

Learning Points for Clinical Staff

Learning Point	Notes/Action
<p>Decision to transfuse</p> <ul style="list-style-type: none"> • The most senior doctor available should be involved in the decision to transfuse. • Consultant staff should ensure that they keep up to date with current transfusion practice. • Unexpected discrepancies in laboratory results should be investigated and possible error considered. • All results, especially if highly abnormal, must be reviewed in the context of the patient's recent history and current clinical condition. • Laboratory results must be evaluated in the context of careful clinical assessment of the patient. • Formal protocols are needed for telephoning of laboratory results, including 'read-back'. • There should be local protocols empowering blood transfusion laboratory staff to query clinicians about the appropriateness of requests for transfusion against local guidelines for blood use. • Analytical errors involving point of care testing (e.g. erroneous Hb results obtained from blood gas analysers) should be reported to the MHRA Medical Devices division so that they can be investigated with the manufacturer of the device, and any problems disseminated to all users. Reports can be submitted electronically or forms downloaded from the MHRA website www.mhra.gov.uk. <p>Prescribing</p> <ul style="list-style-type: none"> • Prescriptions must be written by a doctor, and volume and rate of infusion must be clearly stated. • Nursing staff must not accept verbal prescriptions or instructions, and should demand that prescribing protocols are followed. • Blood should only be prescribed by a doctor who has undertaken training in blood transfusion and has assessed as competent. <p>Taking a sample</p> <ul style="list-style-type: none"> • All staff undertaking phlebotomy must understand the importance of correct patient identification and correct sampling technique and must be assessed as competent. • Positive patient identification is an absolute prerequisite of blood sampling. <p>Administration</p> <ul style="list-style-type: none"> • As recommended last year, blood administration outside of core hours should be avoided unless clinically essential. • Medical and nursing staff should not work beyond their competence or expertise. • Compatibility forms and patient notes MUST NOT be used as part of the final check at the patient's side. • In many cases of IBCT, staff were working under pressure and against difficulties, e.g. understaffing, power cut, excess workload, and were giving of their best efforts under adverse circumstances, but not realising that 'helping out' by doing someone else's job may increase risk. • Staff should be educated to adhere to established safe procedures at all times, except in cases of extreme clinical urgency, which may justify the increased risk of deviation. • High risk situations (such as simultaneous transfusion of patients in adjacent beds) should be recognised and, if unavoidable, special care taken with identification. • Large volumes of blood components must not be given without ongoing clinical and laboratory review. 	

Learning Points from the 2006 Serious Hazards of Transfusion Annual Report

Monitoring of the transfused patient

- Clinical staff must be able to recognise a transfusion reaction and know how to proceed.
- A catastrophic transfusion reaction must be investigated urgently, with involvement of a consultant haematologist.
- Implementation of shift systems requires an arrangement for formal handover.

Special Requirements

- Clinical staff must ensure that the transfusion laboratory is fully aware of complex cases, and unless there is extreme urgency, pre-transfusion testing should be done by experienced staff during normal working hours.
- A mechanism for communication of transplant details between clinicians and laboratories must be in place.
- A formal mechanism needs to be introduced for informing other hospitals of patients' special requirements.
- There are opportunities throughout the transfusion chain where special requirements can and should be documented and communicated. There should be formally established communication channels, supported as far as possible by information technology.
- Bone marrow transplant units must have a robust mechanism in place for communication of special transfusion requirements, and responsibilities must be clearly defined.
- Arrangements for shared care must specifically include communication of special transfusion requirements.
- Identifying the need for special transfusion requirements is ultimately a clinical responsibility and the requirement must be clearly indicated on the request form and the blood prescription. The design of such documents should facilitate this and prescriber education is required. The use of an e-form may improve accuracy and facilitate the process.
- The pre-transfusion check at the bedside must include checking of special requirements against the prescription.
- Cardiac surgical units undertaking correction of congenital heart defects must be aware of the requirements for irradiated blood for patients with confirmed or suspected Di George Syndrome.
- The need for irradiated components must be clearly indicated in the patient's case notes and on blood component prescription chart.
- The patient must be educated regarding the requirement for irradiated components and provided with written information and a card.

Learning Points for Laboratory Staff

Learning Point	Notes/Action
<p>Training and Competency</p> <ul style="list-style-type: none"> • 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. • Competency-based training for laboratory staff must include those working out of hours. <p>Quality Systems</p> <ul style="list-style-type: none"> • A laboratory quality system, as required by the Blood Safety and Quality Regulations, must include internal incident reporting mechanisms and appropriate, documented, corrective actions. • Problems with reagents or laboratory equipment should be reported to the manufacturer and to MHRA Medical Devices division so that other users may be alerted. www.mhra.gov.org. <p>IT Systems</p> <ul style="list-style-type: none"> • Laboratories should follow the comprehensive guidance on the electronic selection and issue of units given in the BCSH guideline: 'The specification and use of IT systems in Blood Transfusion Practice'. Some pertinent points from this document are: <ul style="list-style-type: none"> ○ Robust procedures and strict adherence to protocols is essential to ensure safe working practices. ○ All electronic issue procedures should be controlled by computer algorithms to validate appropriateness of actions. ○ For previously transfused patients, the timing of the sample must comply with BCSH guideline 'Compatibility Procedures in Blood Transfusion Laboratories'. ○ The patient's serum/plasma does not contain, and has not been known to contain, clinically significant red cell alloantibodies reactive at 37 C. • There should be local protocols empowering blood transfusion laboratory staff to ensure that appropriate clinical information is provided with requests for blood transfusion. It is not the responsibility of the laboratory staff to recognise clinical conditions indicating special requirements, but they can provide an additional safeguard and should check the clinical and demographic details on the request form. • Laboratories must ensure that robust systems are in place for highlighting 'outstanding' work on a patient, for example patient records awaiting merging, incomplete antibody identification. • IT 'flags' should be used wherever possible, e.g. date of birth warnings, 'transplant patient'. • When purine analogues are prescribed for a patient this should be immediately communicated to the transfusion laboratory so that the patient record can be appropriately 'flagged'. This can be effectively achieved by automatic download from the pharmacy to the laboratory computer. • A histological diagnosis of Hodgkin's disease should trigger a communication to the transfusion laboratory. Again, this can be supported by a link between the histopathology and the transfusion laboratory computer systems. • Merging of computer records is essential for safe practice. Laboratories should review their procedures and ensure that they have robust procedures for merging of records by appropriately trained and competency-assessed staff. Ultimately, the problem of multiple hospital numbers and case records should be reduced by routine use of the unique NHS Number as a primary patient identifier in line with the recent recommendation from the National Patient Safety Agency. • When laboratory IT systems are 'off-line', non-essential transfusions should be avoided. Robust manual back-up procedures and recovery plans must be in place and tested. 	

Learning Points from the 2006 Serious Hazards of Transfusion Annual Report

- Laboratory IT systems should be designed to ensure that 'warning flags' are prominently displayed, preferably on the opening screen, and cannot be overridden or bypassed.
- Staff must be trained in appropriate search strategies to ensure that all relevant records are accessed.
- Transfusion laboratories should have direct access to the hospital Patient Administration System and/or pathology results and the ability to review haematology results online (ideally on the same screen).
- When new laboratory IT systems are installed, patient data from the old system should be transferred as a matter of urgency to the new system. Wherever possible this should be done electronically to minimise the risk of transcription errors (see SHOT Annual Report 2005).
- Where historical records were not checked or inappropriate search strategies used, more than 50% involved biomedical scientists who work regularly in the transfusion laboratory. This problem is clearly not confined to 'on call' or rotating staff. Laboratories must ensure that all staff using the IT systems have appropriate training, updates and documented competency assessment.
- Poor communication around the transfer of patients between hospitals remains a significant cause of error. As noted in previous SHOT Annual Reports, the development of IT links between transfusion laboratories, or access to an electronic patient record (EPR) containing accurate and up-to-date transfusion data, would significantly reduce the number of IBCT due to special requirements not being met. This would also impact on delayed haemolytic transfusion reactions caused by blood group alloantibodies that have fallen to undetectable levels. The UK Connecting for Health project has the potential to meet these needs but the question of how and when transfusion data is entered on the EPR must be resolved.
- All laboratories using electronic selection to issue red cells must ensure that their operating procedures are consistent with national guidelines and followed by laboratory staff. The computer algorithms in use must prevent issue outside the guidelines.
- IT systems that support transfusion safety, monitoring and traceability outside the laboratory (e.g. blood-tracking systems and bedside ID systems) should be integrated with laboratory systems and processes. Laboratory staff must be fully trained in relation to these systems and be able to provide support and advice to clinical areas on a 24/7 basis.

Anti-D

- Laboratories undertaking antenatal serological testing should have clear protocols based on BSCH guidelines including algorithms for repeat testing in cases where there is uncertainty whether anti-D administration.
- Senior, experienced laboratory staff should take responsibility for interpretation of results and issue of anti-D.
- The introduction of RAADP should be supported by education of doctors and midwives (in hospital and primary care) regarding the significance of antenatal antibodies.
- Agreed protocols, compliant with current legislation, should be implemented for the issue and prescription of anti-D Ig.

Serological Issues

- If used inappropriately, prewarming techniques can reduce or remove the activity of clinically significant antibodies, and should only be used where cold autoantibodies or specific cold alloantibodies have been positively identified.
- Blood warmers should be used where high-thermal range cold agglutinins are present.
- Some transfusion reactions may be prevented in recently transfused patients, by using fresher blood samples, taken in line with BCSH recommendations.
- Group O apheresis platelets can cause acute haemolytic reactions even when tested and found negative for high-titre haemolysins. They should only be used for non-group O patients (particularly paediatric patients) as a last resort, and should not be kept by hospitals as stock.
- It is advisable to provide Rh and K matched blood to patients with AIHA, in line with BCSH guidelines.