

This overview page covers all NM cases – including 992 wrong blood in tube (WBIT), and 378 reports in other NM categories.

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Key findings

- NM events continue to be the largest category reported to SHOT despite a slight decrease from 2024. Clinical NM events, including WBIT, accounted for 1213/1370 (88.5%) of NM reports.
- A notable reduction (>45%) of NM events in the right blood right patient (RBRP) and anti-D immunoglobulin (Ig) administration errors categories.
- Component selection and labelling errors were the most common reasons for laboratory NM events.
- Clerical errors at emergency department (ED) registration and corridor care resulted in WBIT events.
- Mix-ups between maternal and cord samples continue to be reported year-on-year.



Gaps identified

- WBIT is most commonly attributed to patients not being identified at phlebotomy and samples being labelled away from the patients' side.
- Patients identified by bedspace or patients with similar names at the time of the event contributed to WBIT reported from wards.
- Key contributory factors included communication failures, gaps in staff knowledge or skills and workload–staffing mismatch.



Good practice

- Implementation of the confirmatory sample policy allowed detection of WBIT including events that occurred years earlier.
- Almost half of NM events were detected during pre-administration checks.
- A human-factors approach was used in more than 80% of incident investigations, marking an increase compared with 2024.
- Clinical teams taking prompt action once the error was identified including informing the transfusion laboratory.
- Collaboration between different laboratory specialities when discrepant results were detected leading to identification of WBIT.



Next steps

- A structured system for reporting, investigating, and analysing NM events helps identify causes of errors and contributory factors before patient harm occurs.
- NM events offer valuable insights that can inform improvements to processes, systems, and policies, ultimately strengthening transfusion safety.
- Ensure adherence to policies and processes for patient identification and sample labelling.
- Ensure that all staff understand the risks associated with incorrect patient identification.



For all abbreviations and references used in this chapter please see the [Glossary](#) and [Reference list](#) at the end of the full Annual SHOT Report. For further information please see the supplementary information on the SHOT website (<https://www.shotuk.org/shot-reports/annual-shot-report-2025/>).

Definition:

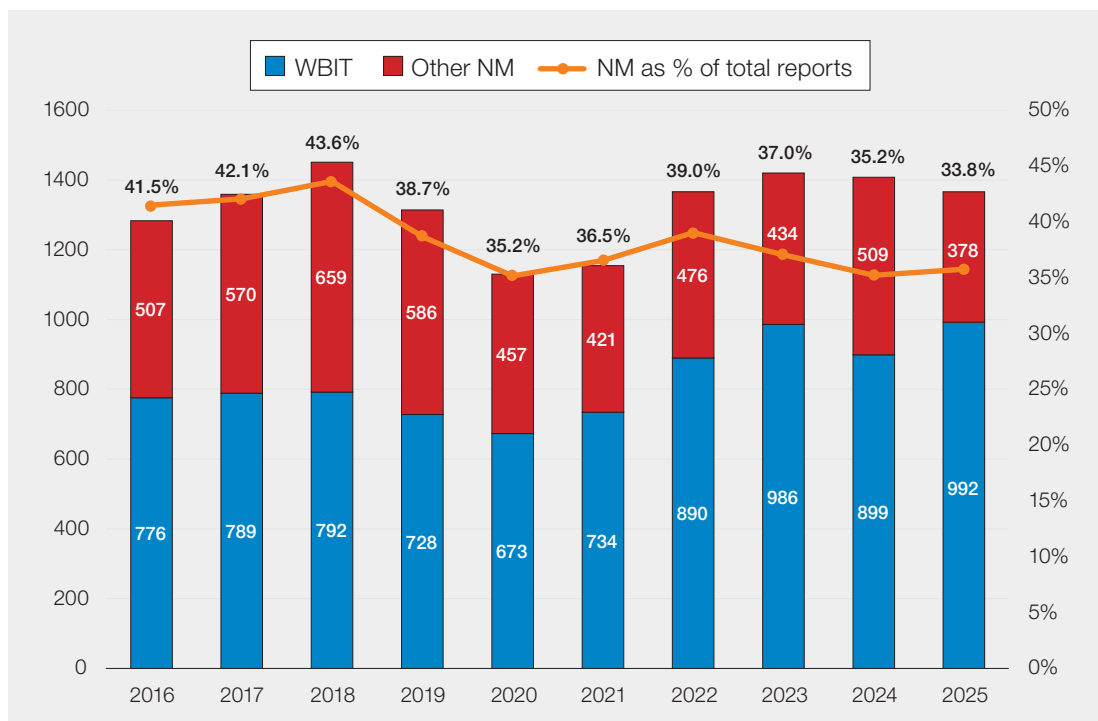
A 'near miss' event refers to any error which if undetected, could result in the determination of a wrong blood group or transfusion of an incorrect component, but was recognised before the transfusion took place.

Introduction

As in previous years, NM events in 2025 accounted for the largest overall category of cases reported to SHOT, 1370/4046 (33.9%). Although there was a small decrease in the total number of NM events compared to 2024 (n=1408), this was still the second highest number of NM events reported since 2019 (Figure 16.1).

The SHOT Transfusion Safety Standards require organisations to report, record, trend and learn from transfusion-related near misses, using this intelligence to drive system-level improvements, strengthen safety controls and prevent patient harm within a just and learning safety culture.

Figure 16.1: A decade of NM (other) and WBIT reports (2016-2025)



NM=near miss; WBIT=wrong blood in tube

The largest category of NM analysed by SHOT in 2025 was WBIT (n=992), which increased from 899 in 2024 (Figure 16.1). WBIT can lead to ABO-incompatible (ABOi) transfusions which can be fatal and are covered in a separate chapter (Chapter 16a, Near Miss – Wrong Blood in Tube (WBIT)). Conversely, NM events in certain other categories showed a decrease of over 45% compared to 2024; RBRP, 125 in 2024 to 65 in 2025 (decrease of 48.0%); anti-D Ig administration errors, 40 in 2024 to 19 in 2025 (decrease of 52.5%).

Table 16.1: Number of NM by SHOT category reported in 2025

SHOT category	Number of cases in 2025	Discussed in chapter
Wrong blood in tube (WBIT)	992	Chapter 16a
Handling and storage errors (HSE)	129	Chapter 11
Incorrect blood component transfused-wrong component transfused (IBCT-WCT)	105	Chapter 10
Right blood right patient (RBRP)	65	Chapter 17
IBCT-specific requirements not met (SRNM)	52	Chapter 10
Anti-D immunoglobulin (Ig) administration errors	19	Chapter 9
Avoidable transfusion	6	Chapter 13
Delayed transfusion	1	Chapter 12
Incidents related to prothrombin complex concentrates (PCC)	1	Chapter 15
Total	1370	

NM events are discussed in each relevant chapter of the 2025 Annual SHOT Report (Table 16.1).

Most common NM events in laboratory and clinical settings (excluding WBIT)

In 2025, a total of 157 NM events were attributed to laboratory errors and 221 to clinical errors. The most frequently reported laboratory error categories were RBRP, 44/157 (28.0%), IBCT-SRNM, 41/157 (26.1%), and IBCT-WCT, 37/157 (23.6%). Within RBRP, the predominant errors were labelling errors, 32/44 (72.7%) and sample receipt and registration errors, 10/44 (22.7%). For IBCT-SRNM, the most common error involved failure to provide irradiated blood components when required, 22/41 (53.7%). In IBCT-WCT, primary errors were evenly split between provision of an incorrect blood group, 17/37 (46.0%) and issuing a blood component for the wrong patient, 17/37 (46.0%). ABOi transfusions could have taken place in 3 of these cases.

Clinical errors were most reported under HSE, 105/221 (47.5%) and IBCT-WCT, 68/221 (30.8%). The majority of HSE errors were related to cold chain failures, 99/105 (94.3%). IBCT-WCT were mostly due to errors during blood component collection, or prior to administration to the wrong patient, 67/68 (98.5%). Detection of these errors prevented 17 ABOi transfusions.

Case 16.1: ABOi transfusion prevented by pre-administration checks

A porter collected a unit of red cells from the blood issue refrigerator for patient 1 (group A D-positive) who had the same first name and surname as patient 2 (group B D-negative) without performing robust safety checks. The porter was distracted by a colleague, and there was also a backlog of tasks due to a long-running major haemorrhage call on the previous shift. The unit of red cells was received in the clinical area and when the nursing staff were completing their pre-administration checks at the patient's bedside, they noticed that the date of birth and unique patient identification number on the blood component did not match the details on the patient identification band. They contacted the blood transfusion laboratory and arranged for the unit of red cells to be returned.

This case highlights the importance of completing the final pre-transfusion checks at the patient's side which prevented the potentially serious consequences of receiving an ABOi blood component.

Contributory factors in near miss errors

A total of 309/378 (81.7%) non-WBIT reports used a human-factors-based approach during investigation. Communication failures were identified as contributory factors in 132 cases. In 122 NM events, a mismatch between workload and staffing levels at the time of the event was reported, while 120 cases cited gaps in staff knowledge or skills as significant contributing factors.

Conclusion

NM events remain the most frequently reported category to SHOT, with clinical WBIT continuing to feature prominently. It is important to recognise and monitor trends in NM events. While some reduction in NM RBRP and NM anti-D Ig events have been observed, this must translate into a genuine reduction in harm events. NM data should be used to drive optimal learning and targeted improvements in order to strengthen systems and enhance overall safety. Key contributory factors for the reported NM included deficiencies in communication, gaps in staff knowledge, and pressures related to staffing levels. The detection of errors during pre-administration checks highlights the effectiveness of existing safety barriers, the findings reinforce the need for stronger processes, enhanced staff training, and greater system resilience.

Recommended resources

[SHOT Transfusion Safety Standards](#)

[SHOT Bite No. 17: Learning from Near Misses \(NM\)](#)

[Near Miss \(NM\) Cumulative Data page](#)



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

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.

Introduction

WBIT reports continue to represent the largest proportion of near miss (NM) events reported to SHOT, 992/1370 (72.4%). This is the highest number of WBIT reported to SHOT in a year. In 932/992 (94.0%) cases the process for sample labelling was provided; in 804/932 (86.3%) the sample was handwritten and in 128/932 (13.7%) the sample was labelled using an electronic system.

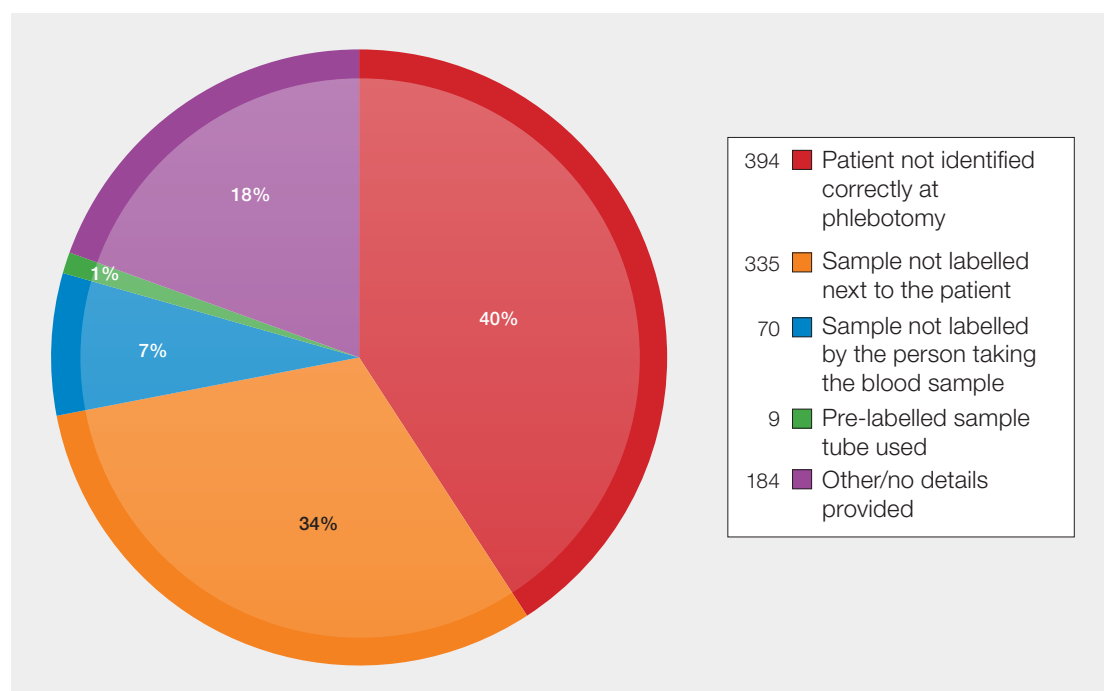
Causes of error

As in previous years, the two main causes for WBIT continue to be

- Failure to identify the patient correctly at phlebotomy, 394/992 (39.7%)
- Labelling the sample away from the patient, 335/992 (33.8%) (Figure 16a.1)

In 219/729 (30.0%) cases both errors occurred together with or without additional causes contributing to the same event.

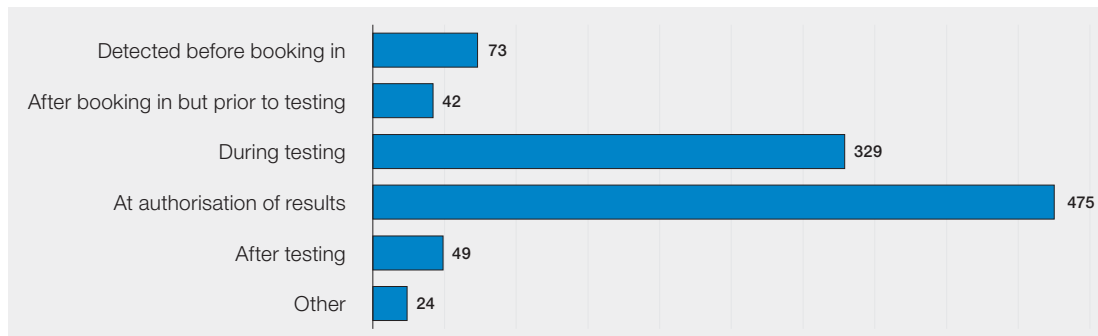
Figure 16a.1: Primary causes of WBIT in 2025 (n=992)



Point of detection

In 165/992 (16.6%) cases the clinical team recognised the error and contacted the laboratory. In 4 cases, haematology and biochemistry were notified, but not blood transfusion. Recognition and communication occurred at various sample process stages. In 58/992 (5.9%), the historical group and screen samples were identified as WBIT; these were often detected by the confirmatory sample requirement highlighting its importance for transfusion safety.

Figure 16a.2: Point in the process where the error was detected in WBIT reported in 2025 (n=992)



The WBIT identified after testing being completed (49/992) were often detected when clinicians were reviewing the patient results. These cases were not detected by the laboratory because either the blood group of the WBIT was the same as the intended patient or the incorrectly taken sample was the first record of the patient in the laboratory.

Case 16a.1: Discrepant full blood count results identify a WBIT

Samples were taken from a patient for haematology, biochemistry and blood transfusion laboratories. Upon testing, the full blood count (FBC) showed pancytopenia which was discrepant with the patient's previous results. A repeat FBC confirmed that the first sample was a WBIT. Biochemistry and transfusion samples taken at the same time were rejected. Following investigation, it was identified that at the time of the event there was an unusually high number of staff on annual leave and sick leave and many requests for phlebotomy. In this case the request form had been labelled with the incorrect patient's bed number which resulted in the incorrect patient being bled.

Case 16a.1 highlights the importance of collaboration and timely communication between different pathology disciplines when discrepant results are identified in one area. It also shows the risks of identifying patients only by bedspace rather than full patient details.

ABO-incompatibility (ABOi)

Blood groups of the intended patient and of the WBIT sample were provided in 719/992 (72.5%) reports. Table 16a.1 shows the patient blood groups, and the blood group of the red cell units that would have been issued/administered based on the WBIT result. In 336/719 (46.7%) the intended patient could have received an ABOi red cell transfusion with potential risk for serious harm or death.

Table 16a.1: Potential for ABOi red cell transfusion as a result of WBIT in 2025

Patient blood group	Group of the blood component that might have been transfused				Total ABO-compatible	Total ABO-incompatible
	Component group A	Component group AB	Component group B	Component group O		
Patient group A	53	21	54	156	209	75
Patient group AB	11	1	10	11	33	0
Patient group B	44	10	9	55	64	54
Patient group O	144	7	56	77	77	207
Totals	252	39	129	299	383	336

Errors in non-maternity cases n=593

Non-maternity cases represented more than half of the WBIT, 593/992 (59.8%). These cases involved 490 routine samples and 53 urgent requests with potential to cause delays in transfusion, suboptimal care and/or avoidable use of emergency blood group O units. It is notable that 168/593 (28.3%) of cases were from the emergency department (ED).

Case 16a.2: Multiple staff involved in sample taking and labelling to avoid delays

A group and screen (G&S) sample was taken by a resident doctor and handed over to a locum doctor for labelling. The locum doctor did not have access to the printer, so the sample was passed to the nurse. The nurse felt reluctant to label a sample that they had not taken but did not feel confident to challenge the request. Additionally, the nurse was aware that delays in sending the sample might lead to surgery cancellation. The WBIT was identified in the laboratory when the blood group did not match the patient's previous record.

To minimise the risk of transfusion errors, the same individual who takes the blood sample should label it immediately at the patient's side. The sampling and labelling process must not be interrupted, as distractions or handovers increase the risk of misidentification and serious patient safety incidents (Robinson, et al., 2018).

Errors in maternity cases n=399

In 2025, 399/992 (40.2%) reports were related to maternity, 339 were routine cases while 33 were emergency. More than 80% of the urgent samples (27/33) were from obstetrics. The two most common locations were obstetrics, 214/399 (53.6%) and antenatal clinics, 100/399 (25.1%).

Errors reported with maternal and neonatal samples included:

- Mother and cord mix-ups (n=48); 2 identified in a retrospective audit and 1 through high-throughput non-invasive prenatal testing for fetal *RHD* genotype (cell-free fetal deoxyribonucleic acid (cffDNA)) discrepancy
- Confusion in sampling twins including cord samples (n=5)
- Cord samples taken from the wrong placenta (n=4); 1 historical WBIT from 2009
- Cord samples mislabelled (n=2); 1 swap between mother and baby (not cord) samples
- Neonatal samples taken from the wrong baby (n=3)

Case 16a.3: Assumed clerical error and incorrect patient record amended

A midwife registered a pregnant woman new to the healthcare organisation under a hospital number belonging to a different patient. Both individuals had the same forename, surname and year of birth. When the midwife confirmed the details with the woman and identified the discrepant date of birth, the midwife assumed that a clerical error had been made at registration and amended the details and previous records on the system. When the G&S sample was tested in the laboratory the WBIT was identified as the blood group did not match previous record. Both women were contacted, and the error rectified.



Human factors and systemic gaps identified in the 2025 WBIT reports

Table 16a.2 shows the most commonly reported human factors to SHOT via the Human Factors Investigation Tool (HFIT), including local working conditions, environment, workload, organisational and staffing levels, communication, and situational factors.

Table 16a.2: Human factors that contributed to the WBIT cases in 2025

	ED	Wards*	Pre-assess & OPD	Obstetrics**	ANC	Total
Busy environment	69	59	22	61	22	233
Inadequate staff levels	18	29	12	22	12	93
Distracting environment	14	32	8	15	11	80
High acuity	21	16	2	21	1	61
Patients with similar name	6	24	9	9	10	58
Language barrier or communication gaps	16	8	0	7	3	34
Registration error	14	4	2	4	8	32
Staff fatigue	4	13	2	10	2	31
Patient identified by bedspace	1	14	0	2	0	17
No identification band in situ	6	5	N/A	9	N/A	9
Corridor care	9	0	0	0	0	9
Poor lighting	1	5	0	1	0	7
Noisy environment	1	2	1	1	0	5

ANC=antenatal clinic; OPD=outpatient department; Pre-asses=pre-assessment clinic

*Wards also include cases from high dependency and intensive care units

**Obstetrics also include cases from neonatal and paediatric settings

Common to all settings

A busy environment during blood sampling was the most common contributory factor across all settings. Distractions, high acuity, and inadequate staffing levels increased pressure on staff. Staff fatigue was also noted. Staff fatigue is commonly a hidden safety risk that should be escalated and recognised. The impact of fatigue on safety has been highlighted by the Health Services Safety Investigation Body (HSSIB, 2025b).

Emergency department

In 14 cases, while the ED was documented as the location of the error, investigation showed that the errors occurred earlier in the process, reinforcing the importance of analysing whole-system failures rather than focusing on the point of detection. In some of these, the incorrect patient identification occurred before the patient arrived at hospital (e.g., in the ambulance). In 9 cases patients were receiving care in corridors. These reports reflect the risks for patient safety highlighted by different organisations (RCEM, 2025; RCP, 2025; Iacobucci, 2026).

Learning points

- Accurate and complete patient identification is essential: patients must not be identified by bedspace.
- Following identification, labelling the sample next to the patient must be performed as one continuous uninterrupted process.
- Staff fatigue must be recognised, escalated and managed appropriately by the organisation to ensure staff and patient safety.
- Corridor care imposes a safety risk for patients leading to workarounds and suboptimal care.



Conclusion

Failure to identify patients at phlebotomy and labelling samples away from the patient remain the most common and often co-occurring errors. These are frequently linked to distraction, high patient acuity, busy working environments, and staff fatigue. To reduce risk, samples should be taken and labelled in one uninterrupted process at the patient's side following positive patient identification.



Recommended resources

[Meet the experts webinar – Near Miss Reporting & Wrong Blood in Tube \(WBIT\)](#)

[Pre-transfusion Blood Sampling Process](#)

[Chapter 15a – Near Miss – Wrong Blood in Tube \(WBIT\) Supplementary Data 2024](#)