

## SHOT Main Recommendations

Action	Recommendation	Compliance / Comments
<p><b>CMOs' Blood Transfusion Committees in England, Wales, Scotland and Northern Ireland working with stakeholders, blood transfusion services, clinical and laboratory specialists and manufacturers</b></p>	<p>Hospital transfusion laboratories need to liaise closely with manufacturers to develop and implement standard, detailed specifications for electronic systems in the laboratory, at the bedside and at the clinical-laboratory interface. An education package including minimum knowledge and skills, the appropriate use of these systems, and appreciation of their limitations should be a part of this joint project.</p>	
<p><b>SHOT and its reporters, UK blood services and their R&amp;D directorates</b></p>	<p>All pulmonary complications of transfusion should be recorded and reported to haemovigilance systems even if they do not fully fit existing criteria. Research should be initiated to evaluate the current inclusion and exclusion criteria, especially for TRALI and TACO. A register of possibly implicated donors should be kept by the blood services.</p>	
<p><b>NBTC, DH, Trust / Hospital CEOs</b></p>	<p>A patient education campaign should empower recipients of blood transfusion, and all patients undergoing tests, procedures and surgery, or receiving drugs and therapies, to ask the staff before they carry out the intervention; <b><i>'Do you know who I am?'</i></b></p>	
<p><b>DH, trust CEOs</b></p>	<p>Trusts must implement the use of a documented handover tool, such as the one recently developed by the Royal Colleges, as part of a formal patient handover system.</p>	

### Individual Chapter Recommendations

<p><b>NBTC and counterparts in Scotland, Wales and Northern Ireland</b></p>	<p>A transfusion checklist should be developed, perhaps with an accompanying transfusion record section, in a similar style to the WHO surgical checklist. This is a proven aid to patient safety and could prevent omission of critical steps in the process.</p>	
<p><b>CEOs, HTC's and HTT's</b></p>	<p>All staff must take full professional responsibility for their part in the transfusion process. Personnel involved at the point of component administration must understand that this is the final opportunity to check for errors earlier in the chain, and the sole remaining opportunity to be certain of the recipient's identity</p>	
<p><b>CEOs, HTC's</b></p>	<p>The existence, and the importance, of special transfusion requirements must be taught to junior doctors in all hospital specialities. Local mechanisms for ordering and prescribing components need to facilitate correct ordering, and remind clinical and laboratory personnel where possible.</p>	
<p><b>HTC's, HTT's</b></p>	<p>Hospitals must ensure that they have protocols and documentation systems for;</p> <ul style="list-style-type: none"> <li>• Transportation of blood components accompanying patients transferring to other sites</li> <li>• Administration to patients who may be permitted to receive blood components at home.</li> <li>• Ongoing information transfer between hospitals when patients have shared care at two or more sites.</li> </ul>	
<p><b>HTT's</b></p>	<p>Many hopes of error reduction have been pinned on extending automation and IT. An emerging theme from this year's report is that frequently it is still up to well trained staff, with underpinning knowledge, to interpret and heed warnings and flags and, unless appropriate actions are taken, errors will continue to occur.</p>	
<p><b>Manufacturers of blood grouping equipment, IT working group of the NBTC</b></p>	<p>There is a requirement for manufacturers to provide affordable, secure automation for smaller laboratories that bridges the gap between manual methods and large 'walk away' analysers.</p>	

**Recommendations from the 2009 Serious Hazards of Transfusion Annual Report**

<b>HTTs</b>	The number of errors in the Special Requirements Not Met (SRNM) category has remained high for a number of years. Laboratories must make a concerted effort to tackle this problem. This should be done at a local level as there will be different root causes in different Trusts.	
<b>Lead BMS for hospital transfusion laboratories, transfusion laboratory managers</b>	Failure of laboratory staff to identify or heed the historical record on LIMS remains a significant cause of IBCT. There are a worrying number of cases reported to SHOT where laboratory staff are able to override a warning flag or a result on an automated analyser without clearly understanding the significance of their action or the potential for harm – a particular problem when blood is release by electronic issue. Lead BMSs for the transfusion laboratory, with appropriate support from senior management in the organisation, must ensure that all users of laboratory information management systems are trained and competency assessed before using laboratory IT systems or automated analysers.	
<b>Transplant teams, hospital transfusion laboratories, HTTs</b>	Selection of blood components of appropriate blood group after allogeneic stem cell transplantation can be complex. The recommendation is that transplant teams, in collaboration with the transfusion laboratory and/or transfusion centre, produce a post-transplant plan for each patient, ensure appropriate notes on the LIMS and the case record, and ensure that transfusion request forms indicate that the patient has had a transplant.	
<b>Risk management boards, HTC's, HTTs</b>	Staff working with paediatric patients must be trained and familiar with paediatric prescribing regimens and dose calculation for children. A specially designed prescription chart for paediatrics may assist this.	
<b>Royal Colleges</b>	Junior doctors must not be expected to clinically evaluate potentially bleeding patients if they are insufficiently experienced. Senior colleagues need to be involved in the decision to transfuse and the evaluation of patients with unexpected results. Doctors need to differentiate chronic anaemia from acute blood loss. BMS requests for repeat samples must be heeded.	
<b>POCT teams and manufacturers</b>	Blood gas machines must not be used for Hb estimation unless they are designed and calibrated to produce accurate, reproducible results.	

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<b>HTCs</b>	Haematology laboratories need protocols for dealing with out of range results, including trending and delta checks, films and asking the Haematologist. Potentially erroneous results should not be communicated to clinicians either verbally or as unverified results on the computer system. New samples should be requested, with an explanation, but the incorrect result should not be given.	
<b>HTCs, HTTs</b>	Maintaining cold temperature storage conditions and guaranteeing the capture of valid and accurate monitoring data is the responsibility of all staff involved in the storage, transportation and administration of blood components. Clear guidance should be provided regarding the removal (and return should it not be required) of every blood component from validated storage areas.	
<b>HTTs</b>	As part of the competency assessment process the importance of checking the expiry date during the collection / final patient identity checks must be emphasised to all practitioners.	
<b>HTCs</b>	Trusts must ensure that there is representation from midwives and obstetricians on hospital transfusion committees, with the aim of jointly drawing up straightforward local protocols for the request, issue and use of anti-D based on well-established national guidance.	
<b>HTCs, Trust CEOs</b>	Cases of late administration, omission, or inappropriate administration of anti-D immunoglobulin must be the subject of internal follow-up within trusts via established governance mechanisms.	
<b>HTCs, HTTs</b>	IgA should be measured in all patients who experience severe allergic or anaphylactic reactions. Measurement of IgA will help assess the relevance of IgA deficiency, and has clinical relevance for the patient, as it may indicate part of the spectrum of common variable immunodeficiency.	

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<b>HTCs, HTTs</b>	All moderate and severe transfusion reactions should have investigations performed. Core investigations should include Full Blood Count, U&E, LFT, repeat G&S, and urinalysis. Additional investigations should be performed as dictated by the patient's symptoms. In view of recent cases of bacterial transfusion-transmitted infection presenting with atypical symptoms and signs, consideration should be given to culture of the component and the patient's blood in severe reactions, even when the reaction appears to be allergic. Such cases should be discussed with a blood service consultant, who will decide whether to perform a recall of associated components.	
<b>Consultant Haematologists and SHAs</b>	Patients with TTP should have plasma exchange at presentation (and ideally within 24 hrs of presentation), with plasma infusion alone administered prior to transfer to a unit or hospital that can offer plasma exchange and appropriate management.	
<b>HTTs</b>	Staff should maintain a high index of suspicion for bacterial causes when managing acute transfusion reactions. Symptoms may appear to be related to the patient's underlying condition, and temperature rises may be small or absent altogether. A BCSH guideline on the management of acute transfusion reactions is currently in preparation.	
<b>HTTs, UK Blood Services</b>	Processing and issues teams at the UK blood services and hospital transfusion teams should be vigilant to any abnormalities or clumps present in packs prior to transfusion, as highlighted by the Near Miss case in 2009.	
<b>HTTs, UK blood services</b>	Cleaning protocols for cold rooms and processing and storage areas should be reviewed regularly. Compliance with these should be audited.	
<b>Clinicians, UK Blood Services</b>	Clinicians investigating suspected viral TTIs should explore all possible risk exposures in parallel with the blood service investigations, in order to determine the patient's most likely source of infection.	

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<p><b>HTCs, HTTs</b></p>	<p>The correct prescription of paediatric transfusions is vital and an area of recurrent errors. Local consideration should be given to the design of paediatric prescription charts in order to facilitate the correct prescription of both blood component volumes/rates and clinical special requirements.</p>	
<p><b>HTCs, HTTs</b></p>	<p>Nursing staff involved in paediatric transfusion must be sufficiently skilled and competent in the use of pumps/blood infusion devices, appropriate transfusion volumes/rates, and the need for special requirements in order to reduce these types of errors. These aspects should be included in their transfusion training as required by the BCSH (2009) guidelines on the administration of blood components.</p>	