13 Near Miss (NM) Reporting n=1420

Author: Vera Rosa

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

ADU	Avoidable, delayed or under/overtransfusion	**SAE**	Serious adverse event
HSE	Handling and storage error	**SOP**	Standard operating procedure
IBCT	Incorrect blood component transfused	**SRNM**	Specific requirements not met
Ig	Immunoglobulin	**UKTLC**	United Kingdom Transfusion Laboratory Collaborative
NM	Near miss		
NPSA	National Patient Safety Agency	**WBIT**	Wrong blood in tube
RBRP	Right blood right patient	**WCT**	Wrong component transfused
RCA	Root cause analysis		

Introduction

Near miss events account for the largest category of cases reported to SHOT in 2023, 1420/3833 (37.0%). This is an increase from the previous two years, 54 more NM cases compared to 2022 (n=1366) and 265 compared to 2021 (n=1155) (Figure 13.1). Near miss events cover all SHOT categories which could have resulted in a SAE if the error had not been identified prior to transfusion or blood product administration. In 2023, in each SHOT category, there was a slight decrease in the number of NM. However, there was an increase of errors where a component was transfused in the equivalent categories.

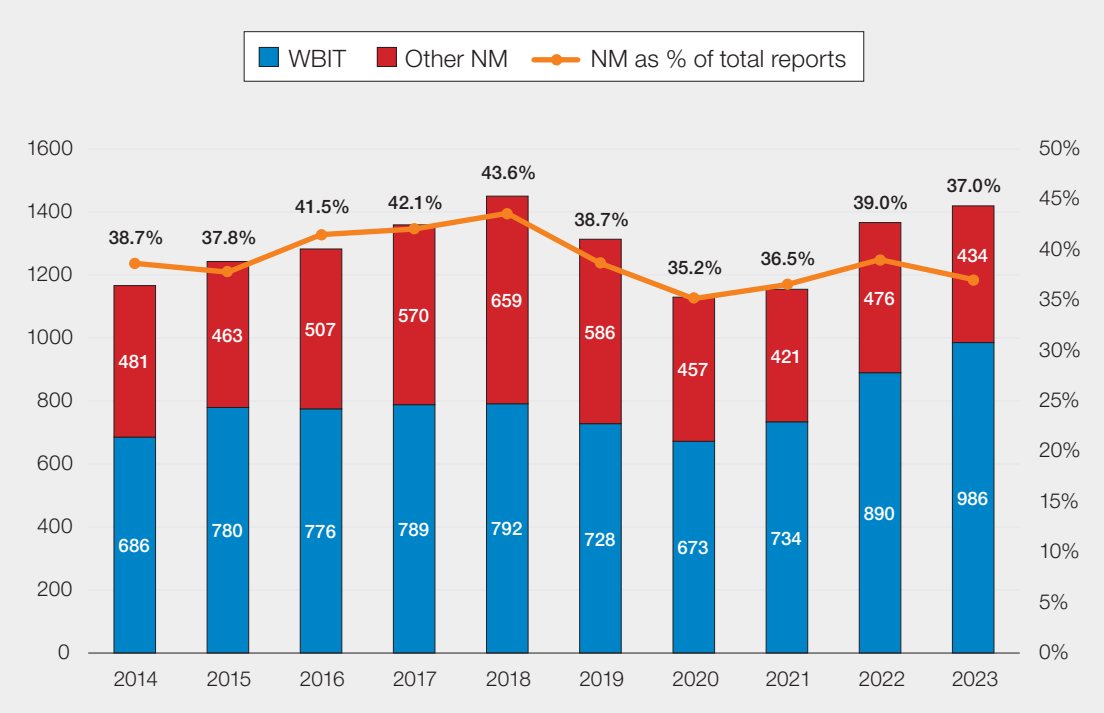


Figure 13.1: A decade of NM and WBIT reports 2014-2023

NM=near miss; WBIT=wrong blood in tube

The largest number of NM in a single category continues to be WBIT events accounting for 986/1420 (69.4%). This is an increase from 2022 (n=890/1366, 65.2%). There was also an increase in NM anti-D Ig errors with 41/1420 (2.9%) cases. In the remaining SHOT categories, there was a slight decrease in the number of NM reports as shown in Table 13.1.

Table 13.1: Comparison of the NM per SHOT category reported to SHOT in 2022 and 2023

SHOT category	Number of cases in 2022	Number of cases in 2023	Variance
WBIT	890	986	+96
HSE	140	138	-2
IBCT-WCT	115	106	-9
RBRP	118	99	-19
IBCT-SRNM	52	46	-6
Anti-D Ig	37	41	+4
ADU	14	4	-10
Total	**1366**	**1420**	**+54**

NM events are often overlooked as they do not cause patient harm. However, the risk of error occurring is present, and recognising, reporting, and investigating NM are vital to identify gaps in processes and risk factors. Understanding the conditions when NM occur allows implementation of corrective and preventative actions to improve patient safety. NM should be investigated effectively similar to how adverse events and reactions are investigated.

In 2023, there were 1027/1420 (72.3%) NM where RCA or other equivalent formal investigations were carried out and 1215/1420 (85.6%) where the NM had been reviewed. Of the NM cases reviewed, in 120/1215 (9.9%) events resulted in changes in transfusion procedures and policies. These were clarification of and designing comprehensive SOP as well as implementation of checklists or additional checking steps. Of the 393 cases where RCA or equivalent was not carried out, 11/393 (2.8%) stated *'not performed as there wasn't patient harm involved'* as the reason. Including additional answers such as '*not required*', '*not appropriate*', or *'not part of Trust policy'* increased this number to 45/393 (11.5%). In 1 case, the incident had not been investigated as the poor practice was accepted to be the norm and as such, an investigation was deemed as not necessary.

SHOT has been promoting and encouraging the learning from NM which are considered as 'free lessons', giving the opportunity to learn and share the learning without patient harm. The learning from NM should not be under-valued but acknowledged as a preventative warning of risks for patient harm. Case 13.1 illustrates how investigating a NM event supported improvements in the transfusion electronic system.

Case 13.1: Near miss helps to identify safety issues with requesting electronic system

A unit of red cells was collected by a porter using the porter electronic system. The unit collected was for a different patient. Both patients had the same surname, however no other patient details matched the blood request. When the blood component arrived at the ward and the details were checked, the error was identified and reported to the laboratory. The red cell unit was returned to the laboratory.

Investigation of this incident identified safety concerns with the porter's electronic system which was found to be unfit for purpose. The request using the electronic system could be sent without patient-specific information from the ward which led to the error. Poor compliance and different practices between sites within the organisation were also identified. The case was reviewed by the hospital transfusion team, hospital transfusion committee and facilities management forum. Safety issues were cascaded via huddles, strategic clinical networks were created, and a scoping exercise was undertaken to establish required improvements. A new SOP and flow chart was developed outlining details of the new processes to be followed. A communications package was developed to inform all parties of the new system in place. Porters were advised not to collect any blood components without complete patient information. A new escalation system is to be implemented to deal with these issues as well as an audit schedule to highlight ongoing issues and address them at ward level.

It is encouraging to see how meticulously this NM event was investigated and improvement actions implemented. The team's commitment to excellence and collaboration resulted in valuable lessons learned contributing to continuous improvement efforts.

Learning point

- Investigation of NM helps identify causes of errors and contributory factors before patient harm occurs. A thorough and complete investigation can lead to changes in processes, systems and policies to improve transfusion safety

Discussion of near miss errors per SHOT category

NM cases have been reviewed and discussed in each relevant chapter for this Annual SHOT Report and Table 13.2 shows the chapter that include NM events according to the current SHOT definitions.

Table 13.2: Categorisation of all NM according to SHOT definitions in 2023 (n=1420)

Category	Discussed in chapter	Number of reports	Percentage of cases
WBIT	Chapter 13a	986	69.4%
HSE	Chapter 11	138	9.7%
IBCT-WCT	Chapter 10	106	7.5%
RBRP	Chapter 14	99	7.0%
IBCT-SRNM	Chapter 10	46	3.2%
Anti-D Ig	Chapter 9	41	2.9%
ADU	Chapter 12	4	0.3%
Total		**1420**	**100%**

Conclusion

It is important to recognise that learning from NM is as useful as learning from incidents without the psychological and physical impact of an incident (Woodier, et al., 2023; Jung, et al., 2021). The lessons learnt from NM can lead to improvements within healthcare organisations, increasing patient safety by allowing sharing of the lessons learnt as well as the actions implemented to mitigate the risks (NPSA, 2004). Each organisation should facilitate and encourage a reporting culture, where staff feel psychologically safe to report these incidents without fear of blame or negative consequences (Woodier, et al., 2023; NPSA, 2004; Caspi, et al., 2023; Jung, et al., 2021). This involves a proactive approach of investigating incidents focused on systems rather than on individuals (NPSA, 2004; Woodier, et al., 2023). The results from the 2023 SHOT and UKTLC transfusion laboratory culture survey demonstrated that laboratory staff are still being a target of incivility and disciplinary action upon raising safety concerns or following incident reporting (SHOT, 2024). Recommendations have been published within the report to help organisations create a psychological safety culture for staff. Organisations must implement and embed investigation of NM events as part of their policies and facilitate resources for staff to understand the potential for improving patient safety when investigating NM.

Recommended resources

Wrong Blood In Tube (WBIT) investigation template
https://www.shotuk.org/resources/current-resources/

SHOT Bite No. 17: Learning from Near Misses (NM)
SHOT Bite No. 23: Civility in Healthcare
SHOT Bite No. 24: Speaking up for safety
SHOT Bite No. 25: Safety-I and Safety-II
https://www.shotuk.org/resources/current-resources/shot-bites/

References

Caspi, H., Perlman, Y. & Westreich, S., 2023. Managing near-miss reporting in hospitals: The dynamics between staff members' willingness to report and management's handling of near-miss events. *Safety Science,* 164(4), p. 106147. doi: https://doi.org/10.1016/j.ssci.2023.106147.

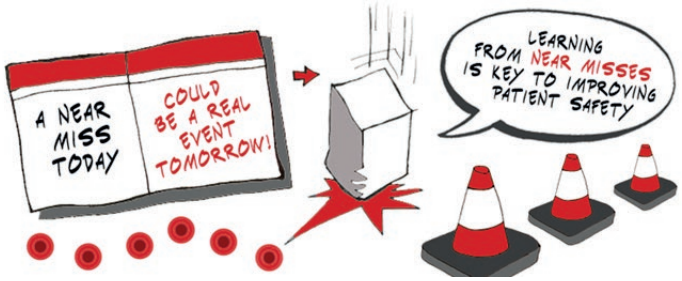
Jung, O. S. et al., 2021. Resilience vs. Vulnerability: Psychological Safety and Reporting of Near Misses with Varying Proximity to Harm in Radiation Oncology. *The Joint Comission Journal on Quality and Patient Safety,* 47(1), pp. 15-22. https://doi.org/10.1016/j.jcjq.2020.09.005.

National Patient Safety Agency (NPSA), 2004. *Seven steps to patient safety - The full reference guide.* [Online] Available at: https://www.publichealth.hscni.net/sites/default/files/directorates/files/Seven%20steps%20to%20safety.pdf (Accessed 12 February 2024).

Serious Hazards of Transfusion (SHOT), 2024 *SHOT Surveys.* [Online] Available at: https://www.shotuk.org/resources/current-resources/shot-surveys/ (Accessed 26 April 2024).

Woodier, N., Burnett, C. & Moppett, I., 2023. The Value of Learning From Near Misses to Improve Patient Safety: A Scoping Review. *Journal of Patient Safety,* 19(1), pp. 42-47. doi: https://doi.org/10.1097/pts.0000000000001078.

Woodier, N., Burnett, C., Sampson, P. & Moppett, I., 2023. Patient safety near misses – Still missing opportunites to learn. *Journal of Patient Safety and Risk Management,* 0(0), pp. 1-7. doi: https://doi.org/10.1177/25160435231220430.



SHOT
Serious Hazards of Transfusion

13a Near Miss - Wrong Blood in Tube (WBIT) n=986

Authors: April Molloy, Paula Bolton-Maggs, Vera Rosa and Simon Carter-Graham

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.

Abbreviations used in this chapter

cffDNA	Cell-free fetal deoxyribonucleic acid	**PPID**	Positive patient identification
HSSIB	Health Services Safety Investigations Body	**WBIT**	Wrong blood in tube
ID	Identification	**Wi-Fi**	Wireless fidelity

Key SHOT messages

- Correct patient identification remains a key safety measure and patients should be encouraged to participate in critical identification steps
- Identification bands are an essential safety precaution. These must be applied carefully and correctly
- The labelling of neonatal samples taken from the umbilical cord is prone to error when the sample is taken from the placenta away from the mother
- A high proportion of WBIT continue to be reported from maternity areas, this could be due to multiple factors which need to be investigated locally and addressed to improve patient safety

Recommendations

- Training about patient identification bands should be reviewed and their importance emphasised

Action: Education teams, hospital transfusion teams and maternity leads

- In line with the HSSIB recommendations, local organisations should review and identify system-wide requirements for scanning in positive patient identification since the use of scanning technology can help to reduce misidentification incidents

Action: Hospital chief executives and medical directors

Introduction

For the third consecutive year, there has been an increase in WBIT near miss incident reports, 986 cases in 2023 (890 cases in 2022, 734 cases in 2021) see Figure 13.1 in Chapter 13, Near Miss (NM) Reporting. The majority were routine samples, 810/986 (82.2%) and 78/986 (7.9%) were classed as urgent or emergency. Cases from maternity departments account for 388/986 (39.4%) reports. WBIT continues to represent the largest proportion of near miss events, 986/1420 (69.4%).

What errors lead to WBIT?

WBIT errors continue to result from the same two leading causes: failure to identify the patient correctly at phlebotomy, 434/986 (44.0%) and labelling the blood samples away from the patient, 285/986 (28.9%). These two errors continue to be reported every year. Of concern, both errors occurred together in 170/719 (23.6%) of the reports.

Where reported, routine group and screen samples, 856/961 (89.1%) were most commonly implicated. The overall number for crossmatch samples was 105/961 (10.9%) with a small number, 21/105 (20.0%), required for an emergency transfusion.

Patient ID bands, when used accurately, should help to prevent errors. Ten incidents were reported with ID band errors: failure to apply ID bands (3), wrong band attached to patient (2), patient not correctly identified when band applied (3), patient wrongly identified at admission (1) and 1 case where case records had been merged with another patient of the same name but different date of birth and ID number. Care must be taken to avoid patient misidentification. Forty-four incidents were reported involving patients with identical or similar names. PPID using first name, surname, date of birth and a unique patient identification number is key to safe practice. Case 13a.1 illustrates the importance of PPID. Patient ID bands are crucial to prevent errors in healthcare settings by ensuring accurate patient identification during procedures, treatments including transfusions and administration of medication.

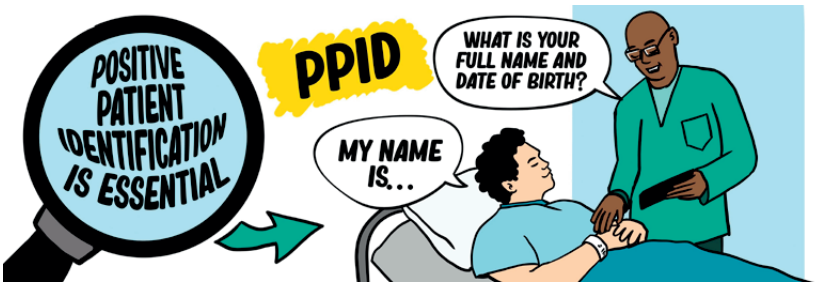
Venepuncture requires concentration and attention to detail. In 1 case, the doctor was distressed by a toxic safety culture in the ward with bullying and interruption, which resulted in a WBIT. Civility in healthcare has been shown to have an impact on patient safety. Incivility contributes to an increased risk of incidents and negative consequences in staff wellbeing and psychological safety (Civility Saves Lives, 2022).

Case 13a.1: Patient care documented on the wrong patient record

A patient queried why they were being called by another name. The patient's pregnancy records had been uploaded incorrectly to another non-pregnant patient's notes. Previous clinical notes and booking in bloods were undertaken under incorrect patient details/records. The patient had not been positively identified at the previous appointment.

Learning points

- Care must be taken to ensure the correct ID band is applied to the right patient
- PPID, sample taking, and labelling should always be a single, continuous process carried out beside the patient
- Involving the patient in their own care by encouraging them to confirm their identity, where possible, and confirming their details on the sample will help reduce errors



SHOT
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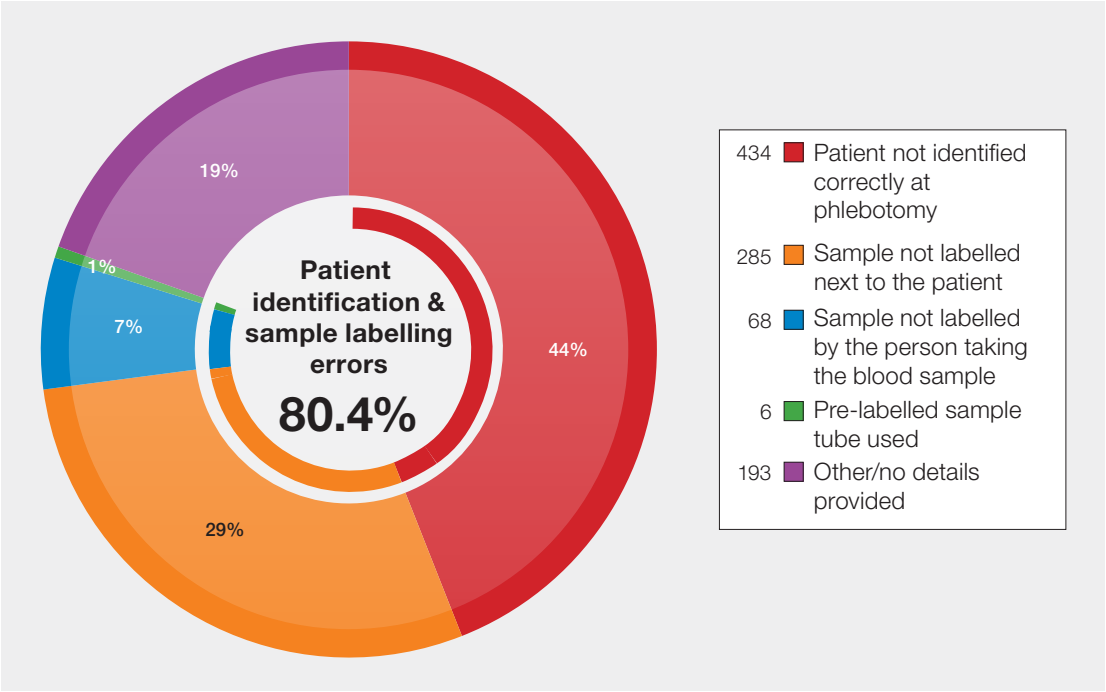
Figure 13a.1: Primary errors leading to WBIT in 2023 (n=986)



Detecting the primary error can be challenging in historical WBIT i.e., when the initial error occurred some years ago.

The majority of errors were detected by laboratory staff, 830/986 (84.2%), while clinical teams identified the incident in 120/986 (12.2%) cases. In the remaining 36 cases the error was identified by other healthcare professionals, or the information was not provided.

Figure 13a.2: Point in the process where the error was detected in WBIT reported in 2023 (n=986)

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Serious Hazards of Transfusion

Case 13a.2 highlights the importance of PPID.

Case 13a.2: Patient not adequately identified prior to phlebotomy

The hospital transfusion laboratory received two samples for a patient with no previous blood transfusion history. The samples and the request forms were correctly labelled and processed. However, ward staff later called the laboratory to say the samples had been taken from the wrong patient. The doctor realised the mistake when the nurse was placing the wristband on the patient. The patient had a similar name and date of birth as the intended patient and was without a wristband at the time of sample collection.

This incident highlights the importance of PPID at phlebotomy; in this instance, PPID did not occur on two occasions (two samples were sent), or two samples were taken during the same phlebotomy.

Learning point

- Sending two samples from the same venepuncture could prove to be fatal if the wrong patient is bled or the correct patient bled but another patient's details are used. The samples taken from the same venepuncture will group identically and could lead to a potential ABO-incompatible transfusion

ABO-incompatibility

In 536 cases, blood group data was provided. If these WBIT had not been detected, 256/536 (47.8%) patients could have received ABO-incompatible blood components with a risk of serious harm or death (Table 13a.1).

		Group of the blood component that might have been transfused					
		A	B	AB	O	Compatible	Incompatible
Patient blood group	A	44	30	8	119	163	38
	B	22	6	6	38	44	28
	AB	6	2	1	12	21	0
	O	131	44	15	52	52	190
	Totals	**203**	**82**	**30**	**221**	**280**	**256**

Case 13a.3 illustrates the importance of undertaking a group-check sample correctly to avoid potential ABOi transfusions.

Case 13a.3: Failure to accurately identify patients leads to NM-WBIT

A doctor planned to take two group and screen samples from a patient that did not have a blood group history recorded in the laboratory. The samples were taken 10 minutes apart, but one was taken from the correct patient and the other was inadvertently taken from a different patient. The request forms were completed prior to taking the samples and the doctor did not check the patients' identities or their ID bands. Samples were then labelled away from the patient's side.

Testing revealed that the first sample grouped as O D-positive, and the second taken 10 minutes later grouped as A D-positive. Two repeat samples had to be obtained from the right patient to ascertain their correct blood group. There was a lack of medical staff on duty and the doctor involved was the only doctor on duty at the time, with multiple competing tasks to complete. There were no delays to transfusion, or any other adverse outcome reported as a result of this WBIT.

It is crucial to recognise that WBIT errors, where the blood in the tube is not that of the patient identified on the label, may lead to catastrophic outcomes, such as death from ABO-incompatible red cell transfusion. Transfusion is a multi-step, multidisciplinary process requiring diligence, accurate ID checks and accurate documentation. Errors continue to occur despite multiple interventions (education, training, competency testing, guidelines, and use of IT systems). Although this is focusing on WBIT in relation to blood transfusion, all pathology samples should be identified and linked to the correct patient with the same degree of care. Improving staff awareness and consideration of human factors is essential.

Sampling

Consistent with previous years, midwives, nurses, and doctors, constitute the largest groups of staff involved in collecting WBIT transfusion samples as outlined in Figure 13a.3.

Figure 13a.3: Numbers of different healthcare professionals who took blood samples resulting in WBIT in 2023 (n=986)

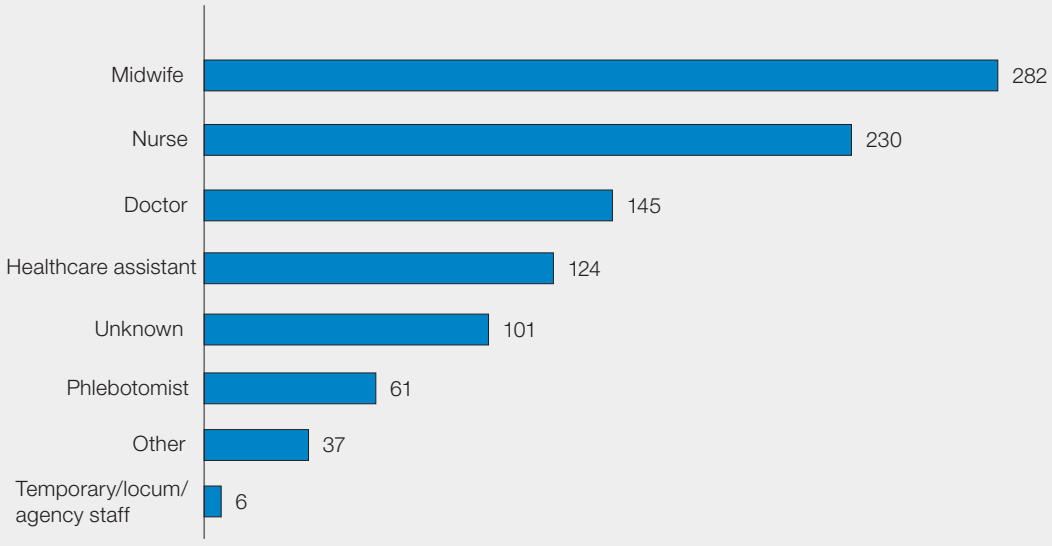

Table 13a.2 shows the primary errors in the different healthcare professional groups. It is notable that the most common error for phlebotomists (74.5%) was failure to correctly identify the patient.

Primary error	Midwife	Nurse	Doctor	Healthcare assistant	Phlebotomist
Patient not identified correctly at phlebotomy	118 (51.8%)	110 (53.4%)	59 (45.4%)	74 (65.5%)	38 (74.5%)
Sample not labelled next to the patient	88 (38.6%)	84 (40.8%)	55 (42.3%)	26 (23.0%)	10 (19.6%)
Sample not labelled by person taking the blood	19 (8.3%)	11 (5.3%)	16 (12.3%)	11 (9.7%)	3 (5.9%)
Pre-labelled sample tube used	3 (1.3%)	1 (0.5%)	0	2 (1.8%)	0
Total	**228**	**206**	**130**	**113**	**51**

Table 13a.2 Primary errors associated with WBIT in different professional groups in 2023

Maternity cases n=388

Maternity departments and antenatal clinics appear to be high-risk areas for transfusion errors. Of WBIT cases reported in 2023, 388/986 (39.4%) occurred in obstetrics/maternity. These incidents included 61 errors involving neonates:

- Mother and cord mix ups (n=52)
- Confusion in sampling twins (n=9)

Serial Annual SHOT Reports continue to highlight the need for improved processes for labelling of cord blood samples and the risk of WBIT when labelling the infant's umbilical cord sample after the placenta had been moved away from the patient's side, as reflected in Case 13a.4.

Case 13a.4: A baby's blood group not as predicted from cffDNA result

A mother noted that her baby's blood group result (D-positive) did not correspond with the cffDNA result (predicted D-negative). The placenta had been discarded into the general placenta bucket with others, placed in individual plastic bags but unlabelled. No cord bloods were taken. A second midwife retrieved what she thought was the correct placenta from the bin, took a cord sample and sent it to the hospital transfusion laboratory. Repeat bloods from the baby confirmed the sample from the retrieved placenta was a WBIT.

Case 13a.5: Cord sampling mix-up

Cord bloods were taken in the labour ward from newborn twins. Twin 1 grouped as A D-negative and Twin 2 as O D-negative. Subsequent samples were taken for Twin 1, which grouped as O D-negative. Repeat bloods confirmed WBIT from cord sampling at delivery. The staff member taking samples at delivery had not undertaken transfusion training and was unaware that they were not to use pre-labelled tubes.

Learning points

- Particular care must be taken in labelling cord blood samples. This should be done before the placenta is removed from the mother's side
- Samples from twins must be fully identified; they will have the same date of birth and surname, but the different ID numbers should be included

Human factors

Review of human factors questions showed that there was a mismatch between staffing levels and workload in 353/986 (132 did not answer) and communication issues in 186 (134 did not answer). Problems in both these areas contributed to 100 WBIT cases.

Conclusion

Misidentification of patients has been highlighted by a National Learning Report (HSSIB, 2024). PPID is seen as a routine task, but is common, complex, and critical for patient safety. The report highlights the need to improve patient safety by seeking to better understand and address the risks associated with PPID through a safety management system approach. SHOT reporting shows that this is a continuing problem in blood transfusion with significant risk to patient safety. The increasing trend and number of multiple errors is concerning. Although the HSSIB report recommends further development of scanning technology, this must be set up properly with adequate staffing to support it. In 1 case, a WBIT occurred when labels were printed for multiple patients away from the bedside due to an inadequate number of printers and issues with Wi-Fi.

Regardless of whether patient identification is manual or electronic, it is imperative that this is correctly determined. This is the simplest way of involving the patients in their own care and can prevent adverse clinical outcomes. Appropriate minimum identification criteria should be established and adhered to. WBIT events should be monitored, investigated using human factors principles and appropriate mitigating actions implemented.

Recommended resources

Webinar on accurate and complete patient identification for safe transfusion in adults
Webinar on accurate and complete patient identification for safe transfusion in paediatrics
https://www.shotuk.org/resources/current-resources/webinars/

SHOT Bite No. 17: Learning from Near Misses (NM)
SHOT Bite No. 23: Civility in Healthcare
https://www.shotuk.org/resources/current-resources/shot-bites/

Wrong Blood In Tube (WBIT) Investigation template
https://www.shotuk.org/resources/current-resources/

Civility saves lives
https://www.civilitysaveslives.com/

National Comparative Audit – 2022 Audit of Blood Sample Collection and Labelling
https://hospital.blood.co.uk/audits/national-comparative-audit/

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Civility Saves Lives, 2022. *Civility Saves Lives.* [Online] Available at: https://www.civilitysaveslives.com/ (Accessed 29 February 2024).

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