Near Miss (NM) Reporting n=1130

13

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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.

Abbreviations used in this chapter

cffDNA	Cell-free fetal deoxyribonucleic acid	**NM**	Near miss
HSIB	Healthcare Safety Investigation Branch	**PAS**	Patient Administration System
ID	Identification	**WBIT**	Wrong blood in tube
Ig	Immunoglobulin		

Near miss events account for the largest proportion of the events/reactions reported to SHOT (1130/3214, 35.2%) however for the third year in a row, the number of reports included has decreased, n=1314 in 2019, and n=1451 in 2018. The overall percentage of NM compared to total SHOT reports is also decreasing, with 2020 being the lowest percentage in the last 10 years.

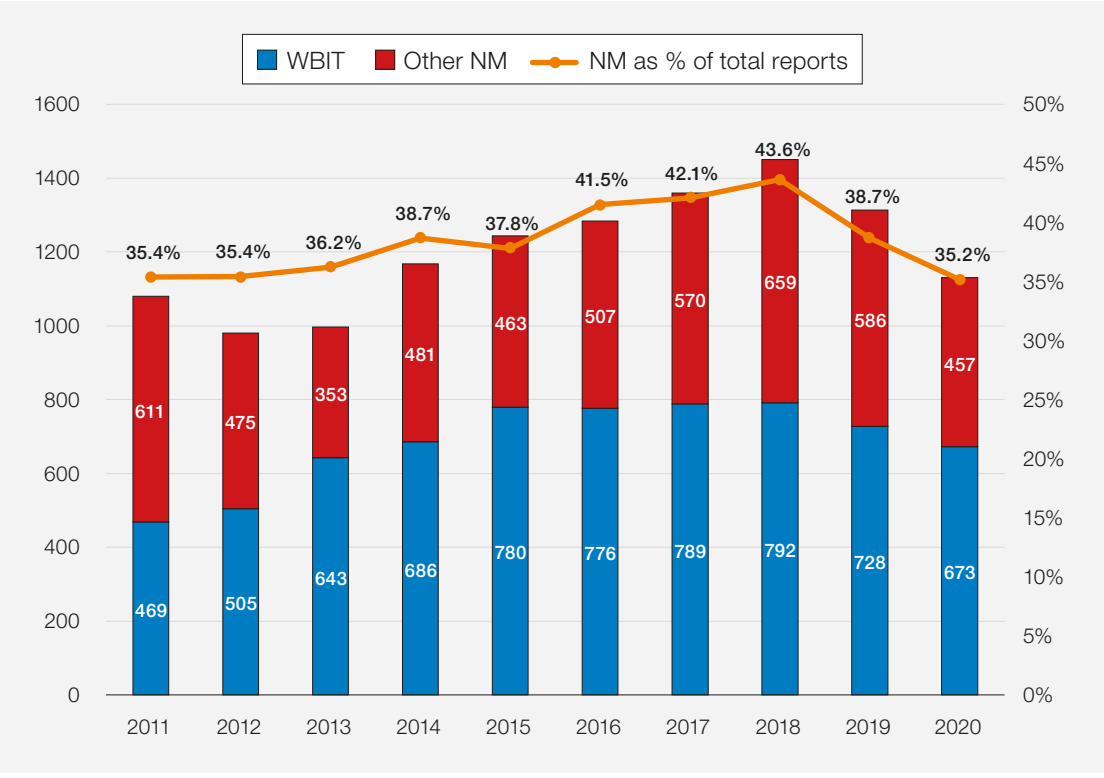


Figure 13.1: A decade of near miss and WBIT reports 2011-2020

WBIT= wrong blood in tube; NM= near miss

Near misses may occur many times before an actual harmful incident. Many avoidable events including deaths have a history of related NM preceding them. They represent 'error prone situations' that can impact other patients and staff. To truly improve patient safety, all healthcare organisations must recognise NM as valuable learning and improvement opportunities. Staff should not be falsely reassured by NM because no harm occurs and should not mistakenly conclude that the system of care is safe. Investigating NM and looking into correctable systemic factors will help improve patient safety. In a culture committed to improving safety, NM are 'free lessons'. The goal of any reporting system is to identify and address any root causes or contributory factors of incidents (not merely logging the events) and this can be achieved by NM. There are many more NM events than there are actual adverse events. Thus, the emphasis on reporting adverse events results in a small database with insufficient data for analysis.

By reporting near misses, we can have a large database for analysis. Staff should be encouraged and applauded for picking up NM and reporting them. Each time that a staff member ignores or fails to report a NM situation, the likelihood of a subsequent serious incident increases. It is important that the learning from investigating NM informs improvement activities and is shared widely.

Discussion of near miss errors in other categories

Near miss cases have been reviewed and discussed in each relevant chapter for this Annual SHOT Report, and Table 13.1 shows the chapters that include near miss events according to SHOT definitions.

Table 13.1: Categorisation of all near misses according to SHOT definitions (n=1130)

SHOT Reporting Categories		Discussed in chapter	Number of cases	Percentage of cases
Incorrect blood component transfused (IBCT)	Wrong component transfused (WCT)	Chapter 10	111	9.8%
	Wrong blood in tube (WBIT)	Chapter 13a	673	59.6%
	Specific requirements not met (SRNM)	Chapter 10	67	5.9%
Handling and storage errors (HSE)		Chapter 11	129	11.4%
Right blood right patient (RBRP)		Chapter 14	93	8.2%
Adverse events related to anti-D Ig (Anti-D Ig)		Chapter 9	35	3.1%
Avoidable, delayed or under/overtransfusion (ADU)		Chapter 12	21	1.9%
Miscellaneous		N/A	1	0.1%
Total		-	**1130**	**100%**

WBIT incidents continue to be the largest subset of near miss cases, 673/1130 (59.6%) of all near miss events and as such are analysed and reported separately in this chapter.

Near Miss – Wrong Blood in Tube (WBIT) n=673

13a

Authors: Paula Bolton-Maggs and Pamela Diamond

Definition:

- **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**

Key SHOT messages

- The number of errors in blood sampling in maternity departments is of concern and needs to be addressed with midwives and other obstetric staff. These samples may be taken in the community setting, or in hospital clinics and wards
- The presence of a historical group resulted in detection of many wrong blood in tube (WBIT) events in the laboratory and demonstrates the value of the two-sample rule
- Near miss events matter: they provide an opportunity to learn and avoid serious and potentially life-threatening events, particularly ABO-incompatible transfusion

Recommendations

- As recommended in the 2017 Annual SHOT Report, 'all available information technology (IT) systems to support transfusion practice should be considered and these systems implemented to their full functionality. Electronic blood management systems should be considered in all clinical settings where transfusion takes place. This is no longer an innovative approach to safe transfusion practice; it is the standard that all should aim for'
- Near miss incidents should be fully investigated as the learning may prevent serious events in future

Action: Chief executives, medical directors

- The Royal College of Midwives should reinforce the importance of adherence to local practices for correct patient identification and sample labelling to avoid potentially serious outcomes for patients. The same standards should be applied whether in the patient's home, a community setting or hospital clinic

Action: Royal College of Midwives

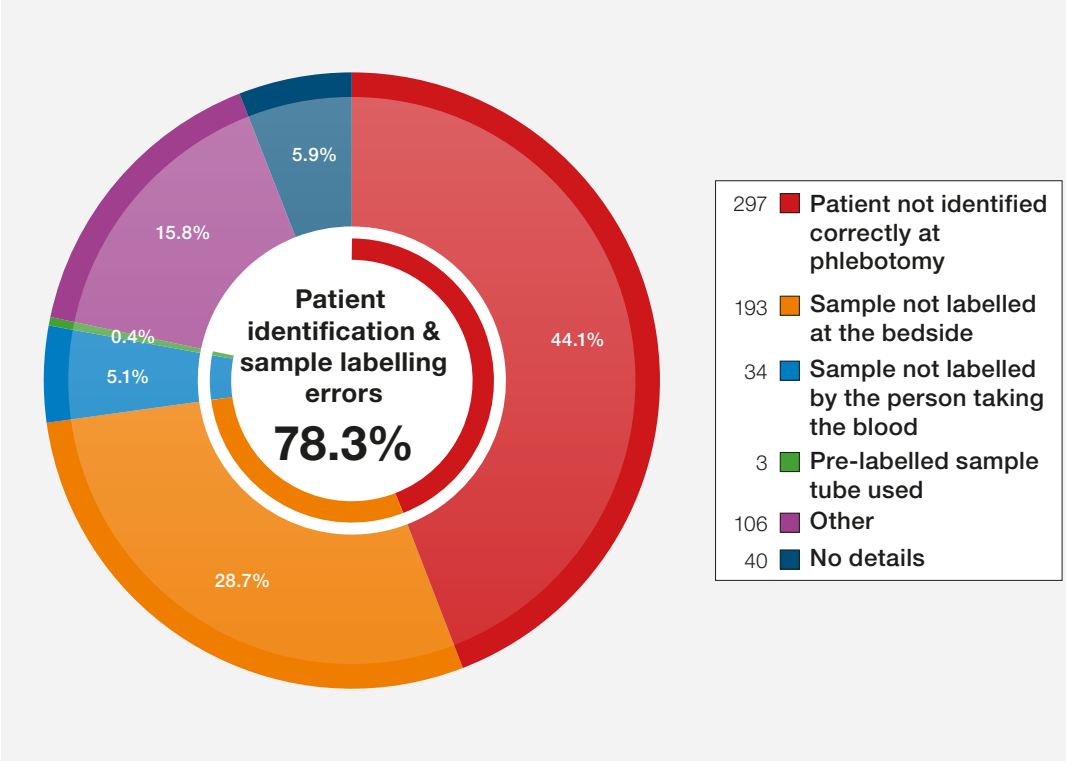
Introduction

WBIT samples remain a cause for concern. In 2020, 673 were reported which is a decrease from 728 in 2019. These comprise the majority of near miss reports, 673/1130 (59.6%). A third of reports originated in maternity care, 233/673 (34.6%), and are considered in a subsection below. Four incidents of wrong component transfused were reported as a result of WBIT events, fortunately with no harm. These are described in Chapter 10, Incorrect Blood Component Transfused (IBCT).

What errors lead to WBIT?

Figure 13a.1 shows that the majority of WBIT errors are made due to the patient not being identified correctly at phlebotomy or the sample being labelled away from the patient. These two factors were identified in the inaugural Annual SHOT Report (SHOT, 1998) when it was first noted that wrong transfusion was responsible for most reported incidents. The recommendation was made in 1998 to ensure correct patient identification by asking the patient to state their name and date of birth, and that samples should be labelled at the bedside at the time of sampling. This should be a single uninterrupted procedure. Failure to do this has resulted in incompatible transfusions and death. This recommendation remains central for safe transfusion.

Figure 13a.1: Primary errors leading to WBIT (n=673)



Other causes of WBIT were recorded including patients having similar names, errors at initial registration in the PAS and in one case a midwife changed the patient surname on the form as it was believed that the patient had changed her name. A patient was identified by review of the notes at the bedside, others (n=3) were booked incorrectly into a clinic or on admission. In another case, sample labels were used from a patient who had attended earlier in the day. One patient was misidentified by the police who had taken the information from a 'friend' and another patient had deliberately given the wrong details in the emergency department after a stabbing.

It is notable that there were often serial errors. In 635/673 (94.4%) reports where the primary error was recorded there was at least one additional error in 418/635 (65.8%).

Case 13a.1: Misidentification of an adult triplet

A woman attended the early pregnancy unit wearing a facemask (COVID-19 precautions). The midwife asked for her name, first line of address and date of birth. Blood samples were taken but allocated to the wrong patient record. She was one of triplets with the same date of birth, family name and address. The first name was misheard but very similar to the others, differing only by a letter. The patient was concerned that this might have happened and clarified her name when the results were telephoned. The triplets were advised for any hospital attendance always to ensure they were identified in addition by their middle names which were different.

Case 13a.2: Patient identification errors by three different members of staff

Before admission, a ward clerk updated a patient name for a child <5 years of age (Patient 1) from 'baby' to a name already belonging to another patient (Patient 2). On admission no ID band was put on, Nurse 1 sampled the patient without positive identification and labelled the sample using patient notes. This sample from Patient 1 (labelled with Patient 2 details) was rejected due to an insufficient amount of blood in the sample tube. Nurse 2 (without required competency for transfusion) took another sample again without positive ID from Patient 1 (labelled with Patient 2 details) labelling it away from the bedside using the request form and prescription chart. This sample was also rejected as there was no signature to confirm the patient had been identified. A blood group request was made on the computer with Patient 2's details, further samples were taken from Patient 1 and accepted by the transfusion laboratory. The blood group result was entered on Patient 2's record (sample was from Patient 1). A request was made for platelets using the correct details for Patient 1, but the laboratory staff now asked for blood samples as they did not have a confirmed group. The ward staff knew their patient had several blood samples taken earlier and the nurse was asked to confirm the ID of the patient she had sampled. She then confirmed with the mother that this was Patient 1 who had been misidentified as Patient 2. Platelets were transfused with delay while the child was admitted to the high dependency unit and an ID band was applied.

Most near miss WBIT incidents are detected in the laboratory, either during testing or at authorisation of results: Figure 13a.2.

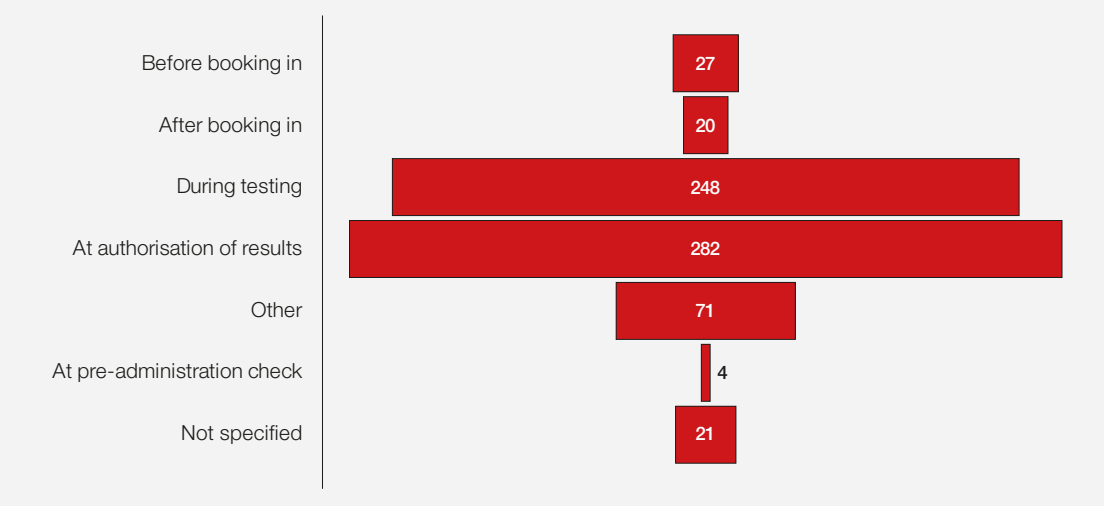


Figure 13a.2: Point in the process where the error was detected (n=673)

ABO-incompatibility

If the WBIT remains undetected there is potential for transfusion of incompatible components. In 555 cases blood group data were provided. Had these patients required red cell transfusions, 239/555 (43.1%) would have been ABO-incompatible with a risk of serious harm or death.

		Blood group of the component that might have been transfused as a result of the WBIT					
		A	B	AB	O	Compatible	Incompatible
Patient blood group	A	54	37	15	115	169	52
	B	30	9	5	47	56	35
	AB	3	8	0	10	21	0
	O	112	34	6	70	70	152
	Totals	**199**	**88**	**26**	**242**	**316**	**239**

Table 13a.1: Blood groups and potential red cell incompatibility of WBIT (n=555)

Who takes the samples?

There is paucity of information at a national level regarding the staff groups involved in taking transfusion samples. Previous Annual SHOT Reports have included data of staff groups involved in transfusion sampling provided by the Oxford Hospitals group for illustration, but this may not be truly representative across all NHS Trusts and Health Boards. This year, data is also included from the Southampton Hospitals. Understanding patterns of errors in different clinical situations will help identify targeted interventions to improve practice. British Society for Haematology guidelines (BSH Robinson, 2018) must be followed to ensure safe practice. Further details with information from Oxford and Southampton can be seen in the supplementary material that can be accessed online at this link (https://www.shotuk.org/shot-reports/report-summary-and-supplement-2020/).

Review of maternity cases n=233

The majority of near miss WBIT cases from maternity reported to SHOT in 2020 were taken by midwives 169/233 (72.5%). Healthcare assistants were responsible in 22, 17 were taken by medical staff and 5 by phlebotomists. Most were taken in hospital but 8 were taken at home and 14 in community clinics (3 of these in general practice surgeries). Eighteen cases related to infants from birth to 3 days of age. These numbers reflect the importance and diversity of midwives' practice. More work needs to be done to emphasise the importance of correct patient identification and sample labelling in the community and antenatal setting to improve patient safety.

Errors in labelling of cord blood samples have arisen when the placenta is removed from the mother's side and sampled elsewhere with inadequate identification. In 1 case the WBIT was then identified when the adult was found to have a group that differed from that recorded at birth 20 years before.

Potential for adverse incidents as a result of WBIT leading to wrongly recorded red cell D-type

There were 51 women whose correct group was D-negative but were grouped as D-positive. These women might have missed anti-D Ig prophylaxis. Wrong D-types in samples from infants of D-negative mothers also have potential for errors with anti-D Ig. There were 28 cases where a mother or baby was recorded as D-negative whose true group was D-positive. Three of these were errors related to mislabelling of mother and cord blood samples.

Case 13a.3: A D-negative mother apparently had a D-negative baby

An antenatal cffDNA test predicted the baby would be D-positive. Cord blood testing showed the infant to be D-negative. Laboratory testing of the paired samples showed that maternal blood was present in both mother and 'cord' sample bottles. Repeat sampling from the baby confirmed the group as D-positive. The reporter noted: 'There have been several WBIT errors from midwives and the transfusion practitioners have been taken off the training programme for face-to-face sessions so there is a reminder about sample labelling to be included in the drills and skills'.

Case 13a.4: A mother identifies that her baby cannot be D-positive

Blood was taken from a neonate for grouping as the mother was known to be D-negative. The baby's sample grouped as B D-positive. The mother was informed of her requirement for anti-D Ig, but she informed the staff that the child's father was also D-negative. The baby was bled again twice and grouped as A D-negative on both occasions.

Learning points

- Wrong blood in tube is a particular risk in midwifery. Steps in positive patient identification and safe sample labelling must be followed whether in a hospital, general practitioner clinic, or in a patient's home
- Methods for blood sampling from pregnant individuals should be reviewed to ensure safe practice at all steps. The standard for identification and labelling should be adhered to, whatever the setting
- If the placenta is moved to another room prior to taking the cord blood sample, ensure it is correctly identified

Conclusion

The investigation of near miss events provides important opportunities for learning. These reviews can identify all contributory factors which can inform which corrective actions can then be taken. The number of near miss WBIT from maternity departments has been highlighted in this year's Annual SHOT Report. The HSIB published a report about a WBIT full blood count sample from a maternity unit where there was no patient harm (HSIB 2019). This illustrated many reasons why these errors can occur ('work as done' may not reflect 'work as imagined' in protocols) and recommended the use of electronic systems for patient identification and blood sample labelling. Additional recommendations for organisations from the HSIB report include human factors training, adequate staffing, provision of appropriate equipment and reduction in distractions.

There is clear evidence that WBIT errors can be reduced by using electronic patient identification systems (Kaufman et al. 2019, Murphy et al. 2019). In the Kaufman study the incidence of WBIT was 1:3046 by manual labelling methods (16 sites, >1.6 million samples) and was much lower at 1:14,606 for 4 sites (>0.5 million samples) using electronic systems ($p < 0.0001$). They also reported that WBIT rates were high among mislabelled (rejected) samples, confirming that rejecting samples with even minor labelling errors helps mitigate the risk of ABO-incompatible transfusions. This is further evidence for the introduction of electronic sample labelling systems in transfusion to increase safety as has been previously recommended by SHOT.

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