IBCT events originating in the hospital transfusion laboratory *n* = 132

There are a total of 132 IBCT cases in which the primary error arose in the laboratory, which represents 50% of the total 262 IBCT cases. They have been summarised in Table 19 on page 34 and are discussed in more detail here. Laboratory cases resulting in special requirements not met (41 cases) are discussed above.

In total, laboratory errors account for 200 of the total 1040 cases included in the SHOT report this year. This consists of 132 IBCT events (see Table 28 below), 47 anti-D related events (see page 82) and 21 handling and storage errors (see page 76).

In 2007 there were 121 cases involving laboratory errors consisting of 40 primary laboratory errors, 36 cases of special requirements not met, 20 laboratory-based handling and storage errors, 24 anti-D related laboratory errors and 1 HTR.

The has been a 65% increased in laboratory-related errors. However, the increase in overall reporting to SHOT this year stands at 85%, so the increase in laboratory errors is less than the overall increase. As a percentage of reports included in this 2008 annual report, laboratory errors – at 200 of 1040 cases – represent 19% of the total.

The vast majority of errors are procedural. Mistakes in testing account for only 31 errors (15.5%). Many years of improvements in testing, through participation in the UK NEQAS BTLP scheme, probably account for this. Laboratories now need to concentrate on procedural deficiencies.

Table 28
Summary of laboratory-related errors *n* = 200

Type of error	Number of cases from this chapter
Wrong blood	**39**
Wrong sample selected	4
ABO grouping error	5
D grouping error	11
Incorrect component selected	14
Incorrect labelling	4
Others	1
Wrong group selected for SCT patient	**4**
Wrong ABO group	4
Wrong D group	0
Other pre-transfusion testing errors	**48**
Testing errors	8
Procedural errors	40
Special requirements not met	**41**
Irradiated component	20
CMV negative component	7
CMV negative and irradiated	3
Phenotyped component	4
MB treated FFP	5
IgA deficient cells	0
HLA matched platelets	1
Apheresis platelets not given to a paediatric patient	1
TOTAL	**132**
Anti-D related laboratory errors	**47**
Handling and storage related laboratory errors	**21**
GRAND TOTAL LABORATORY ERRORS	**200**

Wrong blood incidents *n* = 39

This year 'wrong blood' incidents resulted from laboratory errors in 39 cases. This compares to only 15 cases last year.

Three cases involved babies < 4 months old, 1 case involved a 9-month-old baby, 1 case a 2-year-old and in 1 case the age was not given. All other cases were in adults over 18 years of age.

Incidents occurred in an emergency setting in 20/39 cases, while 14 were routine and 5 unknown. Seven of the errors occurred during normal working hours while 29 occurred out of hours, and the time was not given in 3 cases. The staff involved out of hours included 18 BMSs who normally work in transfusion and 11 who do not routinely work in transfusion.

The 39 errors were:

- In 4 cases the wrong sample was tested: 3 for grouping tests and 1 for a crossmatch. The first case resulted in a group A D positive patient being grouped as O D positive and receiving 2 units of group O D positive red cells. In the second case the samples that were transposed were both group A D positive. In the third case 2 samples were transposed resulting in a group O D positive patient being grouped as AB D positive and receiving 2 units of group AB D positive blood and a group AB D positive patient being grouped as O D positive and receiving 3 units of group O D positive blood. Neither patient had adverse reactions and the error was only discovered a year later when 1 of the patients returned to the hospital and had their blood group tested. The error in crossmatching caused no adverse reaction.

- Five ABO grouping errors. One of these errors was an urgent, manual, tile group that was misread. This resulted in a group AB patient receiving 3 units of group A FFP. The second case is difficult to interpret and may not have been an error: a sample from a patient on chemotherapy was grouped as O D positive but the patient insisted they had been grouped as B D positive at another hospital. The laboratory repeated their tests, which showed a group O forward group; however, the reverse group only reacted with group A cells. The patient required blood, and refused to give another sample, so group O D positive units were transfused. A year later the same patient returned and again grouped as O D positive, to be transfused with group O D positive blood. Samples were sent to the local NHSBT reference laboratory, which neither detected B antigen nor showed reaction with group A cells in the reverse group. It is not possible to say whether a weak mixed field reaction was missed or whether the disease state had caused the B antigen to disappear. The other 3 cases were groups performed using automated systems, which then required manual intervention/interpretation. These 3 cases are given below as case studies.

- Eleven errors in D typing. There were 4 female patients > 60 years old and 7 male patients. In 10 cases this resulted in D positive blood being given to D negative individuals and 1 case of O D negative blood being transfused to an O D positive patient. Three of the patients formed anti-D. Ten of the errors were made using manual techniques. Three cases definitely involved transcription errors, with results being correctly recorded on worksheets and then erroneously entered onto the LIMS, while in the other cases the results appear to have been misread. In 1 case the presence of cold agglutinins may have contributed to the error. The final case involves an incorrect interpretation of a weak D result on a sample tested on the Ortho Innova. This is a recognised problem, as highlighted in a number of UK NEQAS exercises and known to the laboratory involved, yet the BMS failed to repeat the D type with further anti-D reagents as per the local SOP (see Case 5 below).

- Fourteen cases of incorrect component selection. Six cases involved red cells. In 1 case this resulted in a neonate having an exchange transfusion with blood outside the specification of blood for neonatal exchange. A second case also involved inappropriate selection of blood for a neonate: the group A premature baby of a group O mother with anti-Fya was transfused group A blood that had not been tested for Fya and was issued using electronic issue. Other cases involved Group O blood being given to an AB patient, O D positive blood to an A D negative patient, O D positive to an O D negative patient, and an O D positive Octapack to an AB D negative baby. Four cases involved cryoprecipitate. In 3 cases cryoprecipitate was issued when FFP

was requested and in 1 case 10 pools of cryo were issued and transfused when 10 single units or 2 pools had been required. In 2 cases platelets for specific patients were transposed. Two cases involved FFP; in 1 case group O FFP was given to a group A patient and in 1 case cryodepleted FFP was issued when FFP was required.

- Four cases occurred in which units were labelled incorrectly by the laboratory, 1 case involving red cells and 3 cases involving platelets. The bedside check failed to identify the previous error.

- In 1 case a phone call was received to crossmatch blood for patient X and send it to an off site location. The full details of the patient were not noted and unfortunately a patient with a similar name (different hospital number and date of birth) was being tested at the same time. Blood was sent over labelled for patient Y but transfused to patient X. The error was noted when the second unit was checked at the bedside pre transfusion. Fortuitously, the 2 patients had the same blood group and a negative antibody screen.

Case 1

Historical error elucidated from full electronic laboratory records and automation

On authorising a blood group on patient X, the pathology computer flagged a mismatch with historical data, which gave the blood group as AB D positive. The blood group from the sample was interpreted as O D positive. The sample labelling was correct and the blood group was re-analysed and found to be O D positive. The doctor agreed to take a further blood sample, which was also found to be O D positive. The historical search identified that 2 units of AB D Positive red cells were transfused a year earlier with no adverse effects. Having identified when the sample was tested, the archive record on the automation was interrogated and it was found that the sample had been analysed with 1 other sample, which grouped as O D positive; the patient had been crossmatched and 3 units of red cells transfused. The patient had received antenatal care from another hospital and was grouped as AB D positive at booking and at 28 weeks' gestation. The conclusion of this investigation was that the 2 blood samples had been transposed and an O D positive patient had received 2 units of AB D positive red cells in 2007 with no adverse effects. The second patient, whose correct blood group was AB D positive, received 3 units of O D positive red cells in 2007 with no reaction.

Case 2

When IT fails electronic issue cannot be used

A 19-year-old female was admitted as an emergency with head trauma. The sample was tested using routine automation but the interface stalled and the result was entered manually onto the LIMS. Results from the wrong patient were entered. The blood was then issued using electronic issue. Four units of A D positive blood were transfused to this O D positive patient. The error was identified when the patient developed symptoms of a HTR with red urine and falling haemoglobin. Fortunately the patient made a full recovery from her ABO-incompatible transfusion.

Case 3

Competency assessment on blood group anomalies must form part of training

A grouping discrepancy was highlighted on the automated group of a 74-year-old patient requiring transfusion for anaemia. The forward group was A, but there was no reaction with the B cells on the reverse group. The BMS rechecked the group and thought that there was a weak reaction with the anti-B and interpreted the group as AB. However, as there was uncertainty, the BMS selected group A red cells for transfusion. Further testing of the sample by laboratory staff, the following day, confirmed that the group was A. It was felt that inexperience led to the mistake.

Case 4

The difficulties encountered with cases of AIHA

A 93-year-old female with AIHA was transfused 4 units of group A D positive blood, rather than group O D positive blood, because of a laboratory error in result interpretation. The patient sample was tested routinely overnight but the group results were not transmitted because they required interpretation. The antibody screen results were 3+ and the DAT 4+. Next morning the card was manually interpreted, incorrectly, as group A D positive and the result entered onto the LIMS. Further samples were sent to NBS RCI for investigation but a crossmatch was not requested. RCI phoned to say that the patient had autoantibodies and anti-E and suggested selecting E negative, K negative blood for crossmatching. Later the need for blood became urgent and a 4-unit crossmatch was set up, selecting A D positive, E negative, K negative blood. The crossmatch was incompatible as was the auto. The blood was issued with a warning that the blood was incompatible and that the patient should be closely monitored. The error was noticed when the

RCI report arrived in the post. The patient transfusion administration chart stated 'nil adverse event'. Over the next few days her Hb gradually fell but she had no effects that could not be attributed to her underlying condition. It was concluded that the drug regime used to suppress the AIHA had afforded protection against the incompatible units.

Case 5

D types must not be assigned on one weak reaction

A patient initially gave a weak reaction with anti-D and was reported as D positive without further investigation. Two units of D positive red cells were transfused and all subsequent samples grouped strongly as O D positive with no mixed field. Fourteen group O D positive red cells and 6 group O D positive platelets were transfused over a 3 week period. Several months later the patient presented as group O D negative with anti-D. Genotyping at IBGRL confirmed the patient as D negative.

Case 6

Take due care when selecting blood for special patient groups

Two units of blood were ordered from NHSBT, 1 unit for a neonatal exchange transfusion and the other a genotyped unit for a child with thalassaemia major. The duty BMS issued the irradiated unit, specified for exchange transfusion, to the thalassaemia major patient and the non-irradiated, genotyped unit for the exchange transfusion. The error was detected when the paediatrician realised they did not have sufficient blood to complete the exchange transfusion. The child with thalassaemia major did not receive any blood as the mistake had been identified prior to commencement of her transfusion.

Case 7

Take due care when selecting platelets for special cases

NHSBT delivered 2 units of platelets for 2 different patients. The BMS transposed the units and issued the pack of HLA matched platelets, specifically ordered for a haematology patient, to the other patient, who was bleeding. The platelets were ABO compatible.

Case 8

Is causing less distress to a paediatric patient a valid reason for using less safe practice?

While a 9-month-old male patient was in the anaesthetic room under anaesthesia, blood was taken for a group & save test. This is the usual procedure for children to avoid distressing younger children prior to (elective) surgery. To check the blood group type, a manual group & save was performed. The BMS authorised the blood group and antibody screen as group O D positive, antibody screen negative, and 2 units of O D positive units were issued and transfused. This was a misreading by the BMS. The patient was actually group O D negative when a repeat sample was tested later using automation. No anti-D had been formed at the time of the report.

COMMENTARY on wrong blood incidents

The number of laboratory errors contributing to 'wrong blood' events has increased this year from 15 to 39. This is a significant increase and mirrors the increase in reporting in all categories. The increased errors are largely in D typing and component selection.

The number of ABO errors have remained relatively constant for the last 3 years (see Table 29 below). This year the errors have resulted in 4 ABO-incompatible transfusions: 2 units of AB blood being transfused to a group O patient, 2 cases of 4 units of group A blood being transfused to group O patients and 1 case of group A FFP being transfused to a group AB patient.

Fourteen cases of D-incompatible transfusion due to laboratory errors are reported this year, with anti-D known to have been produced in 3 cases at the time of writing. Fortunately all 3 of these patients were women over 60 years of age.

Table 29
Trends in laboratory based ABO grouping errors, with causes

Year	Total No. of Cases of ABO Errors	Wrong Sample Tested	Interpretation /Transcription Errors	Other	ABO-incompatible Transfusions (all components)	Sequelae
2003	17	8	9		7	2 major morbidity
2004	18	5	12	1	6	1 death 1 major morbidity
2005	22	9	12	1	9	1 AHTR
2006	6	2	3	1	0	No morbidity
2007	7	3	4		2	No morbidity
2008	8	3	5		4	1 AHTR

As reported in previous years the majority of errors occur out of hours. However, this year, the number is huge, 29/39 cases or 74%. Another data gathering exercise is required to determine current workload data to see whether this increased error rate is a reflection of an increase in workload outside routine hours or an increase in the error rate, or both. This year the majority of errors made out of hours were made by BMS staff who work regularly in transfusion (18/29 cases or 62%). Half of the errors made were in blood component provision for emergency cases.

All but one of the ABO and D typing errors occurred because of mistakes in manual procedures. The fact that errors occur most often during manual procedures has been documented in consecutive SHOT reports. Despite this evidence that manual procedures are inherently less safe than automated ones, patients for elective surgery are still being tested, at the last minute, by manual methods and this requires review.

The increase in component selection errors is interesting, particularly in regard to the number of errors in the selection of cryoprecipitate, as it parallels the introduction of the new component, pooled cryoprecipitate, by the NHSBT in October 2006. It should be possible to set up warnings in the LIMS to highlight when the component issued for a patient does not match that of the component ordered. This facility does not appear to be widely used/available. There were a number of component selection errors that resulted from carelessness at the point of issue, often when specific components had been ordered from NHSBT, arriving ad hoc; see Case 4 and Case 5 above, and further examples in the 'Other pre-transfusion testing errors' section.

In 9 cases it was believed that the final bedside check could have picked up these laboratory errors and prevented mis-transfusion.

Learning points

- Electronic issue must only be used on the first presentation of a patient if the results of that sample have been tested using full automation with an interface to the LIMS and there have been NO manual interventions.
- Before staff are deemed competent to work alone they must be aware of, and competency assessed to deal with, blood grouping anomalies.
- Blood grouping can be problematic in the presence of cold agglutinins. Laboratories need to review procedures and staff training to ensure presence of clear instructions and competence in dealing with this problem, including when to send samples away to a reference laboratory.
- When new components are introduced, training must be given to all staff to allow thorough familiarisation with the component appearance, label and specification.
- BMSs must take care when issuing components to patients with specific requirements.
- NHSBT should review the packaging of components that look similar, to assess whether they could be more easily identified, particularly when those components are often used in emergency situations.
- The IT system should be configured to flag a component discrepancy between that ordered and that issued, and this should be fully validated. If this is not possible locally these development requirements must be raised with LIMS suppliers.
- Telephone requests for blood components must follow the strict rules that are in place for written requests, i.e. the patient's full name, hospital number and date of birth must be obtained.

The following learning points from previous reports remain pertinent:

- Manual processes are more prone to error. During process validation ensure that manual procedures and interventions are kept to a minimum and that appropriate checks are in place at weak, manual points of a process.
- Training and competency assessment in the laboratory must cover basic manual checking procedures to ensure that these are second nature at a time when automation and computerisation will have lessened experience and practice in these basic skills.

Wrong ABO or D type blood components issued for SCT/BMT recipients *n* = 4

All cases were in adults. Three were routine transfusions and 1 was an emergency. Two cases occurred during normal working hours, 1 during a shift and the timing was not known in the fourth case.

In the first case group A blood was given to a group A recipient of a group O transplant, 1 month post transplant. The transplant information was not passed on to the laboratory but the request form contained the clinical detail 'post allo BMT' and the reporter thought the laboratory should have made further enquiries. There was no adverse reaction from the transfusion.

In the second case the BMS failed to add pertinent transplant blood group information to the LIMS. The historical group was A D positive but group O D positive units were required post transplant. Ten units of group A D positive blood were transfused over a 5-month period. No adverse reactions occurred.

In the third case the donor of a peripheral blood stem cell transplant was group A D positive and the recipient group O D positive. The patient should have been given group A D positive platelets but received group O D positive platelets on 4 occasions. No adverse reactions occurred.

In the final case the donor of a bone marrow transplant was group O D negative and the recipient group A D positive. A granulocyte transfusion was required and 3 units of group A D positive granulocytes were issued when group O D negative should have been selected. Although donor and recipient blood group details were on the LIMS, unfamiliarity with the use of granulocytes meant that the significance of the blood group was not realised.

Learning points

- Simple yet robust procedures must be in place for recording transplant details.
- Selection of blood and blood components post transplant must be included in competency assessments.

Pre-transfusion testing errors *n* = 48

The number of errors in this category has more than doubled from 20 cases last year. Two of the cases involved babies under 4 months of age' there were 2 cases in children under 16 years, and 2 further cases in patients under 18. In 1 case the age was not stated and the rest occurred in adults.

Twenty-one cases occurred during normal working hours, 24 cases out of hours, and the time was not stated in 3 cases. Of the 24 errors made out of hours, 14 were made by BMSs who normally work in transfusion, 9 by BMSs who do not and in 1 case the status of the BMS was not known.

The 48 errors can arbitrarily be split into:

- Testing errors, i.e. the correct tests were performed but incorrect results obtained, either by poor performance of the test, transcription error or incorrect interpretation
- Procedural errors, e.g. incorrect test selection, failure to follow procedure

Testing errors n = 8

Seven of the errors resulted in weak antibodies being missed, with no adverse events following these errors. The eighth error involved the use of the wrong sample for a crossmatch on a patient with AIHA and multiple antibodies. This patient suffered an acute transfusion reaction that resolved with no complications.

Two interpretation errors occurred: in 1 case an initial interpretation of non-specific antibody was later interpreted as an anti-Fyb by more experienced staff (an NBS reference centre error) and in the second case an anti-Jka was excluded on the basis of a positive Jka type when in fact the sample typed was a post-transfusion sample.

It is debatable whether 3 of the cases in this section were errors or just very weak antibodies, at the limit of detection, that reacted more strongly with one technique than another.

Procedural errors n = 40

In 34 of these cases the patient suffered no reaction. Of the remaining cases:

- 1 outcome was not stated
- 1 died from underlying condition
- 1 involved a possible transfusion reaction but was not thought to be related to the error
- 1 involved a mild reaction
- 1 patient with AIHA produced anti-E (and it is difficult to say whether there was a reaction because of the AIHA)
- 1 case involved the production of anti-K in a 17-year-old female

There were many different types of procedural error:

Testing unsuitable samples n = 9

There were 8 cases where the sample used was too old (ranging from a few hours out of usable time to 27 days out of date) and 1 case where the sample was tested despite a discrepant date of birth between sample and request.

Case 9

IT warning flags are only helpful prompts. Staff must understand the reasons behind protocols.

The patient had been transfused on 28/01. The sample was therefore unsuitable to use from 30/01 according to local policy. Despite this the sample was used to serologically crossmatch blood on 03/02, the computer indicating that electronic issue was unavailable. The 2 members of staff involved in the incident were senior members of the haematology department working in blood transfusion 'out of hours'. It was clear that they did not understand the reason for the computer indicating that electronic issue was unavailable. The blood was transfused uneventfully.

Failure to find historic records n = 4

In 1 case the use of an ED number meant that a record under the hospital number, with anti-E, was not found. There was 1 case where a name search was performed incorrectly and a record with anti-E was not found. In a third case the staff forgot to search the old database, missing a record with anti-e+K. In a final case there were 2 hospital numbers on file, merging of records did not take place, and so the record with anti-Fy^a on file was missed.

Failure to provide correctly phenotyped units n = 12

- 2 cases where clerical error, when ordering specific phenotyped units from NHSBT, meant that blood of an inappropriate phenotype was received and then crossmatched: units that were Jkb negative rather than Fyb negative and units that were not S typed when they should have been. The crossmatches were compatible as the antibodies were historic and not detected in the current sample.
- 2 cases where antibody information, given over the phone from reference laboratories, was misheard: anti-S misheard as anti-f, and anti-C misheard as anti-E.
- Not issuing phenotyped units to a patient with AIHA resulted in an Ro patient being given E positive blood, which produced anti-E.
- Crossmatching E-c- for a patient with sickle cell disease who required e-C- phenotype due to historic antibodies.
- Failure to provide K negative units for a patient with historic anti-K.
- Failure to provide K negative units to a pre-menopausal female who produced anti-K.
- Failure to select Fy^a/C^w negative units for a patient with historic anti-Fy^a and anti-C^w.
- Failure to receive appropriately phenotyped units due to a clerical error, regarding a historic antibody specificity, on the request form to a referral laboratory.
- The BMS did not realise that antigen negative blood had to be obtained for historic antibodies (anti-f plus anti-Jk^a). As the current antibody screen was negative, crossmatch compatible blood was issued.
- Failure to understand the importance of historic maternal antibodies when selecting blood for a neonate. The mother had anti-c+E (though this was not detected on the current sample), but group O D negative blood was issued to the baby without a crossmatch.

Case 10

The importance of antibody history

Patient arrived in the ED with a GI bleed. Two units of flying squad group O D negative blood were used. A group antibody screen and retrospective crossmatch on the group O D negative units was performed. The antibody screen was negative but the BMS on call noticed that the patient had previously had anti-Jka and anti-f. About 12 hours later the ward phoned asking for more blood to be crossmatched. The current antibody screen was negative and the BMS did not realise that antigen negative blood should have been selected. All units were crossmatch compatible. The patient received 3 units of group A D positive blood. The following day the incident was discovered by routine day staff and all units were Jka typed. All were Jka positive (including the flying squad blood) and 2 of the group A D positive units were also positive for f. The patient died from the underlying condition.

Cases in which blood was issued despite incomplete pre-transfusion testing n = 12

- 2 cases where the group & screen was not complete.
- 4 cases where antibody identification was not complete.
- 1 case where antibody identification was not performed.
- 1 case where the crossmatch was incomplete but the blood was labelled.
- 1 case where blood arrived from NHSBT and the BMS thought it had been crossmatched and issued it without crossmatching.
- Failure to update critical notes following antibody identification that had an impact on the subsequent presentation of the patient.
- BMS went straight to a warm NISS antibody screen and crossmatch because of a historic cold agglutinin. The antibody screen was negative and the crossmatch was compatible and 4 units of blood were issued. The patient suffered a mild transfusion reaction of pyrexia, nausea and rigor, so a transfusion reaction investigation took place. Routine screening and crossmatch methods were employed. The cold agglutinin was no longer detectable but a weak alloantibody was detected.
- Blood issued via electronic issue (EI) before DAT complete.

Case 11

The need for complete documentation

Six units of blood were issued using emergency procedures for a patient admitted with a GI bleed. Full compatibility testing was completed retrospectively. An antibody was detected in the screen and 1 unit out of the 6 issued was incompatible. The BMS immediately contacted the clinical area to recall the units; however, 4 units, including the incompatible unit, had already been transfused. On investigation, laboratory testing of the patient's previous sample had detected and identified anti-C+D+E. However, the patient's critical notes had not been updated. This resulted in the BMS being unaware of the requirement to provide antigen negative blood during the emergency. There was no adverse reaction reported.

Errors during crossmatching n = 3

- 1 case where an immediate spin crossmatch was used when an IAT crossmatch should have been used.
- 1 case where the BMS continued to issue blood by EI following a transfusion reaction, with no investigation into the reaction.
- 1 case where a neonatal sample was used for the crossmatch when the maternal sample should have been used.

Cases that are reported in other sections of this chapter, because that is where the primary error occurred, had secondary errors of inappropriate use of electronic issue (EI).

- Two cases from 'Wrong blood' incidents:
  - EI on a baby when the mother had anti-Fya and possible maternal IgG anti-A.
  - EI of blood on first presentation of patient, following a manual intervention on recording the grouping result.
- The cases reported above, under incomplete pre-transfusion testing:
  - EI performed when the antibody screen was positive, but the identification was outstanding.
  - EI performed when DAT outstanding.

COMMENTARY on pre-transfusion testing

The increase in the number of errors from 20 last year to 48 this year is at least in part accounted for by the overall increase in reporting in 2008 in all categories, which reflects increased awareness of what to report and greater participation in the SHOT scheme. In addition, as laboratories improve their quality systems in line with the Blood Safety and Quality Regulations 2005[1] and the new CPA Standards (www.cpa-uk.co.uk) there may be better recognition of procedural failures.

The percentage of errors occurring out of hours still appears to be higher than within core hours but this is not as marked as in the cases of 'Wrong Blood' errors.

Learning points

- Errors are still being made in using inappropriate samples. Computer warning flags are a useful tool but must be backed up with strong theoretical knowledge.
- In both the 'wrong blood incidents' section and this section, careless errors seem to have been made in issuing specially selected components sent from NHSBT. Care must be taken when issuing specialist components.
- Competency assessment must comprehensively cover the areas of phenotype selection, antibody history and appropriate use of EI.

Brought forward from last year:

- Laboratories must ensure that robust systems are in place for highlighting 'outstanding' work on a patient.
- Transfusion laboratories must have thorough search strategies when looking for patient histories in order to find and reconcile multiple entries for a patient.

RECOMMENDATIONS for IBCT chapter

New recommendations for 2008

- Competency assessment of staff involved in the transfusion process must be relevant to the person's core role and knowledge requirements. This must be carried out in accordance with NPSA SPN 14.

  Action: Clinical risk managers, HTTs

- All staff must be trained (and competency assessed) in recognising the different blood components and their labels.

  Action: Clinical risk managers, HTTs

- The potential risks of access to emergency O D neg units within satellite fridges should be recognised and strategies put in place to minimise lack of correct identification. Clear guidance should be formulated regarding their use and potential risks associated with their removal from fridges. The emergency units should be separated and clearly labelled.

  Action: Clinical risk managers, HTTs

- Shared care discharge notification, giving tick-box options for special requirements, with reasons, should be completed by the referring clinicians and forwarded to the receiving hospital through the laboratory network.

  Action: NBTC, RTCs

- Laboratory procedures should be validated in line with the BSQR and should be revisited following an error as part of Corrective and Preventive Actions.

  Action: Transfusion laboratory managers

- Competency assessment in laboratories must be linked to process. BMS staff must be competent in performing the test but must also have a thorough understanding of the context in which the test is being performed, i.e. the test in relation to a specific patient and the clinical information. Basing competency assessment on National Occupational Standards (NOSs) will enable this, as NOSs have both 'Performance' criteria and 'Knowledge and Understanding' criteria.

  Action: Transfusion laboratory managers

- The UK Transfusion Laboratory Collaborative has recommended minimum standards for hospital transfusion laboratories in terms of staffing, technology, training and competence. This document is in press in *Transfusion Medicine*[2] and should form the basis for future laboratory planning.

  Action: CEOs, Pathology managers

Recommendations from previous years

Year first made	Recommendation	Target	Progress
2007	Education of doctors and nurses involved in transfusion must continue beyond basic competency to a level where the rationale behind protocols and practices is understood. Transfusion medicine needs to be a core part of the curriculum.	**NBTC, Royal Colleges, GMC**	Royal Colleges and Specialist Societies Committee working with NBTC.
2007	Staff involved in blood component transfusion must be aware of their professional accountability and responsibility.	**GMC, NMC, IBMS, professional insurance schemes**	
2001	Existing procedures should be re-examined for flaws that could lead to systems errors.		BCSH Guidelines on Blood Administration, currently under review.
2002	Resources must be made available in Trusts to ensure that appropriate and effective remedial action is taken following transfusion errors.	**HAs, PCTs, Trust CEOs through HTCs and risk management structures**	No mechanisms for monitoring.