Health Service Circular

Series Number: HSC 2007/001
Gateway Reference: 9058
Issue Date: November 2007

Better Blood Transfusion

Safe and Appropriate Use of Blood

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Better Blood Transfusion

Safe and Appropriate Use of Blood

Summary

This Health Service Circular (HSC) replaces HSC 2002/009 *Better Blood Transfusion – Appropriate Use of Blood* and sets out a new programme of action for the NHS to:

- Build on the success of previous *Better Blood Transfusion* initiatives to further improve the safety and effectiveness of transfusion
- Ensure that *Better Blood Transfusion* is an integral part of NHS care
- As part of clinical governance responsibilities, make blood transfusion safer
- Avoid the unnecessary use of blood and blood components (fresh frozen plasma and platelets) in medical and surgical practice
- Avoid unnecessary blood transfusion in obstetric practice and minimise the risk of haemolytic disease of the newborn (HDN)
- Increase patient and public involvement in blood transfusion

The programme of action should be considered in conjunction with Annex A of this circular that provides further detail on its implementation.

A toolkit to assist NHS Trusts in the implementation of *Better Blood Transfusion* was developed on the www.transfusionguidelines.org.uk website in 2003. It provides access to national guidance, examples of good practice and patient leaflets, and it will now be updated.

Rationale

The safe and appropriate use of donor blood and alternatives to donor blood are important public health and clinical governance issues:

- Appropriate blood transfusion is an essential support to many clinical treatments and may be life-saving.
- Donated blood is a limited resource. Blood supplies may be reduced as a result of further measures that may have to be taken to reduce the risk of transmission of vCJD by blood transfusion, such as the introduction of a screening test and further restrictions on the eligibility of blood donors.
- The safety of blood transfusion is highlighted yearly through the Serious Hazards of Transfusion (SHOT) scheme (a confidential enquiry for the reporting of serious complications of blood transfusion and near miss events in the UK). This scheme has shown that avoidable, serious hazards of blood transfusion, although decreasing, continue to occur. The incidence of ABO-incompatible red cell transfusions appears to be reducing, most likely due to greater attention to detail during the transfusion process including the pre-transfusion bedside check, but there are still too many "incorrect blood component transfused" errors and further measures need to be taken by NHS Trusts, including the implementation of the recommendations in the National Patient Safety Agency (NPSA) Safer Practice Notice (SPN) *Right Patient – Right Blood* -

www.npsa.nhs.uk/site/media/documents/2009_0316FEB06_V20_WEB.pdf. This SPN emphasises the importance of the final pre-transfusion bedside check, and the need for NHS Trusts to consider the use of information technology to improve transfusion safety and ensure that all relevant staff are trained and undergo regular competency assessment.

- There is continued wide variation in the use of blood despite the existence of national and local clinical guidelines on its appropriate use. There has been good progress in reducing the use of red cell transfusions (around 16% in the last 5 years). This is mainly due to a reduction in blood use in surgery, and similar efforts are now needed in other clinical specialties, in particular medicine which now accounts for over 60% of red cell usage. Similar reductions in usage have not been seen with fresh frozen plasma or platelet transfusions, and efforts are needed to avoid inappropriate usage of these blood components.
- Attention should also be focussed on the identification and treatment of iron deficiency anaemia in pregnancy and reducing errors in relation to anti-D prophylaxis.
- The Blood Safety and Quality Regulations (2005) put additional requirements on transfusion services for transfusion safety and quality, and these are currently monitored by the Medicines and Healthcare products Regulatory Agency (MHRA).
- An evidence-base for appropriate transfusion is starting to emerge, but there is a need for more and better clinical research to underpin best clinical practice guidelines.

ACTION

- This guidance is addressed to all NHS Trusts providing blood transfusion and managing patients who may need transfusion

- Primary Care Trusts (PCTs) and acute NHS Trusts should work together to implement the *Better Blood Transfusion* action plan

- NHS acute Trust Boards should formally review arrangements for *Better Blood Transfusion* and the appropriate use of blood at least annually

- Strategic Health Authorities have an important role to play in ensuring arrangements are in place for delivery

- NHS Blood and Transplant (NHSBT) has an important supporting role in the implementation of the *Better Blood Transfusion* action plan

Progress is expected in all areas by November 2008, when the first national audit of compliance will be undertaken. Annual audits will be conducted thereafter until 2012.

GUIDANCE

- Foundation Trusts are advised to take note of the contents of this HSC.

ACTION PLAN

- **Ensure that *Better Blood Transfusion* is an integral part of NHS care**

Objective	Action	By whom
Secure appropriate arrangements for *Better Blood Transfusion* and the appropriate use of blood	• Obtain senior management and NHS Trust Board commitment	Chief Executives of NHS Trusts working with HTCs and HTTs
	• Secure appropriate membership and functioning of the Hospital Transfusion Committee (HTC) and Hospital Transfusion Team (HTT) including staffing and resources (see Annex A)	Chief Executive of NHS Trusts working with HTCs and HTTs
	• Ensure the HTT develops and implements an action plan for compliance with national requirements for transfusion safety and quality including the UK Blood Safety and Quality Regulations (2005) and National Patient Safety Agency (NPSA) initiatives	Chief Executives of NHS Trusts working with clinical governance and risk management leads, HTCs and HTTs
	• Ensure the HTT produces an annual report including its achievements, action plan for transfusion safety, quality and blood conservation and its resource requirements for consideration by senior management at Board level through the HTC and the NHS Trust's clinical governance and risk management arrangements	Chief Executives of NHS Trusts working with clinical governance leads, HTCs and HTTs

	• Ensure that appropriate blood transfusion policies are in place, implemented and monitored	HTCs and HTTs working with clinical governance leads
	• Ensure that education and training are provided to all staff involved in the process of blood transfusion and is included in the induction programmes for relevant new staff	HTCs and HTTs working with clinical governance leads
	• Ensure that procedures are in place for managing Jehovah's Witness and other patients refusing blood	HTCs and HTTs working with clinical governance leads
Improve the quality of service provision through clinical audit and continuing professional development	• Ensure blood transfusion is included in clinical multi-disciplinary audit and CPD programmes for NHS Trust staff	HTCs and HTTs working with clinical governance leads
	• Ensure participation in the Blood Stocks Management Scheme (BSMS) and active utilisation of its and other data on blood stock management, wastage and blood utilisation	HTCs and HTTs working with blood transfusion laboratories
	• Ensure participation in the national comparative audit programme for blood transfusion organised by the Royal College of Physicians and NHSBT	HTCs and HTTs working with clinical governance leads

- **Make blood transfusion safer**

Objective	Action	By whom
Continuously improve the safety of the blood transfusion process, taking advantage of developments in technology	• Ensure that policies and technologies to secure accurate patient identification throughout the transfusion process are risk assessed, implemented and monitored to comply with NPSA recommendations	Chief Executives of NHS Trusts working with clinical governance and risk management leads, clinicians, and other relevant hospital staff, blood transfusion laboratories, HTCs and HTTs
	• Ensure that all relevant staff (excluding laboratory staff – see below) are assessed at least every 3 years for their competency in safe transfusion practice according to their role and responsibilities in line with NPSA recommendations	HTCs and HTTs working with clinical governance leads
	• Ensure good and safe hospital transfusion laboratory practice including participation in national laboratory accreditation schemes	HTCs and HTTs working with pathology managers
	• Participate in future benchmarking exercises to identify appropriate staffing and skill mix against workload	HTCs and HTTs working with pathology managers
	• Ensure adequate staffing of hospital transfusion laboratories including out of hours	Pathology managers working with HTCs and HTTs
	• Ensure that staff working in blood transfusion laboratories have a documented record of satisfactory initial competency assessment prior to working unsupervised, and regular (annual) reassessment of	Pathology managers working with HTCs and HTTs

	competency • Carry out regular (at least annual) local audits of key steps in the transfusion process, including sample labelling and the pre-transfusion bedside check, and participate in national audits of the transfusion process	 HTTs
Ensure that reporting of serious adverse events to blood transfusion and near misses is being undertaken	• Ensure that adverse events to transfusion and near misses are appropriately investigated and reported to local risk management, SHOT and the MHRA via the Serious Adverse Blood Reactions and Events (SABRE) system • Ensure timely feedback to users on lessons learnt and preventive measures	Chief Executives of NHS Trusts working with clinical governance and risk management leads, clinicians, hospital staff, blood transfusion laboratories, HTCs and HTTs HTCs and HTTs

- **Avoid the unnecessary use of blood and blood components in medical and surgical practice**

Objective	**Action**	**By whom**
Ensure the appropriate use of blood and the use of effective alternatives in every clinical practice where blood is transfused	• Implement existing national guidance (see Annex A) on the appropriate use of blood and alternatives • Ensure that guidance is in place for the medical and surgical use of red cells, and other blood components such as platelets and fresh frozen plasma • Ensure regular monitoring and audit of usage of red cells, platelets and fresh frozen plasma in all clinical specialities	HTCs and HTTs working with clinicians HTCs and HTTs working with clinicians HTCs and HTTs working with clinicians

	• Establish local protocols to empower blood transfusion laboratory staff to ensure that appropriate clinical information is provided with requests for blood transfusion.	HTCs and HTTs working with clinicians, pathology managers and blood transfusion laboratories
	• Establish local protocols to empower blood transfusion laboratory staff to query clinicians about the appropriateness of requests for transfusion against local guidelines for blood use	HTCs and HTTs working with clinicians, pathology managers and blood transfusion laboratories
Secure appropriate and cost-effective provision of blood transfusion and alternatives in surgical care	• Ensure that mechanisms are in place for the pre-operative assessment of patients for planned surgical procedures to allow the identification, investigation and treatment of anaemia and the optimisation of haemostasis	HTCs and HTTs working with clinicians, pathology and other hospital managers
	• Ensure that an agreed list of indications for transfusion are established in collaboration with key clinical specialities, and are implemented and monitored	HTCs and HTTs working with clinicians
	• Develop a blood conservation strategy including the use of point-of-care testing for haemoglobin concentration and haemostasis and alternatives to donor blood such as peri-operative cell salvage and pharmacological agents such as anti-fibrinolytics and intravenous iron	HTCs and HTTs working with clinicians, pathology and other hospital managers
	• Ensure that the blood conservation strategy is implemented	HTCs and HTTs working with clinicians

- **Improve the Safety of Blood Transfusion in Obstetrics**

Objective	Action	By whom
Improve the safety and effectiveness of blood transfusion in obstetric practice, including the prescription and administration of anti-D immunoglobulin	• Ensure procedures for the prescription and administration of anti-D immunoglobulin in hospitals and primary care are risk assessed and monitored	Chief Executives of acute NHS Trusts and PCTs, risk management leads, hospital transfusion laboratories, pharmacies, HTCs and HTTs
	• Ensure that clinicians in hospitals and primary care are trained to carry out antenatal testing and prescribe prophylactic anti-D immunoglobulin (antenatal and postnatal) appropriately	HTCs and HTTs working with blood transfusion laboratories and clinical governance leads in acute NHS Trusts and PCTs
	• Ensure that staff in blood transfusion laboratories are trained and assessed for competency on an annual basis in the prevention and laboratory management of haemolytic disease of the newborn (HDN) based on knowledge and technical skills	Pathology managers working with blood transfusion laboratories and HTCs and HTTs
	• Ensure that national guidance from NICE regarding the use of prophylactic anti-D is implemented and audited	Chief Executives of acute NHS Trusts and PCTs, risk management leads, hospital and primary care clinicians (obstetricians, GPs, midwives and nurses), hospital transfusion laboratories, pharmacies, HTCs and HTTs
	• Ensure the use of anti-D immunoglobulin follows the same rigorous patient identification, recording and traceability requirements as all other blood products and components	HTCs and HTTs working with risk management leads, and pathology manager

	• Ensure the establishment of procedures for the identification and management of maternal anaemia in particular with correction of iron deficiency in the antenatal and postnatal period	HTCs and HTTs working with hospital and primary care clinicians (obstetricians, general practitioners, midwives and nurses), hospital pharmacies and pathology managers

- **Increase Patient and the Public Involvement in Better Blood Transfusion**

Objective	**Action**	**By whom**
Ensure patients who are likely to receive a blood transfusion are informed of their choices	• Ensure that timely information is made available to patients, informing them of the indication for transfusion, the risks and benefits of blood transfusion, and any alternatives available	HTCs working with clinicians, patients groups and PCTs
Increase patient awareness of the need for correct patient identification for transfusion safety	• Ensure that patients are aware of the need to wear an identity name band and to be correctly identified at all stages of the transfusion process	HTCs and HTTs working with clinicians
Increase patient and public awareness in blood transfusion	• Ensure that NHS Trusts participate in local, regional and national Transfusion Awareness initiatives to increase patient and public involvement in blood transfusion	HTCs and HTTs working with clinical governance leads

- **Monitoring of the arrangements for *Better Blood Transfusion* and their effectiveness**

Objective	**Action**	**By whom**
Support the safe and appropriate use of blood and alternatives	• Ensure that services for *Better Blood Transfusion* being provided are operating effectively and are part of local performance management arrangements	Strategic Health Authorities (SHAs) working with NHS Trusts

	• Participate in national comparative audits of transfusion practice	HTCs and HTTs
	• Participate in the BSMS	HTCs and HTTs working with blood transfusion laboratories
	• Participate in national and regional surveys of the implementation of the action plan in *Better Blood Transfusion*	HTCs and HTTs

- **External support required to ensure the delivery of *Better Blood Transfusion***

Objective	**Action**	**By Whom**
NHSBT to provide support for HTTs	• NHSBT to maintain and further develop a support network for HTCs and HTTs for the provision of clinical and specialist advice, information and sharing of good practice	NHSBT working with the National Blood Transfusion Committee (NBTC), the Regional Transfusion Committees (RTCs) and HTCs and HTTs
	• NHSBT to work with the NBTC, RTCs, HTCs and HTTs to identify the potential for blood shortages, either general shortages of all blood components or of specific components such as FFP or O RhD negative red cells, and take appropriate action to prevent them	NHSBT working with the NBTC, RTCs, HTCs and HTTs
The NBTC and RTCs to support HTTs	• The NBTC and RTCs should support HTCs and HTTs by providing information and advice on the implementation of national recommendations and regulations, blood	The NBTC and RTCs working with HTCs and HTTs and NHSBT

	conservation, contingency and emergency planning, new developments and clinical research	
	• Ensure that representatives of the HTC and HTT can attend RTCs and NBTC working group meetings	Chief Executives of NHS Trusts with HTCs and HTTs
	• The NBTC and RTCs should support HTTs by supporting comparative audit and the sharing of data	The NBTC and RTCs working with HTCs and HTTs, NHSBT national audit programmes and the BSMS
Increase the evidence base for clinical transfusion practice	• Promote high quality clinical research on the safe and effective use of blood, particularly in clinical specialities with high or complex blood requirements e.g. haemato-oncology, trauma, intensive care, obstetrics and paediatrics	NHSBT, the National Institute of Healthcare Research (NIHR), Royal Colleges, professional societies, NBTC, research funding bodies in conjunction with clinicians in all relevant disciplines

Background

The Chief Medical Officer's third *Better Blood Transfusion* conference was held on 16th March 2007. The event was jointly organised by the Department of Health and NHS Blood and Transplant and chaired by the four UK Chief Medical Officers. The aim of this multidisciplinary conference was to share views on how clinical blood transfusion practice could be improved with the following aims:

- Build on the success of previous *Better Blood Transfusion* initiatives to further improve the safety and effectiveness of transfusion
- Ensure that *Better Blood Transfusion* is an integral part of NHS care
- As part of clinical governance responsibilities, make blood transfusion safer
- Avoid the unnecessary use of blood components (fresh frozen plasma and platelets as well as red cells) in medical and surgical practice
- Provide better information to patients and the public about blood transfusion

A survey of acute NHS Trusts in England of progress that had been made in blood transfusion practice since the second *Better Blood Transfusion* seminar in 2001 was presented at the conference.

It highlighted that in some areas of blood transfusion practice, there was very good progress with an increase in the following:

- Hospital Transfusion Committees
- Transfusion Practitioners
- The number of staff who have received transfusion training
- The development of protocols for the appropriate use of blood
- Transfusion audit activity
- Clinical Pathology Accreditation (CPA) of hospital transfusion laboratories
- The number of NHS Trusts indicating that patient information is provided to patients attending pre-assessment clinics

The survey indicated the need for further progress in the following areas:-

- Training of staff
- The development of Hospital Transfusion Teams, including a transfusion practitioner and lead consultant for transfusion
- The development of protocols for the appropriate use of blood
- The provision of information to patients
- Intra-operative cell salvage

The results of the survey, presentations and conclusions from the conference workshops can be found on the *Better Blood Transfusion* section of the www.transfusionguidelines.org.uk website.

Associated Documentation

ANNEX A – Information for Implementation of Better Blood Transfusion: updated from the Health Service Circular *Better Blood Transfusion – Appropriate Use of Blood* (HSC 2002/009)

This Circular has been issued by:

Sir Liam Donaldson
Chief Medical Officer

ANNEX A

Information for Implementation of *Better Blood Transfusion*

Managing *Better Blood Transfusion* in NHS Trusts

1. NHS Trusts involved in blood transfusion should establish a **Hospital Transfusion Committee** (HTC) (or share a committee with another NHS Trust) with the authority and resources to take the necessary actions to improve transfusion practice. HTCs should meet at least 3 times/year. The membership should include the members of the Hospital Transfusion Team (HTT) and representatives from clinical areas where blood transfusions are frequently used including medicine, surgery, obstetrics and paediatrics, and also from senior management and clinical governance/risk management.

An HTC should:

- Promote safe and appropriate blood transfusion practice through local protocols based on national guidelines

- Audit the practice of blood transfusion against the NHS Trust policy and national guidelines, focusing on critical points for patient safety and the appropriate use of blood

- Lead multi-professional audit of the use of blood within the NHS Trust, focusing on specialities where demand is high, including medical as well as surgical specialities, and the use of platelets, plasma, and other blood components as well as red cells

- Regularly review and take appropriate action on data on blood stock management, wastage and blood utilisation provided by the Blood Stocks Management Scheme (BSMS) and other sources

- Provide feedback on audit of transfusion practice and the use of blood to all NHS Trust staff involved in blood transfusion

- Develop and implement a strategy for the education and training for all clinical, laboratory and support staff involved in blood transfusion

- Promote patient education and information on blood transfusion including the risks of transfusion, blood avoidance strategies and the need to be correctly identified at all stages in the transfusion process

- Modify and improve blood transfusion protocols and clinical practice based on new guidance and evidence

- Be a focus for local contingency planning for and management of blood shortages

- Report regularly to Regional Transfusion Committees (RTC), and through them, to the National Blood Transfusion Committee (NBTC)

- Participate in the activities of the RTCs

- Consult with local patient representative groups where appropriate

- Contribute to the development of clinical governance

2. NHS Trusts involved in blood transfusion should implement arrangements for promoting good transfusion practice through the development of an effective clinical infrastructure, including the establishment of a HTT. The HTT should consist of:

- **Lead consultant for transfusion** (with funded sessions dedicated to blood transfusion),
- **Hospital transfusion practitioners** or equivalent (e.g. nurses, biomedical scientists, medical professionals); the number of these staff depending on the size of the NHS Trust,
- **Blood transfusion laboratory manager,**
- Other members of the HTC can be co-opted.

There should be identified clerical, technical, managerial and information technology support as required, and access to audit and training resources to promote and monitor the safe and effective use of blood and alternatives to blood transfusion.

The role of the HTT is to:

- Implement the HTCs objectives

- Promote and provide advice and support to clinical teams on the safe and appropriate use of blood

- Promote patient information and education on blood transfusion safety and use of alternatives

- Actively promote the implementation of good transfusion practice

- Be a source for training all NHS Trust staff involved in the process of blood transfusion

- Produce an annual report including its achievements, action plan and resource requirements for consideration by senior management at Board level through the HTC and the Trust's clinical governance and risk management arrangements

3. Large NHS Trusts or Trusts with more than one site will need to ensure they have adequate staffing of the HTT to ensure that good transfusion practice is implemented in all clinical areas. Further information on the roles of the

members of the HTT will be made available through the *Better Blood Transfusion* website.

4. If a HTC or HTT and its members cover more than one NHS Trust, arrangements should be in place to ensure that there is sufficient cross-Trust representation. Trusts should also ensure that there are adequate resources and mechanisms for ensuring the safe, effective and appropriate use of blood at all the Trust sites involved in blood transfusion.

5. HTCs should implement good transfusion practice through NHS Trusts' frameworks for clinical governance, performance and risk management, and compliance with NHS Litigation Authority (NHSLA) standards for Trusts and Clinical Pathology Accreditation (CPA) standards, and the requirements of the Medicines and Healthcare products Regulatory Authority (MHRA) and the National Patient Safety Agency (NPSA).

6. Senior NHS Trust management should be represented on the HTC. There should be HTC representation on the NHS Trust's clinical governance/risk management committee, and the Chair of the HTC should be invited to present an annual report on blood transfusion.

7. HTCs should work in a partnership with blood users, Blood Services and patients to improve the safety and appropriateness of blood transfusion.

8. HTCs should participate in the activities of the RTCs and the NBTC for implementing and monitoring good transfusion practice.

Training and Education

9. NHS Trusts should provide regular documented training and competency assessment in safe and appropriate transfusion practice for all staff involved in the transfusion process from blood sample collection to blood administration and the monitoring of patients during transfusion episodes (including phlebotomists, laboratory staff, porters, nurses and medical staff) in line with national guidelines and the NPSA's Safer Practice Notice (SPN) *Right Patient – Right Blood* (www.npsa.nhs.uk/health/display?contentId=5354). Examples of training modules and how they may be accessed will be made available through the *Better Blood Transfusion* website.

10. NHS Trusts should ensure that blood transfusion is included in clinical multi-disciplinary audit and Continuous Professional Development (CPD) programmes for NHS Trust staff.

11. NHS Trusts should ensure that blood transfusion is included in the induction and orientation programmes for all relevant new staff.

Patient Information

12. NHS Trusts should provide timely written information about blood transfusion and its alternatives, wherever possible, to patients at risk of a blood

transfusion. Patients should be encouraged to ask questions about blood transfusion.

Under medical law, healthcare providers must warn patients of the risk of variant Creutzfeldt-Jakob Disease (vCJD) infection through transfusion if this is regarded as a significant risk so that the patient can determine for him or herself whether to receive the transfusion. If the healthcare worker has not warned the patient of this risk, and the patient then goes on to develop vCJD, the patient could bring a successful claim in damages.

In addition, patients should be made aware of the importance of iron deficiency and its correction in relation to transfusion avoidance in pregnancy and surgery. Patients should also be informed of the option of cell salvage where appropriate.

13. National leaflets can be used and adapted for local use. An example of these and contacts for examples of leaflets for specific patient groups will be made available through the NHSBT Hospitals and Science website www.hospital.blood.co.uk

14. The NBTC is promoting strategies for national patient transfusion awareness aimed at involving patients and the public in blood transfusion. Various promotional material including posters and leaflets are available through the *Better Blood Transfusion* Toolkit section of the www.transfusionguidelines.org.uk website.

Guidelines for Good Practice and Standards

15. NHS Trusts should have agreed and disseminated protocols for safe and appropriate transfusion practice, based on national guidelines and supported by in-house training. Guidelines should include the indications for transfusion, the complete transfusion process from blood sample collection to its administration, the monitoring required during transfusion, and the documentation required in the clinical records.

16. Trusts should adopt national guidelines for the appropriate use of blood.

17. The following national guidelines and websites for the safe, effective and appropriate use of blood are recommended to all NHS Trusts. These and additional guidelines, where available electronically, will be linked through the *Better Blood Transfusion* website www.transfusionguidelines.org.uk.

- Scottish Intercollegiate Guidelines Network. **Perioperative Blood Transfusion for Elective Surgery – A national clinical guideline.** Number 54. 2001. www.sign.ac.uk/

- The Association of Anaesthetists of Great Britain and Ireland. ***Blood Transfusion and the Anaesthetist. Red Cell Transfusion.*** 2001. www.aagbi.org/publications/guidelines

- The Association of Anaesthetists of Great Britain and Ireland. ***Blood Transfusion and the Anaesthetist. Blood Component Therapy.*** 2005. www.aagbi.org/publications/guidelines

- British Committee for Standards in Haematology, Blood Transfusion Task Force. ***Guidelines for the administration of blood and blood components and the management of transfused patients.*** Transfusion Medicine 1999; 9:227-238. www.bcshguidelines.com

- British Committee for Standards in Haematology, Blood Transfusion Task Force. ***Guidelines for the clinical use of red cell transfusion.*** British Journal of Haematology 2001; 113:24-31. www.bcshguidelines.com/

- British Committee for Standards in Haematology, Blood Transfusion Task Force. ***Guidelines for the use of platelet transfusions***. British Journal of Haematology 2003; 122: 10-23. www.bcshguidelines.org

- British Committee for Standards in Haematology, Blood Transfusion Task Force**. *Guidelines for the use of fresh frozen plasma and cryoprecipitate***. British Journal of Haematology 2004; 126:11-28. www.bcshguidelines.org

- ***Handbook of Transfusion Medicine.*** Fourth Edition, 2007. www.transfusionguidelines.org.uk

- Joint National Institute of Biological Standards and Control and United Kingdom Blood Transfusion Services guidelines website hosts the websites for the NBTC and the RTCs as well as for *Better Blood Transfusion*. www.transfusionguidelines.org.uk

Safety

All NHS Trusts that undertake blood transfusion:

18. Should participate in the Serious Hazards of Transfusion (SHOT) scheme on the reporting of serious and near miss events (www.shotuk.org), and fulfil the MHRA's requirements for reporting adverse reactions and events (SABRE).

19. Should ensure that all patients (including outpatients) receiving a blood transfusion have a patient identification wristband or equivalent, and are monitored during transfusion according to national guidelines, and the recommendations of the NPSA's SPN *Right Patient – Right Blood*. www.npsa.nhs.uk/health/display?contentId=5354.

20. Should ensure good hospital transfusion laboratory practice including the avoidance of laboratory errors recently highlighted by SHOT, and encourage participation in national laboratory accreditation schemes.

Audit

All NHS Trusts undertaking blood transfusion should:

21. Carry out regular multidisciplinary audit of transfusion practice and regularly feed back the results of audits of transfusion practice and the use of blood to relevant staff and ensure that improvements suggested by audit are put in place.

22. Participate in the joint Royal College of Physicians and the NHSBT National Comparative Audit of Blood Transfusion programme of audits on the safety and the use of blood. Information is available on the NHSBT Hospitals and Science website www.hospital.blood.co.uk.

23. Participate in the BSMS (www.bloodstocks.co.uk), and use the data to optimise the blood stock management and use of blood and blood components, and minimise blood wastage.

Monitoring and traceability

24. NHS Trusts should ensure that there is routine data recording and collection to enable:

- The traceability of blood according to the UK Blood Safety and Quality Regulations (2005)
- the monitoring of the safe, and appropriate use of blood and blood components

25. Trusts should review and explore the development of electronic blood tracking systems, as recommended by the NPSA's SPN *Right Patient – Right Blood* www.npsa.nhs.uk/health/display?contentId=5354.

26. NHS Trusts should ensure that a minimum dataset for each transfusion is documented in the clinical notes (indication for transfusion, amount of blood transfused, assessment of the effectiveness of the transfusion, and any adverse effects and their management).

27. NHS Trusts should ensure that the clinical indication for transfusion is provided on every request form for blood transfusion, and that blood transfusion laboratories are empowered to query clinicians about the appropriateness of transfusion.

Pre–operative assessments, use of patient's own blood and alternatives to blood transfusion

28. NHS acute Trusts and Primary Care Trusts (PCTs) should ensure that there are adequate arrangements for the pre-operative assessment of patients. For planned surgery, the arrangements for pre-operative assessment should permit the diagnosis and correction of anaemia in advance of surgery and optimisation of haemostatic function peri-operatively (including

discontinuation of anti-platelet drugs and haematological advice for patients on oral anticoagulation).

29. Most patients undergoing elective surgery should not require transfusion support if their pre-operative haemoglobin level is normal. Formulae are available to calculate individual patients' transfusion requirements depending on the predictable blood loss from the procedure, and patient characteristics. The use of such formulae should allow each surgical team to set its own parameters for transfusion, and allow their use of blood to be audited to these parameters. Further information will be available through the *Better Blood Transfusion* website.

30. NHS Trusts should develop and implement a strategy for blood conservation including the use of point-of-care testing for haemoglobin concentration and haemostasis to determine if transfusion is necessary, and alternatives to donor blood such as peri-operative and post-operative cell salvage and pharmacological agents such as anti-fibrinolytics and intravenous iron. Further information will be made available on the *Better Blood Transfusion* website www.transfusionguidelines.org.uk.

31. Trusts must ensure that patients are informed about transfusion avoidance strategies including identification and correction of iron deficiency anaemia and cell salvage where appropriate. Specific information leaflets about 'Iron in your Diet' and the NPSA's 'Please Ask about Blood Transfusion and Surgery' could be used to support information given to patients in preoperative assessment clinics. These are available on the *Better Blood Transfusion* website www.transfusionguidelines.org.uk.

Better Blood Transfusion Toolkit

32. A toolkit to assist NHS Trusts in the implementation of the actions outlined in this Health Service Circular (HSC) can be found on the www.transfusionguidelines.org.uk website. It provides access to national guidance, examples of good practice, and is regularly updated.

Regional and National Transfusion Committees

33. The overall objective of the NBTC and the RTCs is to promote safe and appropriate transfusion practice in accordance with the *Better Blood Transfusion* initiative and with the action plan in this HSC.

34. The committees provide a framework to channel information and advice to hospitals on best practice and performance monitoring. The RTCs support the activities of the HTCs and HTTs within their region. Further information about the activities of these committees is available on the NBTC and RTCs section of the www.transfusionguidelines.org.uk website.

NHS Blood and Transplant

35. Important supporting arrangements for HTCs and HTTs for *Better Blood Transfusion* are provided by the NHSBT (through its Patients Clinical Team Consultants, Hospital Liaison Managers and Transfusion Liaison Nurses).

36. NHSBT, working with the NBTC, the National Institute of Healthcare Research (NIHR), Royal Colleges and professional societies and relevant funding bodies, should actively support clinical research on the safe and appropriate use of blood.

Recommendations requiring further work

37. The need for further work to support the *Better Blood Transfusion* initiative was highlighted at the CMOs' Seminar. Several of the following areas are already in initial development and will be placed on the *Better Blood Transfusion Toolkit* when progressed.

- Explore the application of new techniques to improve the safety and effectiveness of transfusion practice

- Development of electronic systems to improve the safety of blood transfusion and to monitor the appropriate use of blood. Examples of progress in this area is available on the *Better Blood Transfusion* (www.transfusionguidelines.org.uk) website

- Revision of a tool for accessing the 'resources' required to implement *Better Blood Transfusion* at Trust level (e.g. the make-up in 'sessional' time of a HTT and the required supporting services)

- Ensure prompt evaluation and implementation of new technologies for fetal RhD typing from maternal blood to reduce unnecessary routine anti-D prophylaxis

- Development of national training and educational materials, including e-learning programmes

- Continued development of patient information leaflets and transfusion awareness tools

- The development of performance standards for aspects of transfusion safety in hospitals e.g. blood sample collection and pre-transfusion bedside checking

- Commissioning of high quality clinical research (systematic reviews and clinical trials) on safe and effective transfusion practice including the alternatives to blood transfusion

- Further work to prevent transfusion laboratory errors, as highlighted by successive SHOT reports

Abbreviations

BSMS – Blood Stocks Management Scheme
CMO – Chief Medical Officer
CPA – Clinical Pathology Accreditation
CPD – Continuous Professional Development
HDN – Haemolytic disease of the newborn
HSC – Health Service Circular
HTC – Hospital Transfusion Committee
HTT – Hospital Transfusion Team
MHRA – Medicines and Healthcare products Regulatory Authority
NHSBT – NHS Blood & Transplant
NHSLA – NHS Litigation Authority
NBTC – National Blood Transfusion Committee
NICE – National Institute for Health and Clinical Excellence
NIHR – National Institute of Healthcare Research
NPSA – National Patient Safety Agency
PCT – Primary Care Trust
RTC – Regional Transfusion Committee
SABRE – Serious Adverse Blood Reactions and Events
SHA – Strategic Health Authority
SPN – Safer Practice Notice
SHOT – Serious Hazards of Transfusion
VCJD – Variant Creutzfeldt-Jakob Disease