National Comparative Audit of Blood Transfusion

2012 Audit of Blood Sample Collection & Labelling

December 2012

St. Elsewhere's Hospital

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HOSPITALS THAT AGREED TO PILOT THE AUDIT:

The James Cook University Hospital; Friarage Hospital, Royal Devon & Exeter Hospital; Great Ormond Street Hospital; The John Radcliffe Hospital and Darent Valley Hospital.

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EXECUTIVE SUMMARY

1. For the 133 sites where the total number of rejected (mislabelled) samples and the total number of all transfusion samples, was known, the rate of mislabelled samples was 2.99%, 25279 per 845445. This is comparable to the 2004 study [2].

2. There were 99 instances of miscollected samples (Wrong Blood in Tube, WBIT). Out of 146 responding sites, 88 reported no WBITs, 32 reported one, 15 sites reported two, 7 reported three, and 4 reported four. The rate of WBIT could not be quoted as data on repeat samples were not available.

3. All 221 responding sites had a policy that covered the taking of blood samples for transfusion, and all but one had a policy covering the rejection of mislabelled samples. The majority of sites (154/221, 70%) stated that no amendments or additions to samples were permitted (also known as "zero tolerance") but of these, 50 then went on to describe amendments they would permit. From replies received, 50 sites (23% of respondents) appeared to allow deviations from their own policy.

4. Doctors were the staff group most likely to be responsible for mislabelling specimens. However, 38% of the rejected samples in our audit could not be traced to a particular member of staff either because the identity was omitted or was illegible, or the person was not known to the transfusion laboratory. National denominator data is lacking for the percentage of samples routinely taken by each staff group, but may be accessible locally for individual sites.

5. Denominator data for the location (e.g. wards, outpatients) where transfusion samples are taken, and whether within or outside core hours, are not available. However, the commonest location is in-patient wards (28%) followed by emergency departments (19%), community outpatients/pre-op assessment (14%) and community (13%). Clinical areas that reported a low number of errors included operating theatres (1%), neonatal units (1%), paediatric wards (2%) and ITU/HDU (3%). However, the total number of transfusion samples in these areas may be low.

6. When errors were followed up, the commonest reasons given for mislabelled samples were transcription errors (1755 responses, 33%) and distraction (1265 responses, 24%).

7. Data on 5330 samples showed that 64% of staff responsible for errors had been competency assessed. The staff groups most likely to have been assessed were phlebotomists (82%) healthcare assistants (73%) and nurses (72%). Doctors were the least likely (49%).

RECOMMENDATIONS

- All hospital transfusion departments should have a policy in place that states clearly whether the laboratory operates under "zero tolerance", i.e. no samples will be accepted under any circumstances if they lack core identifiers or date of sample, or whether it will accept certain mislabelled samples in special circumstances. In the latter case, there should be a clear policy covering the circumstances under which a mislabelled sample will be accepted, who is allowed to make corrections, and how many corrections are permitted. Laboratory staff should not be permitted to make these corrections.

- There should be strict adherence to this policy.

- Staff taking blood samples should recognise that obtaining positive patient ID is central to safer blood sample labelling.

- Transfusion samples must be labelled by the patient's side. Systems should be designed to ensure clinical staff do not have to leave the patient's side to label blood samples. Ward managers have an important role in stopping the practice of labelling away from the patient's side, for example at the nurses' station.

- In clinical situations where it is unavoidable that the clinician has to hand a transfusion sample over to another member of staff (for example, when the transfusion sample is taken as part of a complex clinical procedure), there must be an agreed protocol to ensure the sample is labelled correctly and is witnessed by the person taking the sample.

- The following data must be present and correct on the transfusion sample and request in order for it to be accepted: First name, last name, date of birth and unique identifying number, and date of sample. In addition, either the sample tube or the request form should contain date and time the sample was taken and such details of the sample taker that will permit traceability. If additional (non-core) data are deemed useful by a hospital/Trust, the balance of risks and benefits should be taken into account before a decision is made to reject samples in which such data are incorrect or absent.

- Our finding that miscollected samples (Wrong Blood in Tube) are still regularly identified could be considered to strengthen the recommendation, made by the British Committee for Standards in Haematology (BCSH) guidelines on pre-transfusion compatibility procedures [1], that, where possible, a second "group check" sample should be obtained before group-specific blood is issued. However, there should be local risk assessment of such a policy. The use of only group O cells when the need for blood is urgent, until a second sample has been taken and processed, may have a significant impact on blood stocks.

- As many follow up questionnaires cite unfamiliarity with transfusion sample labels as a reason for omission of core information, consideration should be given to a national specification for transfusion sample labels, designed to improve compliance with labelling requirements.

- Electronic systems can reduce transcription, and other, errors, but if such systems are used the label must be generated from the patient's identity band at the patient's side; not using labels from a remote printer. Ideally, the sample taker should have a hand held PDA or similar that is connected to the hospital PAS/LIMS system to capture additional important information such as the name of the sample taker and the date and time the sample was taken. Technology should prevent the possibility of the PDA being used to print labels away from the patient.

- We recommend that hospitals regularly measure their mislabelling/miscollection rates in order to benchmark their progress.

INTRODUCTION

WHY WAS THIS AUDIT NECESSARY?

Errors can occur because a blood sample is miscollected (from the wrong patient) or mislabelled (with one of the four core identifiers missing, incorrectly written or illegible). Previous national and international audits have shown these errors are common [(2),(3), (4)]. Factors contributing to incorrect sample taking have been suggested by a number of authors [(5),(6),(7)], and include;

- Lack of knowledge / understanding of the process
- Failure to properly identify the patient
- Being distracted while taking and labelling the sample
- Labelling the sample away from the vicinity of the patient

The British Committee for Standards in Haematology (BCSH) requires that all blood samples and requests for transfusion must carry four points of identification: first and last names, date of birth and unique identifying number [(8)]. In addition, it is a Medicines and Healthcare Products Regulatory Agency (MHRA) requirement that laboratories should have policies in place for requesting tests, which include managing incorrectly labelled specimens, and that these policies are strictly adhered to [(9)]. Robust sample rejection policies reduce the risk of assigning the wrong result to a patient but potentially lead to delay in availability of results and in delivery of compatible blood. This also applies where samples are sent away to reference laboratories for specialist tests. Consistent application of national recommendations for sample labelling and acceptance across both hospital and reference laboratories would be a major contribution to improving patient safety.

WHAT DID THIS AUDIT AIM TO ACHIEVE?

The aim of this audit was;

- to collect information on the quality of practice of collection and labelling of transfusion samples
- To determine if;
    - Patients are correctly identified at the time of sampling
    - There is a robust system in place for sample labelling
- To understand the reasons that sample labelling errors are made
- To reduce the incidence of blood sample labelling errors

WHO ARE THE PRINCIPAL STAKEHOLDERS?

- NHS hospitals
- Independent hospitals
- NHS Blood and Transplant (NHSBT)
- National Blood Transfusion Committee (NBTC)

DATA TRANSPARENCY AND DATA SHARING

In line with current practice within national clinical audits, the National Comparative Audit of Blood Transfusion (NCABT) is exploring ways of making key results available to organisations such as the Care Quality Commission (CQC).

At present we supply to the CQC the names of those hospitals and NHS Trusts who contribute data to our audits.

METHODS

HOW WERE NHS TRUSTS AND INDEPENDENT HOSPITALS RECRUITED?

All NHS Trusts and independent hospitals in England were invited to participate in the audit. Trusts and hospitals in Wales, Northern Ireland and Scotland were also invited to participate, as were hospitals in New Zealand.

Hospitals were intended to be the unit of involvement, since practice may vary from hospital to hospital within a Trust. Trusts were asked to nominate their participant hospitals. However, data were submitted by Trusts as a whole and by individual hospitals. Therefore, the term "sites" is used throughout this report to refer to either Trust or hospital.

A letter, explaining the purpose of the audit, the proposed timescale, and the proposed dataset to be collected, was sent via email to Chairs of HTCs, Trust Transfusion Laboratory Managers, Transfusion Practitioners, and Consultant Haematologists with responsibility for blood transfusion. For independent hospitals a letter was sent to the hospital manager.

SAMPLING STRATEGY

Hospitals were asked to provide data on blood samples sent for group and save or group and crossmatch, in the 3 months of May, June and July 2012. Equally, they were asked to provide the total number of samples that were, for any reason, rejected in the laboratory because of labelling errors.

We also asked for details of the number of incidents formally investigated in the hospital, during the audit period, because they were "wrong blood in tube" events.

Transfusion Practitioners were asked to follow up a minimum of 3 cases per week where sample rejection has occurred, to identify the reason for the error(s) that led to the sample being rejected. More could be audited if resources allowed.

STANDARDS

- Recommendations from previous audits[2] [3] [10]
- BCSH guidelines on blood administration [1] [8]
- National Patient Safety Agency guidelines [11]

DATA COLLECTION METHOD

There were 3 types of data collection:

- Organisational proforma to be sent to all participating sites
- Laboratory proforma for identifying rejected samples
- Follow-up questionnaire for investigation of the reasons for mislabelling

Organisational audit data was collected using an online survey form, while data on the rejected samples was collated by staff in sample reception areas of transfusion laboratories onto pre-printed proformas which were returned to NHS Blood and Transplant (NHSBT) for processing.

Follow-up questionnaires were pre-printed and sent to sites, and these were completed by staff conducting the follow-up interviews. Data were then entered onto an online audit proforma.

PILOT

The pilot was conducted by some members of the Project Group visiting the following hospitals: The James Cook University Hospital; Friarage Hospital; Royal Devon & Exeter Hospital; Great Ormond Street Hospital; The John Radcliffe Hospital and Darent Valley Hospital.

During those visits, the laboratory and follow-up proformas were trialled and modified as necessary after each visit. The Organisational audit tool was trialled on paper at the same time.

ANALYSIS AND PRESENTATION OF RESULTS

Data from the organisational questionnaire and clinical audit were analysed using SPSS version 19.

National results are presented in this report as percentages for categorical data and as medians and interquartile ranges (IQR) for numerical data.

To facilitate benchmarking individual site results are shown alongside the national results. Some of the 'Your site' results are based on small numbers of patients; sites need to take account of this when interpreting their own results.

During the 'data cleaning' phase of this audit it was found that some sites had included cases in their follow-up for which they were unable to locate the healthcare professional who had made the error. These cases were excluded from the analysis of follow-up data.

AUDIT STANDARDS

ORGANISATIONAL AUDIT

STANDARD 1.

Hospitals have a policy or Standard Operating Procedure (SOP) which clearly states the requirements for labelling blood samples taken for transfusion and the completion of request forms, where used.

STANDARD 2.

The policy covers action to be taken if these requirements are not met.

STANDARD 3

Policy / SOP includes a statement on the extent of "zero tolerance" in respect of what changes may be made to information written onto sample tubes and request forms, and who may make such changes.

CLINICAL AUDIT

STANDARD 1

Samples taken for transfusion bear all core patient identifiers – First name, last name, date of birth, NHS/Hospital ID number, and date that sample was taken.

STANDARD 2

The transfusion request form is completed with all core patient identifiers plus the date and time of sample, and the identity of the person taking the form.

STANDARD 3

All core information on sample tubes and request forms is legible.

STANDARD 4

All core information on sample tubes and request forms matches.

STANDARD 5

Details on sample tubes and request forms are not overwritten.

STANDARD 6

The person collecting the blood sample can be readily identified from the sample tube or request form.

STANDARD 7

The person taking the sample is appropriately competency trained and assessed.

RESULTS:

151/163 (93%) eligible NHS trusts in England and North Wales[1] with a total of 204 sites took part in this audit. A further 13 sites from Scotland, 13 from the rest of Wales, 6 from Northern Ireland participated from within the public sector and 19 from the independent sector also took part. A total of 255 sites[2] participated.

RESULTS: ORGANISATIONAL AUDIT

YOUR SITE WAS INCLUDED IN THE ORGANISATIONAL AUDIT

Organisational questionnaire data was included for 221 sites. Please note that whilst many sites submitted their own data, for some sites the submission was received from the NHS Trust and applied to each relevant site within the Trust. A similar application was made for private sector providers where applicable.

Q2. Does your hospital have a policy that covers the taking of blood samples for transfusion?

Table 1

National	N=221	%	Your site
Yes	221	100%	**Yes**

100% of sites met Standard 1: Hospitals have a policy or Standard Operating Procedure (SOP) which clearly states the requirements for labelling blood samples taken for transfusion and the completion of request forms, where used.

Q3. Does your laboratory have an SOP that covers the rejection of mislabelled samples?

Table 2

National	N=221	%	Your site
Yes	220	99.5%	**Yes**
No	1	0.5%	

99.5% of sites met Standard 2: The policy covers action to be taken if these requirements are not met.

[1] NHSBT supplies hospitals in England & N. Wales.

[2] Sites submitted data either as individual hospitals or trusts; therefore the number of sites exceeds the number of eligible trusts. The number of eligible sites could not be estimated because whether data is submitted as a hospital or a trust varies from audit to audit.

Q4. Whether you have a policy or not, which of these options best describes your practice?

Table 3

National	N=221	%	Your site
A. No amendments or additions are allowed & all samples are rejected & none are held or processed	154	70%	Yes
B. Laboratory allows addition or correction of information & then processes sample	46	21%	No
C. Laboratory only holds "precious samples" such as those from neonates & allows addition or correction of information & then processes sample	42	19%	No

NB: Some sites responded to more than one option: combinations were A&C (15), B&C (9). Three sites selected none of these options.

It was clear that some sites stated in Question 4 that 'No amendments or additions are allowed & all samples are rejected & none are held or processed' but that they also *either* made exceptions because of precious samples *or* went on to give examples in Question 5 of situations where changes were allowed. Accordingly, we defined 'zero tolerance' to include only those sites where 'No amendments or additions are allowed & all samples are rejected & none are held or processed' and where no exceptions are made for precious samples and who indicated throughout Question 5 that no changes were allowed.

Table 4

National	N=221	%	Your site
Zero tolerant (ZT)	104	47%	ZT
Not Zero tolerant (Not ZT)	117	53%	

Table 5

Regional variation	Zero Tolerant sites	
East Midlands	9/13	69%
East of England	5/19	26%
London	19/35	54%
North East	6/15	40%
North West including N Wales	17/41	41%
Northern Ireland	5/6	83%
Scotland	9/12	75%
South Central	3/8	38%
South East Coast	5/16	31%
South West	8/16	50%
(rest of) Wales	5/9	56%
West Midlands	5/12	42%
Yorkshire & Humber	8/19	42%
Total	104/221	47%

Those sites without zero tolerance in effect became the denominator for questions 5, 6, 7 and 8 that asked specifically about allowable changes.

50/221, i.e. 23% of sites are not compliant with Standards 3 and 4 as they lack clarity on what is and is not "zero tolerance" , i.e. despite this policy, additions or amendments appear to be allowed.

Q5. If your practice allows for the addition or amendment of information, what is allowed? (Non-ZT sites only, N=117)

Table 6

National N=117	No change		Change on Tube		Change on Form		Change on Tube & Form		Blank data		Your site
First name	63	54%	7	6%	15	13%	28	24%	4	3%	
Last name	66	56%	5	4%	14	12%	27	23%	5	4%	
ID number	66	56%	5	4%	16	14%	25	21%	5	4%	
Date of Birth	63	54%	7	6%	16	14%	26	22%	5	4%	
Address	46	39%	1	1%	24	21%	20	17%	26	22%	
Gender	56	48%	2	2%	18	15%	23	20%	18	15%	
Clinical area	29	25%	1	1%	42	36%	24	21%	21	18%	
Date of sample	65	56%	5	4%	14	12%	21	18%	12	10%	
Time of sample	60	51%	5	4%	14	12%	21	18%	17	15%	
Name of person taking the sample	77	66%	7	6%	15	13%	9	8%	9	8%	
Clinical details / indication for transfusion	36	31%	1	1%	60	51%	10	9%	10	9%	

Some of the blank data may just be missing data, but some may also be a reflection of sites indicating that the item of information was not essential to them and hence was not applicable in terms of answering this question - i.e. was outside their own relevant core patient minimum dataset.

Overall, including the 104 zero tolerant sites there were no changes allowed for first name in 167/221 (76%), last name in 170/221 (77%), ID number in 170/221 (77%), Date of birth in 167/221 (76%) with no changes allowed for ANY of these four core items in 162/221 (73%).

Q6. Is there a limit to the number of changes that can be made to one sample label or request?

Table 7

National	N=117	%	Your site
Yes	72	62%	
No	28	24%	
Blank	17	15%	

Q7. If yes, what is the maximum number of changes?

52 sites said 'one', 7 'two', 2 'three' and 1 'six'. There were also 4 who said 'none' and who were in the non-tolerant group because of precious samples. Two other sites said 'none' and for 4 this was not known.

Q8. If you allow additions or amendments, who is allowed to make them?

Table 8 National	N=117	%	Your site
Person collecting sample	76	65%	
Someone authorised to do so by the person collecting sample	5	4%	
Anyone	1	1%	
Laboratory staff	12	10%	

There were 30 of the 117 that left Q8 entirely blank. It is not entirely clear what this means and could most likely be a mix of 'none of these options', of 'missing data' and of some perhaps who felt the question was somehow 'not appropriate' to their circumstances.

Q9. Does your practice differ depending if the sample is for Group & Save or Group & Crossmatch?

In 216 sites there was no difference in practice, but in 5 there was, with differences explained (Q10) as follows:

- (X2 sites) If we have a group and save sample for someone whose details we don't know (i.e. may not have first name i.e. new born Baby) and the patient requires transfusion, we ask for a second request form which might then contain the first name, the sample however will not have the first name or may have an unknown identifier (i.e. Baby or unknown male), we don't ask for a second sample if the request is urgent
- Changes can be only made to a sample if it has been deemed 'precious' i.e. patient requires blood and to repeat the sample might endanger the patient. Group and save samples cannot be altered and are rejected if info is missing or incorrect
- Crossmatch samples that have the incorrect information will get phone through to the clinical area to ask for repeat sample
- No changes if sample to be used for provision of blood products

Q11. Which of the following labelling options describes your usual practice?

Table 9

National	N=221	%	Your site
Sample tube labels are handwritten at the patient's side	218	99%	Yes
Sample tube labels are printed at the patient's side and are stuck onto the tube	15	7%	No
Other*	8	4%	No

*Other responses included printing samples away from the patient's side (n=6), one use of addressograph labels (which we strongly advise against) and one response which did not include labelling practice.

Q12. Which of the following labelling options for requests describes your usual practice?

Table 10

National	N=221	%	Your site
A. Request forms are handwritten	165	75%	Yes
B. Labels that are printed at the patient's side are stuck onto the request form	18	8%	No
C. Pre-printed labels are stuck onto the request form	152	69%	Yes
D. No form is used - electronic ordering is in operation	28	13%	No

Nb. There was one site submitting a blank return for this question. Options A and C were selected by 119 (54%).

There were comments received in relation to this question from 13 sites that indicated that printed forms were generated electronically.

Q13. What is your job title?

Table 11

Title	N=221	%
Blood Services Manager	38	17
Quality Manager / Co-ordinator	5	2
BMS	10	5
Transfusion Practitioner	157	71
Haematologist	3	1
Other	8	4

RESULTS: TOTAL LABORATORY SAMPLES, WBIT NUMBERS AND SAMPLE REJECTION RATES

Hospitals were asked for the total number of samples received during the 3 months of May, June and July 2012. They were also asked for the number of Wrong Blood in Tube (WBIT) incidents, and were asked to provide the total number of samples that were, for any reason, rejected in the laboratory because of labelling errors.

Your site: Total samples:7503; WBITs: 1, Total rejected samples: 30

Sample rejection rate:
Overall, 220 sites reported a total of 38570 rejected samples over the 3 month period. However, only for 134 sites were both the total number of samples and the total number of rejected samples known. For these 134 sites the overall rejection rate was 25279 rejected from 845445, or 2.99%.

These 134 sites had a median (IQR) of 134 (70-240) number of rejected samples, similar to the 119 (54-241) for those 86 sites for whom the total of samples was not known.

Total samples, total rejected samples and organisational data were all available for 125 sites of which 57 were zero tolerant and 68 were not zero tolerant.

For 57 zero-tolerant sites, the overall rejection rate was 11674 from 378534, or 3.08%.
For 68 non-zero-tolerant sites the overall rejection rate was 12215 from 416149, or 2.94%.

Wrong Blood in Tube
There were 99 instances of miscollected samples (Wrong Blood in Tube, WBIT). Out of 146 responding sites, 88 reported no WBITs, 32 reported one, 15 sites reported two, 7 reported three, and 4 reported four. The rate of WBIT could not be quoted as data on repeat samples were not available.

RESULTS: SAMPLES REJECTED BY THE TRANSFUSION LABORATORY

Laboratories were asked to record details of every blood sample rejected because there was a mismatch between details on the sample tube and any request form used. There were also a number of cases where the sample was rejected because details did not match laboratory computer held records.

This section is based on 38570 lab proforma entries from 220 sites. ***Your site 30.***

For some sites there were small discrepancies between totals obtained by summing up those that made errors, where errors were made and when errors were made, and hence the slightly differing totals at national level and occasionally at local level.

Who is making the errors?

Table 12

	National		Your site	
	N	%	n	%
Unknown	14612	38%	2	7%
Doctor	8410	22%	20	67%
Nurse	5621	15%	2	7%
Midwife	4252	11%	3	10%
Community midwives	2433	6%	0	0%
Phlebotomists	1883	5%	3	10%
Healthcare Assistant	778	2%	0	0%
ODA/ODP	123	0.3%	0	0%

Note that the sum of cases used to calculate the percentages was 38112.

Where are the errors being made?

Table 13

	National		Your site	
	N	%	n	%
Inpatient ward	10801	28%	18	60%
A& E / Emergency Dept	7198	19%	4	13%
Outpatient / Pre-Op clinic	5431	14%	2	7%
Community	4893	13%	0	0%
Delivery suite	3453	9%	1	3%
Medical Assessment Unit (or similar)	1559	4%	2	7%
Day ward	1496	4%	1	3%
Intensive care/HDU	1163	3%	0	0%
Unknown	1029	3%	0	0%
Paediatric ward or similar	670	2%	0	0%
Theatres/Recovery	316	1%	2	7%
Neonatal unit	314	1%	0	0%

Note that the sum of cases used to calculate the percentages was 38323.

When were the samples taken?

26331 samples (68%) were taken in core hours, and 10713 (28%) were taken out of hours. Not known for 1419 (4%) samples.

What data was missing from the sample tube?

Table 14

	National		Your site	
	N	%	n	%
Core patient identifier(s) don't match on tube and form	15946	41%	3	8%
Core patient identifier(s) missing from tube	8678	22%	12	31%
Other required details missing from form	2556	7%	4	10%
Core patient identifier(s) missing from form	2492	6%	8	21%
Pre-printed label on tube	2440	6%	2	5%
Other required details missing from tube	2330	6%	8	21%
Sample rejected by system because information was incorrect	1423	4%	0	0%
Unlabelled tube or form	1171	3%	1	3%
Other required details don't match on tube and form	914	2%	0	0%
Illegible details on tube or form	761	2%	1	3%
Details overwritten	583	2%	0	0%

Note the cases column adds to 39294 because, in part, multiple reasons are possible. Percentages use the total denominator of 38570.

SAMPLE REJECTED BY WHETHER SITE IS ZERO TOLERANT (ZT)

Sample rejection data and organisational data were both available for 192 sites of which 92 were zero tolerant (ZT, with 16867 rejected samples) and 100 were not zero tolerant (NOT ZT, with 16343 rejected samples).

Who is making the errors?

Table 15

	ZT (92 SITES)		NOT ZT (100 SITES)	
	N	%	n	%
Unknown	6768	40%	6497	40%
Doctor	3634	22%	3437	21%
Nurse	2404	14%	2257	14%
Midwife	1731	10%	1877	12%
Community midwives	1138	7%	877	5%
Phlebotomists	675	4%	848	5%
Healthcare Assistant	363	2%	251	2%
ODA/ODP	39	0.2%	45	0.3%

Where are the errors being made?

Table 16

	ZT (92 SITES)		NOT ZT (100 SITES)	
	N	%	n	%
Inpatient ward	5093	30%	4039	25%
A& E / Emergency Dept	2985	18%	3376	21%
Outpatient / Pre-Op clinic	2217	13%	2475	15%
Community	2382	14%	1897	12%
Delivery suite	1271	8%	1616	10%
Medical Assessment Unit (or similar)	650	4%	722	4%
Day ward	669	4%	643	4%
Intensive care/HDU	583	3%	380	2%
Unknown	390	2%	509	3%
Paediatric ward or similar	269	2%	305	2%
Neonatal unit	137	1%	143	1%
Theatres/Recovery	114	1%	145	1%

When were the samples taken?

Table 17

	ZT (92 SITES)		NOT ZT (100 SITES)	
	N	%	n	%
Core hours	11656	69%	11009	68%
Out of hours	4655	28%	4507	28%
Not stated	531	3%	769	5%

What data was missing from the sample tube?

Table 18

	ZT (92 SITES)		NOT ZT (100 SITES)	
	N	%	n	%
Core patient identifier(s) don't match on tube and form	7391	44%	6214	38%
Core patient identifier(s) missing from tube	3625	21%	3980	24%
Other required details missing from form	966	6%	1306	8%
Core patient identifier(s) missing from form	1171	7%	1124	7%
Pre-printed label on tube	1090	6%	1006	6%
Other required details missing from tube	844	5%	1130	7%
Sample rejected by system because information was incorrect	669	4%	537	3%
Unlabelled tube or form	423	3%	489	3%
Other required details don't match on tube and form	317	2%	467	3%
Illegible details on tube or form	319	2%	339	2%
Details overwritten	409	2%	124	1%

ZT 16867, NOT ZT 16343 total rejected samples were taken as denominator for the percentages.

RESULTS: REASONS WHY ERRORS WERE MADE (FOLLOW-UP)

YOUR SITE DID FOLLOW UP ERRORS, AND 28 errors(s) were followed up

Please note that during the 'data cleaning' phase of this audit it was found that some sites had included cases in their follow-up dataset for which they were unable to locate the health professional who had made the error. These cases were excluded from the analysis of follow-up data.

Introduction

Sites were asked to follow-up a maximum of 3 errors per week during the audit period to try to establish what behaviours or work system features were leading to the errors. In total, 222 sites contributed data on 5330 errors.

The tables and analysis below only refer to the 5330 errors that were followed up. For a description of all the rejected samples, please see the previous section.

In the follow-up samples who is making the errors?

Table 19

	National (5330)		Your site	
	n	%	n	%
Doctor	1862	35%	20	71%
Nurse	1613	30%	2	7%
Midwife	715	13%	3	11%
Phlebotomists	546	10%	3	11%
Healthcare Assistant	341	6%	0	0%
Community midwives	244	5%	0	0%
ODA/ODP	9	0.2%	0	0%

Where were the samples taken that were followed up?

Table 20

	National (5330)		Your site	
	n	%	n	%
Inpatient ward	1683	32%	17	61%
Outpatient / Pre-Op clinic	988	19%	2	7%
A& E / Emergency Dept	839	16%	4	14%
Community	415	8%	0	0%
Day ward	391	7%	0	0%
Delivery suite	390	7%	2	7%
Medical Assessment Unit (or similar)	248	5%	2	7%
Intensive care/HDU	182	3%	0	0%
Paediatric ward or similar	80	2%	0	0%
Theatres/Recovery	69	1%	1	4%
Neonatal unit	44	1%	0	0%
Unknown	1	0.2%	0	0%

Analysis by grade of staff taking the sample by where the sample was taken

Table 21

	Grade of staff taking the sample							
Where was the blood sample taken?	Doctor	Nurse	Midwife	Community midwife	Health Care Assistant	Phlebotomist	ODA/ ODP	Total
A & E / Emergency Department	473	313	0	0	46	7	0	839
Medical Assessment Unit (or similar)	119	89	11	2	22	4	1	248
Intensive Care Unit / HDU	47	131	1	0	0	3	0	182
Theatres / Recovery	53	10	1	0	2	0	3	69
Outpatient clinic / Pre-Op clinic	83	268	162	44	129	302	0	988
Neonatal Unit	32	9	2	0	0	1	0	44
Paediatric ward or similar	48	29	2	0	1	0	0	80
Inpatient Ward	880	460	98	1	70	173	1	1683
Day ward	57	224	40	5	44	18	3	391
Delivery suite	51	5	316	13	3	1	1	390
Community	19	74	82	179	24	37	0	415
Blank=missing	0	1	0	0	0	0	0	1
Total	1862	1613	715	244	341	546	9	5330

What data was missing from the sample tube?

Table 22

	National (5330)		Your site	
	n	%	N	%
Core patient identifier(s) don't match on tube or form	2123	40%	3	11%
Core patient identifier(s) missing from tube	1242	23%	11	39%
Pre-printed label on tube	369	7%	0	0%
Other required details missing from tube	387	7%	5	18%
Other required details missing from form	343	6%	5	18%
Core patient identifier(s) missing from form	328	6%	9	32%
Sample rejected by system because information was incorrect	267	5%	0	0%
Unlabelled tube or form	196	4%	2	7%
Other required details don't match on tube and form	171	3%	0	0%
Details overwritten	90	2%	0	0%
Illegible details on tube or form	99	2%	1	4%

NB: none of the above was stated for 3 cases

For 5% (259/5330) of rejected samples there were two or more reasons for rejecting the sample. These comprised 234 with two, 22 with three, 2 with four and 1 with five.

What were the reasons for making the errors?

Table 23

	National (5330)		Your site	
	n	%	n	%
Transcription error (copied information wrongly)	1755	33%	3	11%
Was interrupted or distracted	1265	24%	13	46%
Did not label at patient's side	490	9%	4	14%
Was unaware of some / all of the procedure	475	9%	0	0%
Copied details from something other than the patient's wristband	448	8%	4	14%
Knew I should sign tube or form but forgot	439	8%	10	36%
Did not check patient ID	315	6%	0	0%
Did not know that the information was needed	227	4%	0	0%
Patient was not wearing a form of ID	166	3%	0	0%
Asked someone else to label the sample / Labelled the sample for someone else	155	3%	0	0%
Unable to label the sample at the patient's side	142	3%	0	0%
Information needed to complete the labelling was not available	72	1%	0	0%
Put wrong sticky label on request form	45	1%	0	0%
Was told that the missing information was not needed/not important	19	0.4%	0	0%
Other	603	11%	2	7%

For 20% (1041/5330) of rejected samples there were two or more reasons given for the error(s). These comprised 718 with two, 262 with three, 49 with four, and 11 with five and 1 with six.

Other reasons given for making errors

- 125 responses cited being busy as a contributory factor, and 7 tiredness.
- Lack of training was mentioned in 12 responses.
- On 23 occasions the errors appeared to involve an element of patient ID on the form or tube that would not be considered to be a core requirement.
- 17 respondents stated that there were multiple records for the patient or that ID was wrong on the PAS system. Three errors were related to the failure of an electronic system normally used for labelling.
- There were 21 cases where handwriting was stated to be illegible. One sampler had large handwriting, 2 respondents blamed very small paediatric bottles, another thought their writing was perfectly legible and that the transfusion laboratory was being obstructive. One simply stated "it's the way I write".
- Other reasons included a baby not having a name at the time of sampling (2), the need to label a sample taken at night at a lighter place, and a community sample taken in a very dirty house, and where the sampler felt the need to leave as soon as possible.

- Additional comments, suggesting less than perfect practice, were that a sampler "poked their pen through the sample bottle to label it", and that a respondent had their card taken by another staff member in order to permit (? electronic) labelling. There was evidence of deliberate violation, including the comments "it's what we do here if not caught by the TP" and "private patient ..... sampler was told not to use patient's NHS number because (of worries) that the surgery would be charged.
- Although patient empowerment should be encouraged, 5 respondents commented that the patient had given wrong ID: "checked with patient who did not point out surname was wrongly spelt".
- There were 2 WBITs: One respondent stated: "I did not follow procedure. On investigation samples labelled with those of another patient in the close observation bay. Could not explain what she had done as said it had been very busy but could not have labelled samples at bedside after checking wristband." The other commented "Was unable to bleed 1st patient who went straight to theatres. Bled 2nd patient and labelled sample by patient. Thought had checked label but the label did not match the form which I sent to lab. It was the label for the 1st patient. Did not check tube against form and patient ID."

Had the person taking the blood sample been competency assessed?

Table 24

	National (5330)		Your site	
	n	%	n	%
Yes	3409	64%	**26**	**93%**
No	1168	22%	**0**	**0%**
Don't know	753	14%	**2**	**7%**

Table 25 - Regional variation

	National (5330)		Competency assessed (%)		
	sites	samples	Yes	No	Don't know
• East Midlands	11	274	60	34	6
• East of England	15	329	78	14	9
• London	35	879	55	25	20
• North East	13	329	74	14	12
• North -West incl N Wales	38	788	72	16	12
• Northern Ireland	6	165	97	2	1
• Scotland	13	340	38	37	25
• South Central	7	191	46	28	26
• South East Coast	16	325	67	20	13
• South West	16	315	60	24	16
• (Rest of) Wales	14	447	61	28	11
• West Midlands	18	529	64	24	13
• Yorkshire & Humber	19	411	72	15	13
• Not known	1	8	88	0	13
TOTAL	**222**	**5330**	**64**	**22**	**14**

Table 26 - Who took the sample?

	National (5330)		Competency assessed (%)		
	sites	samples	Yes	No	Don't know
• Doctor	204	1862	49	31	20
• Nurse	202	1613	72	17	12
• Midwife	148	715	69	18	13
• Phlebotomists	148	244	82	13	5
• Healthcare Assistant	121	341	73	17	10
• Community midwives	61	546	62	24	14
• ODA/ODP	7	9	56	22	22
TOTAL	**222**	**5330**	**64**	**22**	**14**

Table 27 - Where the sample was taken?

	National (5330)		Competency assessed (%)		
	sites	samples	Yes	No	Don't know
• A & E / Emergency Department	160	839	54	28	18
• Medical Assessment Unit (or similar)	105	248	62	27	11
• Intensive Care Unit / HDU	102	182	58	24	18
• Theatres / Recovery	51	69	48	32	20
• Outpatient clinic / Pre-Op clinic	188	988	75	15	10
• Neonatal Unit	34	44	61	23	16
• Paediatric ward or similar	46	80	50	21	29
• Inpatient Ward	206	1683	63	22	15
• Day ward	140	391	75	15	9
• Delivery suite	121	390	73	17	10
• Community	87	415	53	31	15
TOTAL	**222**	**5330**	**64**	**22**	**14**

Table 28 - Comparison of reasons for rejecting sample by healthcare groups:

Results are given as % of number of rejected samples	Who took sample								
	Doctor	Nurse	Midwife	Community midwife	Health Care Assistant	Phlebotomist	ODA/ ODP	Total	
Number of sites	204	202	148	61	121	148	7	222	
Number of rejected samples	1862	1613	715	244	341	546	9	5330	P value*
• Core patient identifier(s) don't match on tube or form	36	40	46	40	48	40	22	40	<0.001
• Core patient identifier(s) missing from tube	23	23	22	23	21	28	44	23	0.10
• Pre-printed label on tube	8	8	6	5	4	4	11	7	<0.001
• Other required details missing from tube	8	8	6	6	7	6	11	7	0.31
• Other required details missing from form	7	7	3	4	6	7	0	6	0.002
• Core patient identifier(s) missing from form	8	6	6	4	5	5	11	6	0.01
• Sample rejected by system because information was incorrect	5	3	6	13	6	4	0	5	<0.001
• Unlabelled tube or form	4	3	3	5	3	2	11	4	0.22
• Other required details don't match on tube and form	3	4	3	2	4	4	0	3	0.61
• Details overwritten	2	1	1	2	1	2	0	2	0.10
• Illegible details on tube or form	3	1	1	1	1	3	11	2	0.003

* excluding ODA/ODP

Guidance on how to interpret table 28 and the following tables:

An example of how to read this table above and subsequent tables: There were 1862 rejected samples from doctors taking samples. The data for these 1862 cases came from 204 sites. For 36% of the 1862 the reason for rejecting the sample from doctors was because the core patient identifier(s) don't match on tube or form; for 23% the core patient identifier(s) were missing from tube; and so on. If we want to compare health professional groups we need to look along each row and compare the rejection rates. For example, pre-printed label on tube rejection rates range from 4% with health care assistants and phlebotomists to 8% for doctors and nurses. The P values in the last column indicate whether or not the variation in rates between health professionals can be regarded as statistically significant. Note that occasionally there was more than one reason for a sample being rejected and that is why the column percentages can sum to more than 100%.

Table 29 - Comparison of reasons for rejecting sample by where sample was taken

Results are given as % of number of rejected samples	Where sample was taken												
	A&E	MAU	ICU /HDU	Theatres /recovery	Outpatient /pre-op	Neonatal	Paediatric	Inpatient	Day ward	Delivery	Community	Total	
Number of sites	160	105	102	51	188	34	46	206	140	121	87	222	
Number of rejected samples	839	248	182	69	988	44	80	1683	391	390	415	5330	P value
• Core patient identifier(s) don't match on tube or form	33	37	41	26	43	32	28	43	46	48	28	40	<0.001
• Core patient identifier(s) missing from tube	24	24	16	22	26	14	21	21	22	20	35	23	<0.001
• Pre-printed label on tube	10	8	9	4	4	7	21	6	6	5	10	7	<0.001
• Other required details missing from tube	10	6	7	16	7	2	9	7	5	6	6	7	<0.001
• Other required details missing from form	6	4	12	16	5	16	6	7	6	4	5	6	<0.001
• Core patient identifier(s) missing from form	7	8	4	6	5	7	6	6	6	7	7	6	0.54
• Sample rejected by system because information was incorrect	3	4	3	4	4	11	4	5	7	6	9	5	0.001
• Unlabelled tube or form	6	4	3	3	3	7	0	3	4	3	3	4	0.01
• Other required details don't match on tube and form	3	3	5	6	4	2	5	4	2	3	1	3	0.21
• Details overwritten	2	3	1	0	1	2	4	2	1	1	1	2	0.27
• Illegible details on tube or form	3	3	2	1	2	2	1	2	1	1	1	2	0.28

Table 30 - Comparison of reason for rejecting sample by who took the sample and by where the sample was taken (see key below):

Results are given as % of number of rejected samples	Who took sample and where (10 Main groups)												
	A	B	C	D	E	F	G	H	I	J	Others	Total	
Number of sites													
Number of rejected samples	880	473	460	316	313	302	268	224	179	173	1742	5330	P value
• Core patient identifier(s) don't match on tube or form	41	30	42	51	35	38	47	43	34	48	39	40	<0.001
• Core patient identifier(s) missing from tube	21	26	23	19	22	32	24	22	27	19	23	23	0.005
• Pre-printed label on tube	6	10	7	4	11	4	5	6	5	1	8	7	<0.001
• Other required details missing from tube	7	11	7	6	10	5	7	7	7	8	7	7	0.08
• Other required details missing from form	9	5	7	3	8	6	8	6	4	7	6	6	0.09
• Core patient identifier(s) missing from form	7	9	5	8	5	7	3	8	4	2	6	6	0.03
• Sample rejected by system because information was incorrect	5	4	3	6	3	2	3	5	16	7	5	5	<0.001
• Unlabelled tube or form	3	6	3	3	6	4	2	4	4	0	4	4	0.005
• Other required details don't match on tube and form	3	2	4	2	3	4	3	2	2	3	4	3	0.58
• Details overwritten	2	3	2	1	1	2	1	0	2	2	1	2	0.18
• Illegible details on tube or form	2	3	1	0.3	3	2	1	1	1	4	2	2	0.02

NB: these 10 combinations of who and Where comprise two-thirds (67%, 3588/5330) of rejected samples

KEY:
A. Inpatient ward, Doctor
B. A&E, Doctor
C. Inpatient ward, Nurse
D. Delivery suite, Midwife
E. A&E, Nurse
F. Outpatient/pre-op, Phlebotomist
G. Outpatient/pre-op, Nurse
H. Day ward, Nurse
I. Community, Community midwife
J. Inpatient ward, Phlebotomist

Table 31 - Comparison of reason given for error by who took the sample

Results are given as % of number of rejected samples	Who took sample								
	Doctor	Nurse	Midwife	Community midwife	Health Care Assistant	Phlebotomist	ODA/ ODP	Total	
Number of sites	204	202	148	61	121	148	7	222	
Number of rejected samples	1862	1613	715	244	341	546	9	5330	P value*
• Transcription error (copied information wrongly)	30	33	33	35	38	40	22	33	<0.001
• Was interrupted or distracted	20	27	26	25	23	22	0	24	<0.001
• Did not label at patient's side	15	6	10	7	6	1	0	9	<0.001
• Was unaware of some / all of the procedure	11	9	6	9	5	8	22	9	<0.001
• Copied details from something other than the patient's wristband	10	8	6	8	10	7	0	8	0.02
• Knew I should sign tube or form but forgot	8	8	7	9	8	9	11	8	0.76
• Did not check patient ID	7	3	9	11	7	3	11	6	<0.001
• Did not know that the information was needed	6	4	1	2	4	3	0	4	<0.001
• Patient was not wearing a form of ID	2	2	3	8	8	3	0	3	<0.001
• Asked someone else to label the sample / Labelled the sample for someone else	3	3	4	4	2	1	11	3	0.003
• Unable to label the sample at the patient's side	3	1	6	5	3	0.4	0	3	<0.001
• Information needed to complete the labelling was not available	1	1	1	2	1	2	0	1	0.14
• Put wrong sticky label on request form	1	1	1	1	0.3	1	0	1	0.61
• Was told that the missing information was not needed/not important	0.4	0.4	0.3	0.4	0	0.4	0	0.4	0.90
• Other reason	11	11	15	7	12	10	22	11	0.02

*excluding ODA/ODP

Table 32 - Comparison of reason given for error by where sample was taken

Results are given as % of number of rejected samples	Where sample was taken												
	A&E	MAU	ICU /HDU	Theatres /recovery	Outpatient /pre-op	Neonatal	Paediatric	Inpatient	Day ward	Delivery	Community	Total	
Number of sites	160	105	102	51	188	34	46	206	140	121	87	222	
Number of rejected samples	839	248	182	69	988	44	80	1683	391	390	415	5330	P value
• Transcription error (copied information wrongly)	26	31	30	25	40	23	28	35	36	31	29	33	<0.001
• Was interrupted or distracted	24	29	20	19	27	32	15	21	24	29	20	24	0.001
• Did not label at patient's side	12	13	10	10	5	7	15	11	10	11	1	9	<0.001
• Was unaware of some / all of the procedure	12	8	13	16	5	11	9	9	4	6	17	9	<0.001
• Copied details from something other than the patient's wristband	8	10	9	6	8	5	11	9	8	7	5	8	0.32
• Knew I should sign tube or form but forgot	9	8	10	13	9	11	15	8	8	6	7	8	0.22
• Did not check patient ID	4	7	6	1	5	7	6	7	10	6	3	6	0.002
• Did not know that the information was needed	4	5	4	14	3	7	3	4	5	2	9	4	<0.001
• Patient was not wearing a form of ID	4	2	1	0	7	0	4	1	4	1	5	3	<0.001
• Asked someone else to label the sample / Labelled the sample for someone else	3	4	5	13	1	4	9	2	2	6	3	3	<0.001
• Unable to label the sample at the patient's side	2	4	3	0	3	2	6	3	5	3	0	3	0.002
• Information needed to complete the labelling was not available	2	1	0	0	1	0	3	1	1	2	3	1	0.10
• Put wrong sticky label on request form	1	0.4	0.5	0	1	0	4	1	1	1	0.5	1	0.34
• Was told that the missing information was not needed/not important	0.4	0.8	0	0	0.2	0	1.3	0.4	0.3	0.5	0.5	0.4	0.91
• Other reason	13	9	13	9	9	4	15	11	11	14	13	11	0.009

Table 33 - Comparison of reason given for error by who took the sample and by where the sample was taken

Results are given as % of number of rejected samples	Who took sample and where (10 Main groups)												
	A	B	C	D	E	F	G	H	I	J	Others	Total	
Number of rejected samples	880	473	460	316	313	302	268	224	179	173	1742	5330	P value
• Transcription error (copied information wrongly)	34	26	33	32	27	41	40	37	36	42	31	33	<0.001
• Was interrupted or distracted	20	20	25	30	30	26	31	29	26	19	22	24	<0.001
• Did not label at patient's side	15	14	6	10	9	0.3	4	5	2	2	10	9	<0.001
• Was unaware of some / all of the procedure	10	14	9	5	10	5	4	4	9	6	10	9	<0.001
• Copied details from something other than the patient's wristband	10	9	9	8	8	6	8	8	8	10	8	8	0.59
• Knew I should sign tube or form but forgot	8	9	7	6	9	8	12	8	11	10	8	8	0.47
• Did not check patient ID	7	5	5	5	2	3	3	3	4	5	8	6	<0.001
• Did not know that the information was needed	6	6	3	1	2	2	3	4	3	2	5	4	0.001
• Patient was not wearing a form of ID	1	4	1	1	4	5	6	1	6	0	4	3	<0.001
• Asked someone else to label the sample / Labelled the sample for someone else	2	2	2	4	4	0.3	1	2	4	1	4	3	0.001
• Unable to label the sample at the patient's side	3	1	2	3	3	0	1	1	0	1	5	3	<0.001
• Information needed to complete the labelling was not available	1	2	0.4	3	2	4	1	0.4	3	0	1	1	0.001
• Put wrong sticky label on request form	1	1	1	1	1	0.3	1	2	1	1	0.5	1	0.48
• Was told that the missing information was not needed/not important	0.3	0.6	0.4	0.6	0	0.3	0	0.4	0.6	0.6	0.3	0.4	0.92
• Other reason	10	13	12	14	13	12	7	12	9	9	12	11	0.15

NB: these 10 combinations of who and Where comprise two-thirds (67%, 3588/5330) of rejected samples

KEY:
A. Inpatient ward, Doctor
B. A&E, Doctor
C. Inpatient ward, Nurse
D. Delivery suite, Midwife
E. A&E, Nurse
F. Outpatient/pre-op, Phlebotomist
G. Outpatient/pre-op, Nurse
H. Day ward, Nurse
I. Community, Community midwife
J. Inpatient ward, Phlebotomist

Table 34 - Reason given for error by (only) reason for rejection (n=5068). Main Table excludes those 5% of cases with more than one reason for rejecting and 3 cases with no reason stated. There could be more than one reason given for the error.

Results are given as % of number of rejected samples	Core patient identifier(s) don't match on tube or form	Core patient identifier(s) missing from tube	Pre-printed label on tube	Other required details missing from tube	Other required details missing from form	Core patient identifier(s) missing from form	Sample rejected by system because information was incorrect	Unlabelled tube or form	Other required details don't match on tube and form	Details overwritten	Illegible details on tube or form	Total	Multiple reasons for rejecting
Number of rejected samples	2043	1082	350	334	290	219	249	186	159	77	79	5068	259
• Transcription error (copied information wrongly)	62	13	1	5	2	17	40	1	50	32	13	33	25
• Was interrupted or distracted	18	34	17	20	24	33	13	61	21	21	5	24	22
• Did not label at patient's side	10	10	4	3	5	3	10	15	10	12	14	9	11
• Was unaware of some / all of the procedure	2	8	60	2	8	8	5	10	5	14	15	9	15
• Copied details from something other than the patient's wristband	11	6	0	1	0.3	2	31	1	10	19	3	8	14
• Knew I should sign tube or form but forgot	0.3	5	3	56	41	4	0	8	2	0	0	8	13
• Did not check patient ID	7	5	0.3	1	3	5	22	2	7	5	8	6	8
• Did not know that the information was needed	1	9	2	10	11	7	0	2	0	1	0	4	8
• Patient was not wearing a form of ID	3	3	1	1	1	2	10	0	2	1	0	3	6
• Asked someone else to label the sample / Labelled the sample for someone else	2	3	5	1	2	3	4	5	9	4	0	3	5
• Unable to label the sample at the patient's side	4	4	1	1	1	0	1	3	3	1	6	3	2
• Information needed to complete the labelling was not available	0.5	2	0.3	1	1	2	2	1	0	1	0	1	9
• Put wrong sticky label on request form	1	0	3	0	0	2	1	1	1	0	0	1	0.4
• Was told that the missing information was not needed/not important	0.3	1	1	1	0	0	0	0	1	0	0	0.3	1
• Other reason	8	17	11	7	12	19	4	14	8	8	33	11	14

Note that although there might only be one reason for rejecting samples in the main body of this table there could be multiple errors made and hence the column percentages will often exceed 100%. Error rates in excess of 20% are highlighted.

DISCUSSION

This clinical audit had three sections. First, an organisational audit examined policy on the collection and labelling of blood samples for transfusion. Second, the rate of sample rejection (mislabelling) was collected within large populations. Job title, clinical area and nature of labelling error were collected for 38510 samples. Third, hospitals were asked to collect detailed information about a smaller number (5330) of errors, to ascertain the reasons for error.

ORGANISATIONAL SURVEY

Rejection Policies, "Zero Tolerance", and alterations

Organisational questionnaire data were available for 221 sites. There were three standards defined for the organisational audit. All were compliant with the standard **1**, that they should have a policy for the taking of blood samples for transfusion purposes, and all but one (99.5%) had a policy that covered the rejection of mislabelled samples (standard **2**). Despite this high compliance rate, we considered that 26 rejection policies (12%) were not appropriate, as they could be considered to be lax. Eighteen sites permitted someone other than the sample taker to changes on the sample label. Ten sites permitted multiple changes, including two of the 18 sites

Our results also showed that 50/221 (23%) sites were not compliant with standard **3** as, although they stated that they had a zero tolerance policy, implying that no errors or alterations to sample tube or request were acceptable, they stated that they would allow alterations, albeit in most cases in precious or unrepeatable samples. The effect of carrying out a true ZT policy on rejection rates is discussed in the following section.

CLINICAL AUDIT

Mislabelling rates and number of Miscollected (WBIT) samples

A total of 99 WBITs were reported during the study period. A WBIT rate could not be derived as no data on the number of repeat samples from participating sites, which would be necessary to calculate the rate [(2),(3)], were available.

The total number of rejected samples was 38,570 from 220 sites. The rejection rate can only be calculated using data from the 134 sites that also supplied total transfusion sample figures for the period, giving a figure of 25279/845445, 2.99%. (95% CI: 2.95-3.03).Equivalent figures from four studies of similar size are are3.2%, 0.6%, 6.45%and 3.8% respectively [(2),(3),(4),(10)] .

The effect of a ZT policy

Sample rejection rates for sites that operated a true ZT policy were very slightly higher to those that did not (3.08%, (95% CI: 3.03-3.14). vs. 2.94% (95% CI: 2.88-2.99)). A ZT policy has been recommended by BCSH [(8)] and operation of a strict unequivocal labelling policy would eliminate poor practice as regards amending samples, (as shown in answers to questions 5-8).

Laboratory data collection

The commonest reason for rejection was the failure of core ID to match on tube and form (15946 samples, 41% of rejected samples) or missing core ID from the sample tube (8678 samples, 22%). BCSH guidelines state that the 4 core identifiers, plus date of sampling, are essential for specimen acceptance [(8)].

Many authorities would consider that the sample tube should also contain the signature of the person taking the sample, as this is considered an indication of responsibility [8]. It is a requirement of the National Patient Safety Agency, which also advises that patient gender should be recorded on the sample label [11]. Our audit shows that in 14612 samples (38%), the identity of the person taking the sample was "unknown", i.e. absent, illegible or not recognised by the laboratory. The value of the signature on the tube is therefore not proven and we have not included this as a standard. Many sites may wish to enforce this in their local policy, but they might also consider whether it would be more useful to make it a mandatory requirement for the sampler to print their name, job title and contact details and provide their signature on the request form, where such details may be more easily (and legibly) written.

The audit data also shows that about 15% of samples were rejected because of absent or incorrect data other than the core ID. There is evidence from wider clinical practice that restricting mandatory requirements to the minimum will lead to better compliance [12]. Sites should assess the clinical value of extending their rejection policy beyond the minimum set out by BCSH, and balance this against the cost of taking repeat samples, and potential delays in treating the patient concerned.

Further analysis of responsible staff is limited by the large number of unknowns (14612/38112, 38%). If we assume the identities of the unknown are distributed in similar proportion to those known then the results suggest that doctors are the staff group most responsible for mislabelling errors (8410 samples, 36%), then nurses (24%) and then midwives (18%). It is noteworthy that phlebotomists, who probably take most blood in hospitals, are responsible for a smaller number of errors (1883, 8%). If we do not accept the above assumption about the unknowns then all that can be inferred is that at least 22% of errors were made by doctors, at least 15% from nurses, at least 11% from midwives and at least 5% from phlebotomists. We cannot estimate error rates for each staff group because we lack denominator data nationally for the percentage of blood samples taken by each staff group; and at the local level these proportions can vary considerably between sites.

Sixty-eight percent of samples were taken in core hours, as determined by reporting sites. The clinical areas where errors occurred most frequently were inpatient wards (28%), emergency departments (19%), outpatients/pre-op (14%), community (13%) and delivery suite (9%). Only 1% of errors occurred in operating theatres or neonatal units; 2% in paediatric wards 3% in ITU/HDU. However, the total number of transfusion samples in these areas may be low.

Reasons for rejection, location, timing and job title of the member of staff responsible were compared for the ZT and non-ZT sites. ZT sites were more likely to cite non-matching core ID on sample and form as a reason for rejection than non-ZT sites (44% vs. 38%), but the significance of this is unclear, as is the finding that more errors occurred in patient wards in ZT compared to non-ZT sites (30% vs. 25%) The distribution of job titles, and the time samples were taken, was very similar in both groups.

It was not possible for participating sites to follow up all errors, so they were asked to perform detailed follow up of 3 errors per week during the survey period. Data were received on a total of 5330 follow-ups. The clinical area, reason for rejection and the range of job titles of the sampler contacted for follow up was similar to those in the laboratory data. This part of the audit was valuable in examining reasons given for why errors were committed.

The most frequently reported contributory factor was transcription error, reported in a third of all follow ups. Relevant data extracted from an assessment of the cost implications of miscollected samples suggests a cost for each mislabelled sample of £19 [13], and the total number of such samples in our audit (38570 from 220 sites over 3 months) would result in an annual cost of nearly £3 million for these sites. This figure could be balanced against the cost of any system put in place to reduce transcription errors.

Other factors that were frequently reported were interruption or distraction, labelling away from the patient's side, copying the sample tube from something other than the patient ID and unfamiliarity with the procedure. Follow up data showed that only 49% of doctors who made errors had been competency assessed, compared to 82% of phlebotomists who made errors, and 72% of nurses and 69% of midwives. Additional reasons given are described on pages 25 and 26 of this report, and include some interesting vignettes.

What can be put in place to improve practice?
Transcription errors appear to be the commonest problem for all staff groups, and any system that can be introduced to reduce these should be welcomed. Electronic systems would seem to be ideal, but our follow up of errors included several where the system requires samples to be labelled away from the patient's side. Compliance with labelling requirements may be improved if there was a national standard for transfusion sample bottle labels.

When labelling is performed away from the patient, it necessarily involves using information other than ID attached to the patient or verbal confirmation by the patient themselves. In addition, it is likely the labeller is more open to distraction, another major factor cited as a cause for errors.

The introduction of training and competency assessment for all staff involved in the transfusion process has had major resource implications for all hospital transfusion departments. Follow up of errors shows that not all staff groups have been appropriately trained and competency assessed, doctors being the least likely to have been trained, and the staff group most likely to label transfusion samples erroneously. Many respondents cited unfamiliarity with procedures as a reason for error. Application of national recommendations for sample labelling and acceptance across hospital laboratories will lead to consistency of practice and contribute to an improvement in patient safety. These standards should also be applied to blood service reference laboratories.

REFERENCES

1. British Committee for Standards in Haematology, 2012. Guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories http://www.bcshguidelines.com/documents/Compat_Guideline_for_submission_to_TTF_011012.pdf

2. Murphy MF, Stearn BE and Dzik WH (2004) Current performance of patient sample collection in the UK *Transfusion medicine,* **14,** 113-121

3. Dzik WH, Murphy MF, Andreu G, Heddle N, Hogman, C, Kekomaki R, Murphy S, Shimizu M & Smit-Sibinga CT (2003) An international study of the performance of sample collection from patients *Vox Sanguinis,* **85,** 40-47

4. Gonzales-Porras JR, Graciani IF, Alvarez M, Pinto I, Conde MP, Nieto MJ & Corral M (2008) Tubes for pre-transfusion testing should be collected by blood bank staff and hand labelled until the implementation of new technology for improved sample labelling. Results of a prospective study*Vox Sang,* **95**, 52-56

5. Koh MBC & Alcantara R (2009) Transfusion errors and management. *ISBT Science Series,* **4,** 216-220

6. Sazama K (1990) Reports of 355 transfusion-associated deaths: 1976 through 1985 *Transfusion,* **30,** 583-590

7. Stainsby D, Russell J, Cohen, H & Lilleyman, J (2005) reducing adverse events in blood transfusion *Brit J Haematol,* **131,** 8-12

8. British Committee for Standards in Haematology (2009) Guideline on the administration of blood components http://www.bcshguidelines.com/documents/Admin_blood_components_bcsh_05012010.pdf

9. NHS Operational Impact Group (2005) Outline specification for a quality management system for hospital blood banks http://www.transfusionguidelines.org.uk/Index.aspx?Publication=REGS&Section=23&pageid=416

10. Taylor C (ed), Cohen H, Mold D, Jones H, et al on behalf of the Serious Hazards of Transfusion (SHOT) Steering Group. (2009) Near Miss reporting *in* The 2008 Annual SHOT Report http://www.shotuk.org/wp-content/uploads/2010/03/SHOT-Report-2008.pdf

11. National Patient Safety Agency (2009) Right patient right blood: advice for safer blood transfusions http://www.nrls.npsa.nhs.uk/resources/?entryid45=59805

12. Amalberti R, Vincent C, Auroy Y, de Saint Maurice G (2006) Violations and migrations in health care: a framework for understanding and management *Qual Saf Health Care*, **15(S1)** i66-i71

13. Kolsteren K (2012) Save a minute or lose a life (poster abstract, p20) http://www.shotuk.org/wp-content/uploads/2010/07/SHOT-2012-Poster-abstracts-booklet.pdf

APPENDIX ONE – ORGANISATIONAL AUDIT TOOL

1. Does your hospital have a policy that covers the taking of blood samples for transfusion? Yes No

2. Does your laboratory have an SOP that covers the rejection of mislabelled samples? Yes No

3. Regardless of whether you have a policy or not, which of these options best describes your practice? :

a) We operate "Zero Tolerance", which means that no amendments or additions are allowed and all mislabelled samples are rejected and none are held or processed.

b) Laboratory allows addition or correction of information and then processes the sample.

c) Laboratory only holds "precious samples", such as those from neonates and allows addition or correction of information and then processes sample.

d) Other, please state:

3. If your practice allows for the addition or amendment of information, what is allowed? *(Tick which items are allowed to be added or amended on either the bottle or the form)*

Identifier	No change allowed	Change allowed on tube	Change allowed on request form
First name			
Last name			
ID number			
Date of birth			
Gender			
Clinical area			
Date of sample			
Time of sample			
Name of person taking sample			
Clinical details / Indication for transfusion			
Other			

4. If you allow additions or amendments, who is allowed to make them?

a) The person who collected the blood sample? Yes No

b) Someone authorised to do so by the person who collected the blood sample? Yes No

c) Anyone can make changes Yes No

d) Lab staff can make changes on behalf of the person who collected the blood sample? Yes No

5. Does your practice differ depending if the sample is for Group & Save or Group & Crossmatch? Yes No

5a) If yes, how does it differ?

Putting information on blood sample tubes

6. Which of the following labelling options reflects your usual practice? (*Tick as many as apply)*:

a) Sample tube labels are handwritten at the patient's side

b) Sample labels are printed at the patient's side and labels applied to the sample tube

c) Pre-printed labels are used

Putting information on blood request forms

7. Which of the following labelling options reflects your usual practice? (*Tick as many as apply)*:

a) Request forms are handwritten

b) Labels that are printed at the patient's side are attached to the request form

c) Pre-printed labels are attached to the request form

d) A request form is printed and sent with the sample tube

e) No request form is used – electronic ordering is in operation

8. What is your job title?

a) Transfusion Laboratory Manager

b) Transfusion Practitioner

c) Quality Manager/ Co-ordinator

d) Blood Services Manager

e) Other, please state

APPENDIX TWO – LABORATORY AUDIT PROFORMA

Date this sheet was started	Sample number											Totals
		1	2	3	4	5	6	7	8	9	10	
Who took the blood sample?	Doctor											
	Nurse											
	Midwife											
	Community midwife											
	Health Care Assistant											
	Phlebotomist											
	ODA/ODP											
	Unknown											
Where was the blood sample taken?	A & E / Emergency Department											
	Medical Assessment Unit (or similar)											
	Intensive Care Unit / HDU											
	Theatres / Recovery											
	Outpatient clinic / Pre-Op clinic											
	Neonatal Unit											
	Paediatric ward or similar											
	Inpatient Ward											
	Day ward											
	Delivery suite											
	Community											
	Unknown											
When was the sample taken?	Core hours *(defined locally)*											
	Out of hours *(defined locally)*											
What was the reason for rejecting the sample?	Core patient identifier(s) missing from tube											
	Core patient identifier(s) missing from form											
	Core patient identifier(s) don't match on tube and form											
	Other required details missing from tube											
	Other required details missing from form											
	Other required details don't match on tube and form											
	Illegible details on tube or form											
	Unlabelled tube or form											
	Pre-printed label on tube											
	Details overwritten											

APPENDIX THREE – FOLLOW-UP AUDIT PROFORMA

Write sample number here

Record the details below from the information in the lab:

Grade of staff taking the sample:

Doctor	
Nurse	
Midwife	
Community midwife	
Health Care Assistant	
Phlebotomist	
ODA/ODP	

Other notes you may wish to make

Where was the blood sample taken?

A & E / Emergency Department	
Medical Assessment Unit (or similar)	
Intensive Care Unit / HDU	
Theatres / Recovery	
Outpatient clinic / Pre-Op clinic	
Neonatal Unit	
Paediatric ward or similar	
Inpatient Ward	
Day ward	
Delivery suite	
Community	

What was the reason for rejecting the sample?

Core patient identifier(s) missing from tube	
Core patient identifier(s) missing from form	
Core patient identifier(s) don't match on tube and form	
Other required details missing from tube	
Other required details missing from form	
Other required details don't match on tube and form	
Illegible details on tube or form	
Unlabelled tube or form	
Pre-printed label on tube	
Details overwritten	

Meet the person who took the blood sample, and show them the blood bottle and proforma (or scans if preferred), pointing out the reasons for the sample rejection. Then say:

1. Please talk me through what you did when you took this blood sample *(summarise here)*

Next, record the reason(s) for the sampling error:

☐ Transcription error – (copied information wrongly)

☐ Copied details from something other than patient's wristband

☐ Was told that the missing information was not needed/not important

☐ Did not know that the information was needed

☐ Knew I should sign tube or form but forgot

☐ Put wrong sticky label on request form

☐ Patient was not wearing a form of ID

☐ Did not label at the patient's side

☐ Was interrupted or distracted

☐ Was unaware of some / all the procedure

☐ Information needed to complete the labelling was not available

☐ Unable to label the sample at the patient's side

☐ Did not check patient ID

☐ Asked someone else to label the sample / Labelled the sample for someone else

☐ Other, please state

Finally, ask the person if they had been competency assessed and record their response:

Yes No Don't Know

APPENDIX FOUR – LIST OF PARTICIPATING SITES

Abertawe Bro Morgannwg
Addenbrooke's Hospital
Airedale NHS Foundation Trust
Alder Hey Children's Hospital
Alexandra Hospital
Altnagelvin Area Hospital
Antrim Area Hospital
Arrowe Park Hospital
Ashford and St Peters Hospitals NHS Foundation Trust
Auckland Hospital
Barnsley Hospital
Basildon and Thurrock University Hospitals NHS Foundation Trust
Bassetlaw Hospital
Bedford Hospital
Birmingham Heartlands Hospital
Birmingham Women's NHS Foundation Trust
Blackpool Teaching Hospitals NHS Foundation Trust
BMI The London Independent Hospital
Bolton NHS Foundation Trust
Borders General Hospital
Bradford Royal Infirmary
Bronglais District General Hospital
Broomfield Hospital
Burnley General Hospital
Calderdale Royal Hospital
Causeway Hospital
Central Manchester University Hospitals NHS Foundation Trust
Central Middlesex Hospital
Charing Cross Hospital
Chelsea and Westminster Hospital NHS Foundation Trust
Cheltenham General Hospital
Chesterfield Royal Hospital NHS Foundation Trust
Chorley and South Ribble Hospital
Christchurch & Christchurch Women's Hospitals
City Hospital Campus Nottingham
Colchester General Hospital
Conquest Hospital
Countess of Chester Hospital NHS Foundation Trust
County Hospital Hereford
Craigavon Area Hospital
Croydon University Hospital
Cumberland Infirmary
Daisy Hill Hospital
Darent Valley Hospital
Darlington Memorial Hospital
Dewsbury District Hospital
Dewsbury, Pontefract & Pinderfields combined
Diana, Princess of Wales Hospital
Doncaster Royal Infirmary
Dorset County Hospital NHS Foundation Trust
Dumfries and Galloway Royal Infirmary
Dunedin Hospital
Ealing Hospital
East Surrey Hospital
Eastbourne District General Hospital
Epsom Hospital
Fairfield General Hospital
Fairfield Independent Hospital
Foresterhill Site Aberdeen
Forth Valley Royal Hospital
Freeman Hospital Newcastle-upon-Tyne
Friarage Hospital
Frimley Park Hospital
Furness General Hospital
Gartnavel General Hospital
George Eliot Hospital
Glan Clwyd Hospital
Glangwili General Hospital
Glenfield Hospital
Gloster Royal & Cheltenham General
Gloucestershire Royal Hospital
Good Hope Hospital
Grantham and District Hospital
Great Ormond Street Hospital For Children NHS Foundation Trust
Great Western Hospitals NHS Foundation Trust
Guy's and St Thomas' NHS Foundation Trust
Halton General Hospital
Harefield Hospital
Harrogate and District NHS Foundation Trust
Hexham General Hospital
Hinchingbrooke Hospital
Homerton University Hospital

Huddersfield Royal Infirmary
Hull Royal Infirmary
Inverclyde Royal Hospital
James Paget University Hospital
Kent and Canterbury Hospital
Kettering General Hospital NHS Foundation Trust
King's Mill Hospital
Kingston Hospital
Leeds General Infirmary
Leicester General Hospital
Leicester Royal Infirmary
Leighton Hospital
Lewisham Healthcare NHS Trust
Lincoln County Hospital
Lister Hospital
Liverpool Heart and Chest NHS Foundation Trust
Liverpool Women's Hospital
London Bridge Hospital
Macclesfield District General Hospital
Maidstone Hospital
Manor Hospital Walsall
Medway NHS Foundation Trust
Milton Keynes Hospital
Nevill Hall Hospital
New Cross Hospital
Newark Hospital
NHS Fife
NHS Tayside
Noble's Hospital
Norfolk and Norwich University Hospitals NHS Foundation Trust
North Devon District Hospital
North Manchester General Hospital
North Middlesex University Hospital NHS Trust
North Tyneside General Hospital
Northampton General Hospital NHS Trust
Northern General Hospital
Northwick Park Hospital
Oswestry Orthopaedic Hospital
Oxford University Hospitals NHS Trust
Palmerston North Hospital
Papworth Hospital NHS Foundation Trust
Peterborough City Hospital
Pilgrim Hospital
Pinderfields and Pontefract Hospitals
Plymouth Hospitals NHS Trust
Poole Hospital
Portsmouth Hospitals NHS Trust
Prince Charles Hospital
Prince Philip Hospital
Princess of Wales Hospital
Princess Royal Hospital Telford
Princess Royal University Hospital Farnborough
Queen Elizabeth Hospital Birmingham
Queen Elizabeth Hospital Gateshead
Queen Elizabeth Hospital Woolwich
Queen Elizabeth The Queen Mother Hospital
Queen's Hospital Romford
Queen's Medical Centre Campus Nottingham
Ramsay Oaks Hospital
Ramsay Springfield Hospital
Rochdale Infirmary
Rotherham Hospital
Royal Albert Edward Infirmary
Royal Alexandra Hospital
Royal Berkshire NHS Foundation Trust
Royal Blackburn Hospital
Royal Brompton Hospital
Royal Derby Hospital
Royal Devon and Exeter NHS Foundation Trust
Royal Free Hampstead NHS Trust
Royal Glamorgan Hospital
Royal Gwent Hospital
Royal Hampshire County Hospital
Royal Hospital for Sick Children (Yorkhill)
Royal Lancaster Infirmary
Royal Marsden Chelsea
Royal Marsden Sutton
Royal National Orthopaedic Hospital
Royal Oldham Hospital
Royal Preston Hospital
Royal Shrewsbury Hospital
Royal Surrey County Hospital
Royal Sussex County Hospital
Royal United Hospital
Royal Victoria Infirmary Newcastle-upon-Tyne
Salford Royal Hospital
Salisbury NHS Foundation Trust
Scarborough General Hospital
Scunthorpe General Hospital
Sheffield Children's Hospital
Singleton Hospital
Solihull Hospital
South Tyneside District Hospital

South Warwickshire NHS Foundation Trust
South West Acute Hospital
Southampton General Hospital
Southend University Hospital
Southern General Hospital G
Southport and Formby District General Hospital
Spire Bristol Hospital
Spire Cardiff Hospital
Spire Gatwick Park Hospital
Spire Leicester Hospital
Spire Little Aston Hospital
Spire Norwich Hospital
Spire Parkway Hospital Solihull
Spire Regency Hospital
Spire Thames Valley Hospital
Spire Washington
St. Helier Hospital
St.Bartholomew's Hospital
St.George's Hospital
St.Helens Hospital
St.James's University Hospital
St.Mary's Hospital Isle of Wight
St.Mary's Hospital Paddington
St.Richard's Hospital
Stafford Hospital
Stockport NHS Foundation Trust
Stoke Mandeville Hospital
Sunderland Royal Hospital
Tameside Hospital NHS Foundation Trust
Taunton and Somerset Hospital
The Christie NHS Foundation Trust
The Dudley Group of Hospitals NHS Foundation Trust
The Harley Street Clinic
The Hillingdon Hospital
The Ipswich Hospital NHS Trust
The James Cook University Hospital
The Lister Hospital
The London Clinic
The Portland Hospital
The Princess Alexandra Hospital NHS Trust
The Princess Grace Hospital
The Princess Royal Hospital Haywards Heath
The Queen Elizabeth Hospital Kings Lynn
The Queen Elizabeth II Hospital
The Royal Bournemouth Hospital
The Royal Hallamshire Hospital
The Royal Liverpool and Broadgreen University Hospitals NHS Trust
The Royal London Hospital
The Walton Centre Liverpool
The Wellington Hospital
The Whittington Hospital
Torbay Hospital
Trafford Healthcare NHS Trust
Tunbridge Wells Hospital at Pembury
University College London Hospitals NHS Foundation Trust
University Hospital Aintree
University Hospital Llandough
University Hospital of Hartlepool
University Hospital of North Durham
University Hospital of North Tees
University Hospital of Wales Cardiff
University Hospitals Bristol Foundation Trust
University Hospitals Coventry and Warwickshire NHS Trust
Vale of Leven District General Hospital
Victoria Infirmary Glasgow
Waikato Hospital
Wansbeck General Hospital
Warrington Hospital
Wellington Hospital
West Hertfordshire Hospitals NHS Trust
West Middlesex University Hospital
West Suffolk Hospital
Westmorland General Hospital
Weston General Hospital
Wexham Park Hospital
Whipps Cross University Hospital
Whiston Hospital
William Harvey Hospital
Withybush General Hospital
Worcestershire Royal Hospital
Worthing Hospital
Wrexham Maelor Hospital
Wrightington Hospital
Wycombe Hospital
Wythenshawe Hospital
Yeovil District Hospital
York Teaching Hospital
Ysbyty Gwynedd Hospital

APPENDIX FIVE – QUALITY ACCOUNT STATEMENT

We have prepared this section in case you would like to use it your Quality Account for 2011/12.

Quality Account statement

In 2012, **St. Elsewhere's Hospital** contributed **28 cases** to the 2012 National Comparative Audit of Blood Sample Collection & Labelling. This was 100% of the sample required.

Resources

Department of Health. Quality Accounts aim to enhance accountability to the public and engage the leaders of an organization in their quality improvement agenda. http://www.dh.gov.uk/en/Healthcare/Qualityandproductivity/Makingqualityhappen/qualityaccounts/index.htm

Healthcare Quality Improvement Partnership. National audits for inclusion in quality accounts and guidance for preparation of quality accounts statement. http://www.hqip.org.uk/national-clinical-audits-for-inclusion-in-quality-accounts-portal-goes-live