Patient Perceptions of Sample Labelling Audit in Nine New Zealand Hospitals

Final Report

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August 2025

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EXECUTIVE SUMMARY

Background
With blood transfusion, it is essential to identify the recipient's blood group before providing blood to avoid giving an ABO incompatible transfusion with its associated 30-40% morbidity and 10% mortality. One of the errors that can lead to this is a wrong blood in tube (WBIT) and can arise because the wrong patient was bled or because the wrong patient's details were written on the tube. Accurate sample labelling, especially hand labelling of pretransfusion samples has been shown to reduce the risk of this error. Mislabelled samples at a significantly higher risk of WBITs so are routinely rejected by blood banks.

Aim
To ascertain the level of compliance of patient identification and group & screen blood sample labelling practice, from a patient perspective.

Method
Nine districts took part with the TNS/CNS in each district visiting patients within four hours of the sample collection, seeking consent and asking the audit questions. Patients were specifically asked if the sample collector had asked the patient to identify themselves (name and date of birth), checked that the patient was wearing an ID wristband, and labelled the sample at the bedside. This was a protected disclosure activity. Following a change in sample acceptance criteria and a campaign to improve patient identification and sample labelling, the audit was repeated. The data from the two audits were combined, together with data ono sample rejection rates and wrong blood in tubes rates.

Results
There was significant change overall in sample identification and labelling practices. Almost a third of samples were labelled away from the bedside, contrary to policy and the signed declaration. Sample rejection rates increased due to the policy change but did not reduce over time, a year, as had been expected. Wrong blood in tube rates did not change significantly as a result of the campaign or the change in policy.

Discussion
While this audit has not shown an improvement in practice, it has standardised sample acceptance criteria across most blood banks in the country. This alone is of benefit to patients, sample collectors and blood banks. Further improvement is likely to require a significant change in direction, some of which are discussed. While no single solution is likely to solve this problem, effort is needed to improve current practice.

INTRODUCTION

Blood transfusion is arguably the first example of personalised medicine. It is essential to identify the recipient's blood group before providing blood. Giving an ABO incompatible transfusion is associated with a 30-40% morbidity and 10% mortality. One of the ways that this type of incident can occur is if the blood in the tube is not from the person whose details are on the label. This error is called a wrong blood in tube (WBIT) and can arise because the wrong patient was bled or because the wrong patient's details were written on the tube.

In 2011, one district in New Zealand had a large increase in WBIT events, and after discussion with the district Quality and Risk Manager, a series of "spot checks/track backs" were undertaken to ascertain, from a patient perspective, whether they had been correctly identified and that the group and screen(G&S) blood sample had been labelled at the bedside. Anecdotal evidence suggests that a high percentage of errors could be avoided if the collector correctly identifies the patient and labels the sample at the bedside.

The spot checks/track backs were undertaken by the Transfusion Nurse Specialist, the District Quality Manager and the local Transfusion Medicine Specialist. If there were any discrepancies, the collector was contacted and asked about the circumstances related to the issue, and the Charge Nurse Manager of the ward/department was notified. Only 62% (n=26) of patients reported that the collector had checked the patient identification band, asked the patient to state their name and date of birth and labelled the samples at the bedside[1].

Despite Transfusion Nurse Specialists and educators promoting best sample labelling practice, the annual report of the National Haemovigilance Programme 2019 showed that sample labelling errors nationally are continuing to increase.[2.]

In response to concerns about the rising error rates, NZBS introduced a new policy on 7th November 2022, for its blood banks, tightening up on sample acceptance criteria and promoting positive patient identification at the bedside.

It isn't feasible to check how samples are taken as this introduces the Hawthorne effect, in which individuals modify their behaviour in response to their awareness of being observed. This audit therefore set out to replicate the previous single site study, asking patients what they recalled of their blood sample being collected.

AIM

To ascertain the level of compliance of patient identification and group & screen blood sample labelling practice, from a patient perspective.

Specifically, did the collector:

- Ask the patient to state their full name?
- Ask the patient to state their date of birth?
- Check the patient identification band for the above details?
- Label the sample in the presence of the patient (at the chair/bedside)?

AUDIT STANDARD

All transfusion episodes were assessed against the ANZSBT *Guidelines for the Administration of Blood Products* (2018)[1], NZBS *Transfusion Medicine Handbook* (2016)[2] and the key areas of focus discussed in the previous NZBS audit[3].

METHOD

A standardized *Hospital Audit Tool* (APPENDIX 1: Hospital Audit Tool) was developed to capture responses formally and was provided to each TNS from the participating sites.

Data was collected by five NZBS transfusion nurse specialists (TNS) based in Auckland, Hamilton, Palmerston North, Wellington, and Christchurch, and clinical nurse specialists (CNS) in transfusion employed by Counties-Manukau, Northland and Waitemata Districts.

All patients from whom data was collected were within the hospital and were asked if they were willing to participate. Data was not collected from patients in Emergency Departments, Operating Theatres or Intensive Care Units.

The TNS/CNS:

- Selected and copied Blood Bank request for testing forms that accompanied patient blood samples received by Blood Bank that day
- Visited the patient within four hours of the sample collection, sought consent and asked the audit questions, if able
- Checked that the patient is wearing an ID wristband
- The sample collector was asked to explain any discrepancies between the policy and practice where the patient indicated "no" to any question in an effort to identify opportunities to address structural issues. This was a protected disclosure activity.

In order to spread the workload on the TNS/CNS it was recommended that a maximum of 5 patients should be visited each day. Each site aimed to collect a minimum of 50 cases.

As the New Zealand Blood Service initiated a positive patient identification campaign, the audit was completed in two phases – before the campaign to ascertain baseline data, and then again following the campaign

DATA COLLECTION AND DEMOGRAPHICS

The following data was collected for each episode via a standardized patient audit tool:

- National Health Index (NHI) number, age, gender and ethnicity of the patient.
- The hospital and ward for this admission.
- Professional group of the staff member collecting the sample (doctor, nurse, midwife, phlebotomist, other).
- The time and date of the sample collection
- The time and date of the audit
- Whether the patient was asked to state their full name and date of birth
- Whether the patient identification band was checked for the above details
- Whether the sample was labelled in the presence of the patient (at the chair/bedside)

Where a patient identified that sample labelling had not been performed correctly, the staff member who took the sample was contacted, where possible, and the error discussed.

The data was collated in a PostgreSQL database with restricted access located on the NZBS's internal network. Only the TNS/CNS for that patient and the TMS directly overseeing the audit had access to the identifying data.

ETHICS

Each patient was verbally consented for participation in the audit. No identifying data are included in the report. All identifying data will be removed from the database after the final report is distributed. Multi-region Ethics Committee approval has been obtained (HDEC ref: 2021 OOS 11535). Approval from the chairs of the Hospital Transfusion Committees of participating sites was sought prior to the commencement of the audit.

STUDY DESIGN

The audit was an observational study assessed as minimal risk to participants. The audit proposal was submitted for two levels of peer review (nurse specialist and NZBS clinical advisory group) and thereafter submitted to the Health and Disability Ethics Committee (HDEC) to receive confirmation that formal ethics approval was not indicated. Agreement to proceed was obtained from each participating district, via the Chair of the Hospital Transfusion Committee (HTC), prior to commencement.

The provision of a *Safe Practice Notice* will also be provided with the final report as a clinical tool to summarize any identified changes or recommendations.

RESULTS

Nine districts were invited to participate, with all providing responses in 2022 for the baseline data and eight (88%) providing responses for the post-Positive Patient ID campaign in 2023. The timeframes for data collection were August – October 2022 and April – July 2023. Only one hospital recorded pat9ients who did not or could not consent to the audit. That hospital's consent rate was 70%.

Hospital	2022	2023
Auckland	51	50
Christchurch	61	63
Dunedin	50	-
Middlemore	50	52
North Shore	44	51
Palmerston North	19	12
Waikato	51	53
Waitakere	6	-
Wellington	51	50
Whangarei	40	54
Total	423	385

Table 1: *Audit participation data*

The median age of patients was 61.9 (IQR: 32.8) and 60.2 (IQR: 31.9) for the 2022 and 2023 data respectively. 54% of patients in 2022 were women and 51% in 2023.

Profession	2022		2023	
Doctor	53	(13%)	50	(13%)
Midwife	42	(10%)	34	(9%)
Other	4	(1%)	2	(1%)
Phlebotomist	158	(37%)	124	(32%)
Registered Nurse	150	(35%)	168	(44%)
Unknown	16	(4%)	7	(2%)
Total	423		385	

Table 2: *Breakdown of professional groups collecting the blood samples*

The largest groups of healthcare professionals taking blood samples was registered nurses and phlebotomists (table 2), accounting for over 70% of samples between them.

Phase 1 – Baseline data

Hospital	States name	States DOB	Checks band	Bedside labelling
Auckland	92% (+ 2%)	92% (+ 2%)	61% (+ 16%)	73% (+ 22%)
Christchurch	80% (+ 7%)	83% (+ 7%)	54% (+ 24%)	20% (+ 63%)
Dunedin	100% (+ 0%)	100% (+ 0%)	100% (+ 0%)	86% (+ 12%)
Middlemore	96% (+ 2%)	76% (+ 20%)	88% (+ 10%)	40% (+ 58%)
North Shore	80% (+ 14%)	80% (+ 14%)	57% (+ 34%)	66% (+ 34%)
Palmerston North	95% (+ 0%)	84% (+ 11%)	47% (+ 42%)	79% (+ 21%)
Waikato	84% (+ 8%)	86% (+ 8%)	75% (+ 16%)	75% (+ 22%)
Waitakere	67% (+ 33%)	67% (+ 33%)	17% (+ 83%)	33% (+ 67%)
Wellington	92% (+ 0%)	92% (+ 0%)	59% (+ 12%)	59% (+ 39%)
Whangarei	98% (+ 3%)	95% (+ 3%)	70% (+ 23%)	85% (+ 15%)
Overall	90% (+ 4%)	88% (+ 7%)	69% (+ 18%)	63% (+ 33%)

Table 3: *Breakdown of patient identification and bedside labelling by hospital prior to the change (percentage of patients saying yes + percentage unsure)*

Patients were asked whether the person collecting their blood sample had asked the patient to state their name, state their date of birth, as opposed to reading it out and asking the patient to confirm it. The patients were also asked whether person collecting their blood sample had had check their identity on the patient wrist band and then labelled the sample at the bedside (tables 3 and 4). While asking patients to confirm their identity is being reasonably well now (90-92%), wristband checking and bedside labelling was being performed less frequently (63-69%). The frequency of labelling not occurring at the bedside, nearly one in three samples, is of concern as this is a major risk factor for Wrong Blood In Tube events.

Phase 2 – Post Positive Patient Identification data

Hospital	States name	States DOB	Checks band	Bedside labelling
Auckland	84% (+ 8%)	82% (+ 8%)	58% (+ 8%)	74% (+ 18%)
Christchurch	83% (+ 8%)	85% (+ 8%)	38% (+ 28%)	44% (+ 38%)
Middlemore	100% (+ 0%)	85% (+ 12%)	85% (+ 13%)	58% (+ 40%)
North Shore	96% (+ 4%)	94% (+ 6%)	57% (+ 35%)	43% (+ 47%)
Palmerston North	92% (+ 0%)	92% (+ 0%)	25% (+ 67%)	67% (+ 33%)
Waikato	79% (+ 13%)	85% (+ 9%)	74% (+ 11%)	74% (+ 15%)
Wellington	98% (+ 2%)	98% (+ 2%)	72% (+ 8%)	84% (+ 12%)
Whangarei	100% (+ 0%)	98% (+ 2%)	94% (+ 6%)	91% (+ 9%)
Overall	92% (+ 5%)	90% (+ 6%)	68% (+ 17%)	68% (+ 25%)

Table 4: *Breakdown of patient identification and bedside labelling by hospital following the change (percentage of patients saying yes + percentage unsure)*

There was little change overall to sample collection practices after the Positive Patient ID campaign (tables 3 and 4)(p=0.87, Student's t test). However, there appears to be an improvement in doctors checking wristbands and labelling at the bedside following the Positive Patient ID campaign. However, as doctors are a minority of sample collectors, this hasn't impacted overall results. Phlebotomists perform consistently better than any other group, reflecting a focus on correct sample collection and/or less distraction (table 5).

The median interval been sample collection and interview was two hours for both the baseline period and the period following Positive Patient Identification rollout. The mean intervals were 3.2 and 2.5 hours for the two periods.

	2022				2023			
	States name	States DOB	Checks band	Bedside labelling	States name	States DOB	Checks band	Bedside labelling
Doctor	88% (+6%)	73% (+21%)	63% (+23%)	29% (+65%)	98% (+2%)	82% (+11%)	80% (+16%)	68% (+30%)
Midwife	76% (+12%)	69% (+12%)	62% (+29%)	50% (+45%)	88% (+6%)	88% (+9%)	74% (+18%)	62% (+32%)
RN	85% (+6%)	85% (+8%)	57% (+24%)	63% (+32%)	85% (+8%)	85% (+9%)	55% (+24%)	61% (+31%)
Phlebo--tomist	99% (+1%)	99% (+1%)	85% (+8%)	80% (+19%)	99% (+1%)	99% (+1%)	80% (+7%)	78% (+15%)
Overall	90% (+ 5%)	87% (+ 7%)	70% (+ 18%)	64% (+ 33%)	92% (+ 5%)	90% (+ 7%)	69% (+ 16%)	68% (+ 25%)

Table 5: *Comparison of overall rates of patient identification and bedside labelling before and after the change by collectors' professions (percentage of patients saying yes + percentage unsure)*

Prior to the change in sample acceptance criteria, NZBS Blood Banks accepted correction of minor errors. After the policy change, these errors resulted in a rejection of the sample, consistent with international guidelines and some non-NZBS blood banks. Inevitably, this caused an increase in the sample rejection rate (table 6)($p < 0.00001$ Chi squared test).

Blood Bank	Prior to change			After change		
	samples	rejected	% error	samples	errors	% error
Auckland Blood Bank	54,784	1,118	2.0%	61,789	2,430	3.9%
Waikato Blood Bank	24,466	749	3.1%	26,518	1,641	6.2%
Whangarei Blood Bank	7,915	337	4.3%	8,169	410	5.0%
Middlemore Blood Bank	28,317	875	3.1%	32,227	1,322	4.1%
North Shore Blood Bank	23,529	434	1.8%	26,940	1,040	3.9%
Wellington Blood Bank	25,690	889	3.5%	29,980	1,517	5.1%
Palmerston North Blood Bank	9,723	316	3.3%	10,441	717	6.9%
Christchurch Blood Bank	28,393	694	2.4%	31,666	1,404	4.4%
Dunedin Blood Bank	10,381	326	3.1%	11,404	914	8.0%
Total	213,198	5,738	2.7%	239,134	11,395	4.8%

Table 6: *Pre-transfusion sample rejection rates for 12 months prior to the change (1/7/2021 - 30/6/2022) and after the change (1/4/2023 - 31/3/2024)*

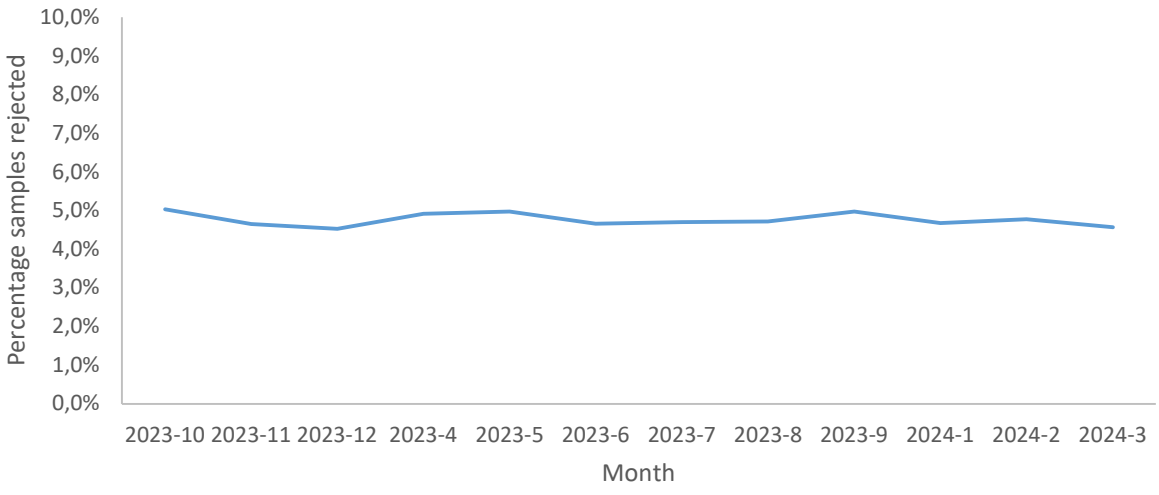

Figure 1: *Percentage of errors (all sites) over 12 months following the policy change*

It was hoped that, over time, people collecting samples for pre-transfusion testing would adapt to the new criteria. Unfortunately there was no such trend over the year following implementation of the new policy (figure 1)(R^2=0.0683, p=0.41).

Where there were concerns raised by the patient, the sample collector was approached for comment. While this wasn't always possible due to shifts etc, a few common themes emerged. 8% of samples were collected from a patient that did not have a wristband on at the time of the phlebotomy. This did not differ from before or after the change in policy and was spread across all hospitals. Many of these patients were outpatients. This poses a significant risk for patient identification if verbal procedures are not meticulously adhered to.

One in 28 people collecting samples admitted to breaking the hospital policy on sample collection and labelling. This did not differ from before or after the change in policy and was spread across all hospitals.

Wrong Blood In tubes (WBIT) rates were calculated over the same time frames (1/7/2021 - 30/6/2022 and 1/4/2023 - 31/3/2024). In the period prior to the implementation, there were 39 WBITs in pre-transfusion samples due to mislabelling (right patient, wrong labelling) or mis-collecting (wrong patient, correct labelling) in 159,722 pre-transfusion samples. The rate, corrected for blood groups and presence of historical blood groups results, was 5.26 WBITs per 10,000 samples. Following the policy change, there were 34 WBITs in 174,217 pre-transfusion samples with a corrected rate of 4.81 WBITs per 10,000 samples. The difference was not statistically significant (p=0.3507) (Fisher exact test).

LIMITATIONS

In terms of methodology, this was an observational audit conduct prospectively. Observational audits are not high level evidence but provide real-world information and hypothesis generation.

The principal limitation is that this is an audit of patients' perceptions rather than direct observation of the sample labelling process. This approach was taken to minimise the Hawthorne effect, in which in which people being observed modify their behaviour in response to their awareness of being observed. The audit is reliant on patients' recollections (recall bias). They were not recruited prior to sampling so would not have been especially focussed on the sample collection process.

In terms of patient recollections, women doctors may be mistaken for nurses or midwives so this could skew data on professions and their error rates.

In addition, patients may not always be motivated purely by a desire for accuracy. Concerns that the phlebotomist might get into trouble for not performing the procedure correctly may have increased the "unsure" responses. This is difficult to assess. What is reassuring though is that overall, the rates of unsure responses were similar for all measures except bedside sample labelling which decreased somewhat after the policy change.

Emergency Departments, ICUs and operating theatres were not audited. EDs have a higher risk for sample labelling errors as patients are more likely to be unfamiliar, frequently changing location and Eds are often reliant on nurses and doctors to take samples. This audit has not captured this particularly vulnerable area. Similarly, the audit has not identified high-pressure situations, which will have their own particular demands around sample labelling.

Related to this are high level of uncertainty on certain aspects of the process. An example is the 25% overall uncertainty whether samples were labelled at the bedside, ranging up to 47% at one hospital. This introduces difficulties in assessing and drawing conclusions from the final data.

DISCUSSION

Pre-transfusion blood sample labelling is a critical step in ensuring patient safety and the efficacy of blood transfusions. Mistakes in this process can lead to serious consequences, especially acute ABO haemolysis with an appreciable morbidity and mortality. Implementing best practices in labelling can significantly

reduce errors and improve patient outcomes, not just for pre-transfusion samples but all laboratory samples[4].

One of the earliest changes that NZBS implemented in this regard was a universal requirement across all its blood banks that pre-transfusion samples must be hand labelled at the bedside in 2004[5,6]. Strict sample acceptance criteria were backed by evidence showing that mislabelled specimens had up to a 40-fold higher risk of being WBITs[7].

One of the most effective ways to minimise errors in blood sample labelling is to establish uniform protocols across all healthcare settings. Standardisation ensures consistency, which is crucial in high-stakes environments such as blood transfusion. This has been one of the key drivers for adopting the revised sample labelling standards. Staff move regularly between districts and the previously varied standards, with NZBS's standard more relaxed than many others, has caused confusion and dissension. It is hard to quantitate the impact of this, and it is likely it will take some time as staff moving between districts slowly become accustomed to the new standard practice.

However, what this audit has also shown is that very little change has occurred in sample collection practices at the bedside. It is perhaps not surprising then that this audit has not shown a significant change in the rate of WBITs.

Given that we have been progressively tightened up on sample acceptance over many years, why are WBITs still occurring at all? Both international and local work have shown that h[8]uman factors are key to what is a manual process in a highly distracting environment, coupled with high levels of repetitive behaviour. All this makes for an error prone system. In the BEST study, the two commonest factors were not confirming the patient's identity and having another patient's labels or tubes available at the time of collecting the blood sample[9].

What this audit has definitely shown is the expected increase in rejected samples as the new NZBS policy matches the tighter policies of some other blood banks. While this was an expected and inevitable consequence of tightening the policy, it was anticipated that the error rate would fall with time. Unfortunately, this does not appear to have materialised yet.

The hospital cost of these errors does need to be considered. This is not only the financial cost of extra tubes and other consumables but includes staff time and risks to patients from additional venepunctures. The change in policy has resulted in over 5,000 additional venepunctures. While this cost of the policy change may nevertheless be worthwhile, it does need to be reflected upon.

Similarly, the Positive Patient ID campaign, associated with improving bedside sample collection and the tightened acceptance criteria, has not seen a substantial shift in the checks associated with taking blood samples.

Part of this may be that there are two different sets of criteria for accepting blood samples in any hospital. While we have standardised the collection criteria for pre-transfusion samples, there is a significant difference between requirements for pretransfusion samples and those of other diagnostic samples. Characteristically, diagnostic samples have looser requirements, permitting pre-printed addressograph labels and correction of sample labelling after receipt in the laboratory.

If we are to make a system change to sample collection, we need to look beyond tightening up the existing system. Looking at WBIT rates internationally, our post-implementation observed rate of 1in 2079 is similar to the international average of 1 in 2000 when using non-electronic bedside labelling[10].

Training is often suggested as a solution to this problem. However, despite many years of promoting this, the high numbers of staff involved in blood collection, high staff turnover and limited resources to provide meaningful training, limit the ability of this solution. In addition, training is often seen as a soft solution to a system and/or manual problem. It would seem that there is probably not much more to be gained by trying to tweak the existing system.

We are fortunate in New Zealand that we already have a single unique patient identifier, the NHI, that is used nationally. Many other countries struggle with this aspect of patient identification[11]. However, we do

still regular instances where the patient is misidentified and the incorrect NHI assigned at admission to hospital. While this itself is not a risk of ABO incompatible transfusion, it does create delays in transfusion as the blood bank tries to resolve the group discrepancy.

There are a number of ways that this issue can be addressed:

1. The most obvious is to educate staff. This should cover the importance of patient identification, both at admission and at the point of sample collection, but also on accurate labelling of samples and forms. Avenues for staff education include, posters, meetings, screensavers on ward computers, quality teams, and internal audits. While important and with supporting evidence[17], education is generally considered a soft solution and one that has been and continues to be done in most hospitals in this audit. Key underlying human factors in errors include fatigue, stress, and distraction[20]. Although education can inform and guide, it cannot address these central human factors.

2. Similar to the above, wide dissemination of information on labelling error rates has the potential to raise awareness and reduce error rates. This may be particularly effective if reported in a way to tap into competitive behaviour between departments and wards.

3. Identification of outpatients has the potential for errors, especially for patients who are well known to staff. While using a wristband for outpatients may not be practical, a clear hospital policy for how such patients should be identified (e.g. photographic ID) has potential to reduce errors.

4. A different low-tech solution that has been proposed is double verification of sample labelling. Implementing a double verification system, where two healthcare professionals independently verify the labelling information, can significantly reduce errors. An American study showed similar results to barcode reading in reducing WBITs[12]. The limitation of this solution is the ability to find staff to conduct the dual verification as well as ensuring the double verification is conducted correctly[13]. This may vary from ward to ward and hospital to hospital but, given current constraints on staff, this is unlikely to be successfully taken up

5. A second low tech solution that is often proposed is to ensure that the patient has an historic blood group result in the blood bank[14]. This will ensure that an ABO incompatible transfusion due to a WBIT is not permitted by the blood bank computer system. Although this will increase costs due to additional test requests, this could be limited by only requesting a second sample for non-group-O patients with no historic group. With New Zealand's single national computer system for blood banking, we have patient records of blood groups going back 20 years. This means that, in the last four years, only 21% of samples were first time samples, and 44% of those were group O. This means only one in ten samples would need a second sample for group confirmation. It may also delay the initial transfusion, which carries with it, situation-specific risks. The evidence for this solution is limited with the NHSBT[18] audit and a Canadian audit[19] showing no reduction in WBITs, although its intention is to prevent ABO incompatible transfusion, not WBIT.

6. A personnel solution that has shown effectiveness, both locally and internationally[17], is increased use of phlebotomists for collecting samples, as opposed to doctors, nurses and midwives. Phlebotomists have significantly lower error and WBIT rates. While this does increase staff costs, it also frees up more expensive staff to focus on areas of their expertise, as well as laboratory staff, while reducing delays due to mislabelled samples.

7. One of the reasons that phlebotomists are so successful is that they are focussed solely on sample collecting. Assisting them is typically a trolley with all the required material and a place to label samples. Labelling at the bedside can be difficult, especially if staff are not wanting to the patients' bedside or overbed tables. This means that if staff need to a support surface to write on the form or tube, that they leave the bedside, creating a situation for errors.

8. The implementation of bedside technology including barcode readers and bedside label printing significantly enhances the accuracy of sample labelling and is generally regarded as the gold standard solution. This provides "hard stops" around incorrect patient identification plus a full audit trail. It also manages hard-to-spell names, and unidentified patient names and numbers, that may

be similar to each other. Numerous studies have shown that barcode systems can reduce labelling errors significantly[15] while not increasing time to collect and label the samples[16]. It is not an absolute defence as patient identification errors can still occur if the system is not used as intended[8] but still outperforms hand labelling. New Zealand has its own system built being trialled in Waitematā District for diagnostic samples. Discussions about the inclusion of pre-transfusion samples are ongoing.

With all of these initiatives, it is still necessary to monitor sample labelling errors and WBITs. This can provide valuable insights into trends, changes in the causes of mistakes and areas for improvement. Such a system should capture data on the type and frequency of errors, the circumstances under which they occurred, and the outcomes. Similarly, regularly reviewing and updating labelling protocols based on the latest evidence, technological advancements, and feedback from staff is needed. A culture of continuous improvement, where healthcare professionals are encouraged to suggest and implement changes enhances patient safety.

In summary, this audit has shown no substantial change in sample labelling practice or reduction in wrong blood events. However, with the tightening of acceptance criteria, an increase in rebleed requests has inevitably arisen. While standardising practice across districts may take time to reap benefits, a number of other possible changes are suggested. While no single solution is likely to solve this problem[17], effort is needed to improve current practice.

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ACKNOWLEDGEMENTS

The authors wish to acknowledge the support of the participating hospital transfusion committees, blood banks, and hospital staff who made this audit possible. In particular, we are grateful to Katy Konrad, Richard Seigne, Scott Robinson for their helpful feedback on the draft report.

APPENDIX 1: Hospital Audit Tool

Sample Labelling Audit – Patient Perceptions 2021

General Information

Audit No		Hospital		Ward	
Date		Time of sample collection		Time of audit	
Professional status of collector	Dr	Nurse	Midwife	Phlebotomist	Other

Patient Details

NHI		Age	
Gender		Ethnicity	

Consent

Verbal consent obtained	Yes	No

Audit Points

Did the collector

Ask the patient to state full name	Yes	No	Don't know
Ask the patient to state date of birth	Yes	No	Don't know
Check the patient identification band	Yes	No	Don't know
Label the sample at the chair/bedside	Yes	No	Don't know

Any other comments?