

# Wrong blood in tube (WBIT) - what can we do to reduce errors?

Serious Transfusion Incident Reporting (STIR): Bulletin No. 10

**OFFICIAL**

## Introduction

Wrong blood in tube (WBIT) continues to be the procedural error most frequently reported to Blood Matters Serious Transfusion Incident Reporting (STIR) system.

A WBIT event can be defined as either:

- blood that is taken from the wrong patient and labelled with the intended patient's details; or
- blood that is taken from the intended patient but labelled with another patient's details.

WBITs are serious as they can:

- go undetected, resulting in an incompatible blood transfusion, which can be fatal
- have serious consequences for more than one patient
- impact other blood specimens collected with potential for incorrect results, leading to lack of, inappropriate or unnecessary care (e.g. investigation / management / treatment).

A WBIT may be recognised:

- by the collector after sending the specimen
- by the laboratory when results do not match the historical record
- after results have been posted when clinical staff either cannot find the results they are looking for or find results for a patient who has not had bloods taken.

**WBITs should always be considered where clinical staff insist they have sent the specimen and the laboratory has no record of it!**

Current WBIT frequency estimates range from 4.3 to 5.8 per 10,000 samples<sup>1</sup>. In most cases it is considered a near miss event, as the error is recognised and the specimen rejected. However, a small number of these events may go unrecognised and may lead to serious consequences for the patient, particularly in the event of transfusion occurring where an ABO incompatible blood group is not recognised.

The United Kingdom Biomedical Excellence for Safer Transfusion collaborative study (2019-20) found most WBIT errors involved multiple contributing factors<sup>1</sup>. Errors related to knowledge gaps (i.e., training and education) were rare however errors due to protocol violations were common, suggesting staff understand sample collection protocols but may not appreciate why failure to follow the protocol might cause patient harm. In protocol violations, the individual intentionally deviates from the sample collection protocol, generally not with the intent to harm the patient but rather to expedite care (i.e., well-meaning but misguided actions)<sup>1</sup>.

Education should do more than provide instruction, it should explain the intended safety benefit from following the protocol. Staff are more likely to follow a protocol if they understand why it matters. Clinical areas are often busy and sample collection is seen as a routine task.

## Clinical scenarios

The following scenarios are based on reported events.

### Scenario 1

Several hours after a nurse sent blood for a crossmatch for an awake ICU patient (able to participate in positive patient identification) no results were found. The nurse contacted the hospital blood bank to find out why the delay, the blood bank scientist informed the nurse they had not received a specimen for the patient in question. To expedite transfusion the scientist asked for a new specimen to be sent. The nurse sent a new specimen. The scientist, who was looking for a specimen for the patient called to see why the delay. They were told a specimen had been sent approximately 30-minutes prior. The nurse answering the call who was looking after the patient while her colleague was on a break, found labels for another patient sitting on the medical record of the patient requiring the crossmatch. Subsequently a WBIT event was suspected. The nurse was concerned that the patient whose details had been used for the crossmatch was currently being transfused a unit of red cells. The transfusion was stopped. Luckily, in this case both patients had the same blood group and negative antibody history.

Where the sample is coincidentally compatible with the patient, and there are no other factors to indicate a problem, the laboratory is unable to detect that the specimen received is not from the named patient. These are known as “silent WBIT errors”.

### Scenario 2

A nurse collected blood from a patient based on a request that did not include all required identifiers (no medical record number). The nurse took the unlabelled specimens and request to label at the nurse's station. On the way a colleague asked about another patient, after which the first nurse proceeded to the nurse's station and labelled the request with a pre-printed patient label and the specimens with that patient's details. The nurse did not realise she had used the labels of the patient she had been discussing, not the labels of the patient from whom she had collected the blood. The named patient's historic group, O positive, did not match the sample group, A positive. There were multiple breaches of protocol that facilitated the WBIT.

- Not having complete patient details on the specimen request
- Removing unlabelled specimens from the patient side
- Distractions occurring during a crucial process (collecting and labelling the specimens)
- No final confirmation of specimen labelling with patient details.

The nurse involved did not intend to make an error, but by not following procedure was open to multiple errors occurring resulting in a WBIT.

### Other situations that have led to WBIT events:

- Patients admitted with incorrect patient details and sample collections occurring without positive patient identification resulting in WBITs. The specimen is taken from the intended patient but labelled with another patient's details. Correct patient identification involves ASKING the patient to state their own name and date of birth and checking the stated details against the identification band and request. This is fundamental to safe care. Blood Matters ABCD of blood sampling reinforces the

message to get it right the first time and every time. The poster take staff through each step of positive patient identification and correct sample collection [ABCD Blood sampling poster \(health.vic.gov.au\)](http://health.vic.gov.au).

- In areas such as the emergency department (ED) or birthing suite, usual workflows may be at odds with the set specimen collection protocol. In the ED specimens may be collected at the same time as intravenous cannula placement before a request or even patient identification has been fully established. This can lead to unlabelled specimens sitting in the room, a known WBIT risk.
- In theatre it may be difficult to check patient identity band when an unconscious patient is draped and access to limbs is limited. There needs to be a way of confirming patient identity that is reliable. Any specimens handed off by a staff member who is “sterile” should be handed to a staff member who was in attendance when the specimen was collected and who should then confirm the patient identity at time of labelling the specimen.

## Conclusion

Health services have tried many methods to improve specimen collection and reduce the risk of WBIT events.

- Staff education and competencies
- Policies and procedures up to date and clear
- Reporting through governance structures to identify and address risks
- Use of “check group”, a second specimen taken separately to confirm the initial blood group<sup>2</sup>
- Two staff checking the ID of specimens taken
- Use of self-reflection tools for staff who have been involved in a WBIT error

Anecdotally, and in the literature, these efforts seem to have had limited impact on WBIT numbers. The most reliable change has been the use of electronic systems to assist the collector in correctly performing patient/specimen identification and stepping the collector through the process. However, this is not fool-proof and WBIT events continue to occur with the use of electronic systems. These systems can also contribute to errors if not set up correctly.

For these systems to be safe<sup>3</sup>.

- Only the patient ID band (attached to the patient) should be scanned for patient identification and one patient ID band available
- The system should reflect safe and usual workflows and be intuitive for the user
- Printing of requests (if required) and specimen labels should occur at the patient bedside to prevent errors associated with the use of a common printer (request forms and labels) and labelling away from the patient side
- IT support needs to be available and responsive to problems with the system

WBIT continues to be a focus of attention for many health services. BloodSafe have developed a tool for [investigation of WBIT events](#). Serious Hazards of Transfusion (SHOT) UK have also developed an [investigation form](#), based on the BloodSafe form.

Investigation and management of human factors that cause these errors may be useful to find effective interventions. Until then vigilance is needed at all times when collecting patient specimens.

## References

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3. ANZSBT, 2021, [Guidelines for the Implementation and Use of Electronic Medical Records for Transfusion](#). (accessed 24/4/23)

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