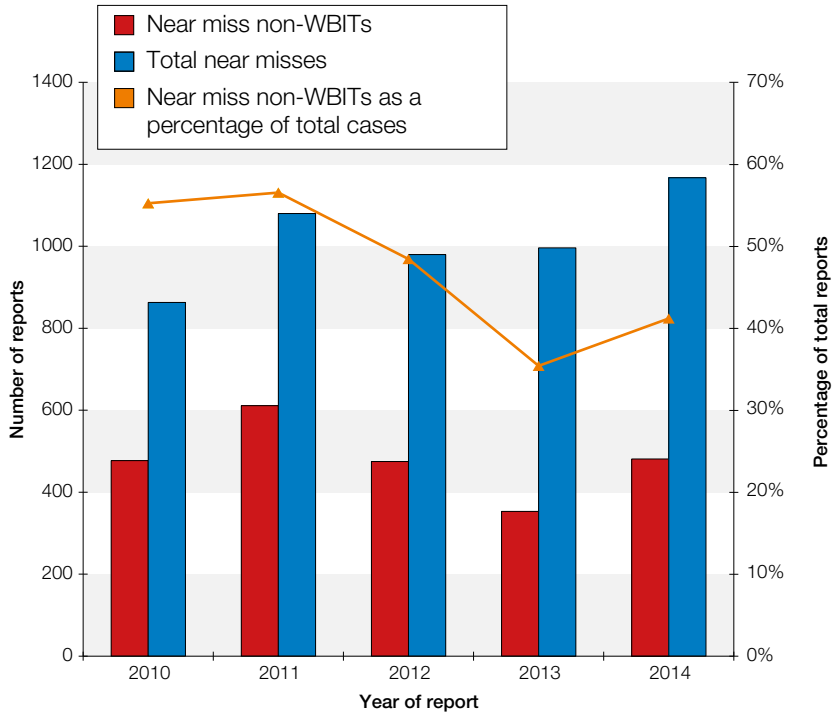

Figure 7.1: Near miss non-WBIT cases compared to total near misses 2010-2014

Discussion of near miss errors in other chapters

In order to highlight the importance of continuing to report and learn from near miss incidents, full discussions of these cases are incorporated into each relevant chapter according to the likely outcome if the near misses had progressed to full incidents and components had actually been transfused.

Category		Chapter	Number of cases	Percentage of cases
Incorrect blood component transfused (IBCT)	Wrong component transfused (WCT)	Chapter 9	795	68.1%
	Specific requirements not met (SRNM)	Chapter 9	99	8.5%
Right blood right patient (RBRP)		Chapter 23*	118	10.1%
Handling and storage errors (HSE)		Chapter 24*	98	8.4%
Adverse events related to anti-D Ig		Chapter 25*	43	3.7%
Avoidable, delayed or undertransfusion (ADU)		Chapter 10	14	1.2%
Total			**1167**	**100%**

These chapters can be found in the 2014 Annual SHOT Report: Web Edition – www.shotuk.org

Table 7.1: Categorisation of all near misses according to SHOT definitions

Importance of group-check policy

Data from WBIT incidents were analysed to highlight cases where the reporter mentioned the policy of requiring a group-check sample on a previously unknown patient, as recommended in the 2012 BCSH guidelines for pre-transfusion compatibility procedures (BCSH Milkins et al. 2013). As this question is not specifically asked in the near miss questionnaire, the analysis in Table 7.2 is only a small snapshot of cases.

Outcome of testing a group check sample	Number of cases	Percentage of cases
Original sample was WBIT	20	74.1%
Group-check sample was WBIT	3	11.1%
Circumvention of process (both samples taken at same time)	3	11.1%
Other (request for check sample alerted sample taker to error with original)	1	3.7%
Total	**27**	**100%**

Table 7.2: Outcomes of testing a group-check sample on a previously unknown patient n=27

In addition to these 27 cases, root cause analyses of a further 12/686 (1.7%) WBIT incidents indicated that implementation of a group-check protocol was to be considered as a corrective action following the incident. In 2012 SHOT recommended 'there should be strict adherence to the requirement for a group-check sample on patients without a historical blood group' and that recommendation remains active.

Case 1: Unexpected repeat sample prevents selection of ABO-incompatible blood for a preoperative patient

A WBIT incident was detected due to blood group discrepancy, which occurred three days before the group-check sample rule was implemented in this Trust/Health Board. At the time a group-check sample was not a requirement, but the anaesthetist sent a repeat crossmatch sample preoperatively. If that extra sample had not been sent, the initial sample previously received from the emergency department (ED) would have been used. The ED sample grouped as A D-positive, but the repeat sample showed the patient was actually B D-positive.

Case 2: WBIT at hospital X discovered through a linked database at hospital Y

A sample grouped as A D-positive in hospital X. There was no previous history for this patient. Approximately two weeks later a sample from the same patient was received at hospital Y, which grouped as O D-negative. The two hospitals have linked databases, so the second hospital noticed the groups did not match. A repeat sample confirmed the group as O D-negative and the investigation revealed the first sample could not have been from this patient.

Quality management systems (QMS)

BCSH guidelines for pre-transfusion compatibility procedures (BCSH Milkins et al. 2013) recommend laboratories to have a documented QMS and clinical areas should have equally robust quality processes. Analysis of SHOT near miss cases shows that errors often cannot be detected by the quality processes and Table 7.3 shows that 458/1167 (39.2%) of cases were only detected by chance. Many near miss errors, particularly WBITs, are detected by testing anomalies in the laboratory, 525/1167 (45.0%). This is part of the QMS, but has an element of good fortune that the test result differed on this occasion to highlight the error. The laboratory QMS detected a further 57/1167 (4.9%). Quality processes in the clinical area, particularly the final bedside check, can also prevent patient harm by detecting errors before transfusion, 127/1167 (10.9%).

Table 7.3: Near miss detected by quality management system or good fortune

Near miss detection	Number of cases	Percentage of cases
Laboratory QMS	57	4.9%
Laboratory QMS, but detected because ABO/D or other test result differed	525	45.0%
Clinical quality processes	127	10.9%
Accidental detection, QMS would not have detected the error	458	39.2%
Total	**1167**	**100%**

Case 3: Mismatch with historical group detects that sample was taken from person in the house next door

A crossmatch sample was taken by the community team, but the group was determined to be different from the historical group. The investigation showed the sample had mistakenly been taken from the person living next door to the patient. The second individual had not questioned the nurse as he himself was awaiting a nurse to give him an injection.

IT and analyser-related near miss reports n=6

Unusually, in 2014 there were several reports of apparent equipment failures leading to testing problems, n=6. All incidents were in separate Trusts/Health Boards and, where stated, different analysers were implicated. These issues are summarised in Chapter 11 Summary of Events Originating in the hospital transfusion laboratory.

Further analysis of total near miss errors n=1167

Tables showing the sub-categorisation of near miss errors consistent with those in previous Annual SHOT Reports (2010-2013) can be found in the supplementary information on the SHOT website www.shotuk.org.

COMMENTARY

WBIT incidents continue to be the most commonly reported near miss error, 686/1167 (58.8%) of all near misses. A group-check policy can improve the chance of detecting a sampling error and this policy should be implemented in every Trust/Health Board as detailed in the BCSH guidelines for pre-transfusion compatibility procedures (BCSH Milkins et al. 2013) and recommended by SHOT in the 2012 Annual SHOT Report (Bolton-Maggs et al. 2013).

Misidentification of patients is a common theme in many near miss reports, especially those involving WBIT or when collecting blood components for transfusion. Patients should be carefully and fully identified at every stage, but particularly when taking a pre-transfusion sample and before spiking units for transfusion.

The United Kingdom Transfusion Laboratory Collaborative (UKTLC) has recommended that all laboratories have complete walk-away automation which is in use 24 hours, 7 days a week, with bidirectional interfaces to the laboratory information management system (LIMS) (Chaffe et al. 2014). A small number of testing errors (n=6) were reported to have resulted from unexpected performance within IT systems, although exact causes were not known in all cases and may have involved some manual input. Laboratory staff should ensure all IT-based equipment and interfaces are fully validated and tested with all possible operational and performance scenarios. There should also be a robust policy for any manual amendments that are made to automated results.

An incorrect blood component transfused (IBCT) is the most dangerous transfusion error, but all near misses flag up risk of harm to patients, so increased reporting of these may highlight where quality improvements could be made. All appropriate near miss events should be reported to SHOT for improved learning opportunities.

References

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