The National Blood Transfusion Committee (NBTC) provides a national focus for progressing transfusion-related issues, enabling the transfusion community to act in a co-ordinated fashion, for example on transfusion safety and the implementation of blood conservation, contingency and emergency planning, new information technology (IT) and initiatives for training and clinical research. The NBTC monitors the performance of NHS Blood & Transplant (NHSBT), and receives reports on areas of activity in transfusion which have an impact on its work, such as the Serious Hazards of Transfusion (SHOT) scheme, the National Comparative Audit Programme and the National Commissioning Group (NCG).

The Terms of Reference for the NBTC and Regional Transfusion Committees (RTCs) were updated in 2013 to reflect new working arrangements.

In October 2014, Dr Jonathan Wallis (Consultant Haematologist, Newcastle upon Tyne Hospitals NHS Foundation Trust) took over from Professor Adrian Newland as Chairman of the NBTC, and in March 2015 Dr Kate Pendry (Consultant Haematologist, NHSBT, Manchester) took over as Secretary from Professor Mike Murphy.

Committee Meetings and Working Groups
The NBTC met twice during 2014/15. The Executive Working Group of the NBTC met twice, and the Regional Transfusion Committee (RTC) Chairs Group met twice. Current Working Groups are established for Patient Involvement, Transfusion Laboratory Managers, Patient Blood Management (PBM), Education, and NPSA SPN 14 Review.

Work of the NBTC in 2014/15
The NBTC has an annual work plan setting out objectives and actions to support the NBTC strategy which remains focussed to support the PBM initiative (see below).

The Working Groups also develop individual workplans which are available on the NBTC website www.transfusionguidelines.org.uk.

Regional Transfusion Committees
The RTCs are key to the promotion of better transfusion practice. Additional financial support was provided in 2006/07 to enable:-

- The establishment of sections for the NBTC and RTCs on the www.transfusionguidelines.org.uk website to facilitate dissemination and sharing of information (the full link to the NBTC site is provided at the end of this report).
- Increased support for regional audit.
- Dedicated RTC administrative support.

The combination of the website and the administrative support has facilitated much more effective communication from the NBTC to the RTCs and to Hospital Transfusion Committees, and it has been agreed that funding will continue for this support to RTCs. Additional financial support was identified in 2014/15 to support PBM initiatives (see below).

The boundaries of the RTCs were realigned in 2006/07 to reflect the boundaries of the ten Strategic Health Authorities, and these boundaries will continue to be used for the RTCs following the reorganisation of the NHS in 2013. Continuing concerns expressed
by RTC Chairs from their membership in the last year included the effect on transfusion laboratories and transfusion practice through pathology modernisation initiatives focussed on high throughput pathology services and cost saving, the challenge of engaging hospitals in PBM, the delays in the updating of the NBTC and RTCs website, and the difficulty in identifying patient representatives for RTCs.

**Patient Blood Management (PBM)**

PBM is an evidence-based, multidisciplinary approach to optimising the care of patients who might need transfusion. It puts the patient at the heart of decisions made about blood transfusion to ensure they receive the best treatment and avoidable, inappropriate use of blood and blood components is reduced. It represents an international initiative in best practice for transfusion medicine.

**Patient Blood Management: The Future of Blood Transfusion** conference was held on 18 June 2012. The event was jointly hosted by the Department of Health, the National Blood Transfusion Committee (NBTC) and NHS Blood and Transplant (NHSBT) and supported by Professor Sir Bruce Keogh, NHS Medical Director.

The aim of the multi-disciplinary conference was to share views on how blood transfusion practice could be improved to:

- Build on the success of previous *Better Blood Transfusion* initiatives and to further promote appropriate use of blood components.
- Improve the use of routinely collected data to influence transfusion practice.
- Provide practical examples of high quality transfusion practice and measures for the avoidance of transfusion, wherever appropriate.
- Consider the resources needed to deliver better transfusion practice including support from NHSBT.
- Understand the patient perspective on transfusion practice.

A survey of NHS Trusts about their PBM practices was conducted in 2013. The main findings were published in the NBTC Annual Report for 2013/14 and are on its website, and indicate considerable potential to increase PBM activities in Trusts. A national audit of surgical PBM activities in NHS Trusts will be conducted in 2015/16.

In June 2014, the initial recommendations from the NBTC about how the NHS should start to implement *Patient Blood Management* were endorsed by NHS England and issued to hospitals. [http://www.transfusionguidelines.org.uk/uk-transfusion-committees/national-blood-transfusion-committee/patient-blood-management](http://www.transfusionguidelines.org.uk/uk-transfusion-committees/national-blood-transfusion-committee/patient-blood-management)

The National Institute for Health and Clinical Excellence (NICE) is developing guidelines for blood transfusion, which will be published in 2015 and are expected to lead to the development of quality standards for transfusion. Further details are available on: [http://guidance.nice.org.uk/CG/Wave0/663](http://guidance.nice.org.uk/CG/Wave0/663)

Funding from NHSBT was agreed in 2013/14 for 3 projects proposed by the PBM Working Group:

- The expansion of the National Comparative Audit team to support national PBM audits (£34,000 per annum).
- The implementation of preoperative anaemia management in the hospitals in the North West RTC (£26,000).
- Clinical benchmarking to gain a better understanding of blood demand (£45,000).

Additional projects include developing a Smartphone Application to assist doctors with implementation of PBM supported by NHSBT Trust Funds, implementation of a single unit red cell transfusion policy in a large London Trust, and a project with CliniSys to
provide regular data for blood use audit through electronic queries of hospital information systems including those in blood transfusion laboratories.

A joint NHSBT/NBTC work plan for PBM has been developed.

**Appropriate Use of Blood**
During 2014/15, there was a decrease of 2.6% in the number of red cell units issued to hospitals in England and North Wales, compared to a decrease of 4.3% in 2013/14. During the last year, the usage of fresh frozen plasma (FFP) decreased by 2.4% compared to a decrease of 2.1% in 2013/14, and the usage of platelets increased by 1.3% compared to an increase of 1.4% in 2013/14.

National and regional audits of the use of red cell, platelet and FFP transfusions continue to indicate 20% or more inappropriate use of these blood components. Further initiatives are required to minimise this inappropriate usage both on grounds of both patient safety and cost reduction.

**National comparative audit of blood transfusion**
The focus of the NHSBT/Royal College of Physicians National Comparative Audit of Blood Transfusion (NCABT) programme is to conduct audits of the safe and appropriate use of blood.

**Overview of 2013 audit of Anti-D Immunoglobulin Prophylaxis**
This was an audit that inquired if all eligible women received the right dose of routine antenatal anti-D prophylaxis (RAADP) at the right time, had extra anti-D Ig in the event of a potentially sensitising event (PSE) backed up by a Kleihauer test, and had postnatal anti-D Ig if indicated. It also examined the practice of recording consent to receive anti-D Ig and the provision of information.

As recommended by NICE, all audited sites have introduced RAADP and the majority of sites (94%) are using the single-dose regime. Excluding women who had immune anti-D and those who declined RAADP, there were 52 women at risk of developing immune anti-D because there was no auditable documentation that RAADP had been given. This is 1% of all RhD negative women eligible for RAADP.

Post-delivery prophylaxis was given to 98.4% of RhD negative women delivering RhD positive babies and 97% of women in this group had a Kleihauer test for fetomaternal haemorrhage estimation. Where the FMH result was available 97% of deliveries had less than 4mL fetal red cells [RBCs] in the maternal circulation and 15 women (0.5% eligible women) needed additional anti-D Ig to cover the estimated FMH because the standard post-delivery dose was insufficient to cover the confirmed FMH.

Anti-D Ig was given to 95.8% of women who had documented PSEs and 87% of of PSEs after 20 weeks had a Kleihauer test for fetomaternal haemorrhage estimation. Where the FMH result was available 98.4% had less than 4mL fetal RBCs in the maternal circulation. Follow-up testing and possible additional anti-D may have been required in 1.6% of PSEs which is more difficult in pregnancy because the RhD group of the fetus is unknown.

The audit findings reflect that most anti-D immunoglobulin prophylaxis is delivered correctly and RhD negative women should be reassured that this is an important and effective programme that prevents a serious and life-threatening condition which used to affect large numbers of babies but no longer does.
Overview of 2014 audit of Patient Information & Consent

This audit was commissioned by SaBTO to look at the information provided to transfused patients and how consent for transfusion was obtained and recorded. 132 sites were able to contribute both organisational and clinical data, while some provided either one or the other: 141 sites completed the organisational survey with the majority (85%) indicating that they had a policy on consent for transfusion, which included the need to provide information to patients. 164 sites provided patient data on 2784 cases for the case note documentation audit. The demographics were representative of the wider patient population requiring blood transfusion.

Evidence for documentation of patient consent for transfusion was found in only 43%; this was largely verbal consent. In nearly 80% of cases, consent was obtained by doctors and of these 72% were FY1 and FY2 trainees. While 85% of staff stated that they had explained the reason for transfusion to the patient, only 63% stated that they had documented this; it was only evident in 37% of notes reviewed that the reason for transfusion had been explained to the patient. The proportion of patients stating that they received information on risks was only 38% and even lower at 8% for alternatives. These low levels are reflected in the case note audit with documentation that information was given on risks in 23% and on alternatives in 17%.

The lack of provision of written information to patients on transfusion should be of particular concern. These low levels were highlighted by the case note audit (19% documented as receiving these) as well as the patient feedback (28% recalled receiving these) and staff feedback (18% of staff provided these), demonstrating a major discordance with written policies within Trusts.

Despite the deficiencies as highlighted above, 75% of patients felt they had been given enough information on transfusion and had been able to ask questions. However 21% stated that they did not feel at all involved in the decision making process around receiving a blood transfusion. The uptake of the eLearning module on patient consent and transfusion is low with only 38% of medical and 24% of nursing respondents using this.

In conclusion:

- While policies within Trusts highlight the need for obtaining valid patient consent, there is an urgent need to improve actual practice in all clinical settings with implementation of the existing guidance and emphasis on documentation within the clinical records.
- Junior doctors in particular are involved in prescribing blood and this audit highlights an urgent need to strengthen their training in relation to consent and appropriate prescribing. This is in keeping also with SHOT recommendations highlighting junior doctor errors.
- The development and dissemination of patient leaflets needs urgent review with a need to explore innovative methods to provide information to patients including use of information technology.

Current national comparative audits include management of patients with sickle cell disease and the practice of Patient Blood Management in adults undergoing elective scheduled surgery. Planned audits are the management of patients with lower gastrointestinal bleeding and the use of blood and blood components in haematology.
**Working Groups**:-

1) **Blood Components**

*Fresh frozen plasma:* Alternative systems for the pathogen reduction of plasma are currently being evaluated, and development work on alternative ways of supplying plasma, such as in liquid (never frozen) or spray dried form, will be undertaken.

*Platelets:* The use of platelet additive solution (PAS) for pooled platelets has been introduced as a vCJD risk reduction measure and there will also be an increase in the number of platelet pools that are manufactured with a corresponding reduction in apheresis platelets to 60%. Systems for pathogen inactivation of platelet concentrates are CE marked and in routine use in several European Countries. To reduce the risk of bacterial contamination of platelets, NHSBT currently uses bacterial detection method, but pathogen reduction (PR) systems offer an alternative approach that may offer other benefits, but their cost effectiveness remains to be proven. As part of the procurement exercise for a bacterial risk reduction system, operational evaluations of PR systems will be undertaken to determine what benefits can be realised by NHSBT and thus whether PR currently offers a realistic alternative to screening.

*Bacterial screening of platelets:* Since the introduction of bacterial screening by NHSBT in February 2011 a total of 820,000 apheresis platelet packs and a further 198,000 pooled platelet packs have been screened. Since screening began in February 2011, there have been 320 (0.03%) initial reactive packs confirmed as positive and 422 (0.04%) as indeterminate positive. In the fourth quarter of 2014 the initial reactive rate was 0.22% for apheresis platelets and 0.28% for pooled platelets: of these 38 (0.05%) initial reactive packs were confirmed as positive and a further 31 (0.04%) as indeterminate positive. The majority of microorganisms isolated from bacterial screening have been identified as Gram-positive rods. Propionibacteria forms the majority of this group. The most likely source of these organisms is the donor arm. These organisms are rarely implicated in transfusion reactions. The donors of these packs are not routinely followed up however; a second positive bacterial screen may result in withdrawal of the donor.

2) **Education and training**

A NBTC Working Group for Education and Training was established in 2011/12. Its first task was to review transfusion training including the methods used for its assessment (completed) and to promote improvements (ongoing)

*Undergraduate Medical training:* The results of a completed survey which showed marked variation in the content, delivery of training and assessment were sent to medical schools via the Executive Director of the Medical Schools Council with recommendations for change. Current initiatives for training in transfusion are being reviewed.

*Foundation Training:* A competency assessment tool has been developed for Foundation trainees. A specific aim is to strengthen the process of patient consent including its documentation and the use of patient information leaflets.

*Postgraduate Medical Training:* A review of the GMC curriculum content of all acute postgraduate disciplines showed considerable variation in level of content, delivery and assessment in relation to training in transfusion medicine. NBTC representatives of relevant Royal Colleges have been tasked with the implementation of recommendations to improve transfusion training within their specialities.

*Haematology Specialist Registrar Training:* The transfusion training checklist has been updated. This is aimed at improving training within hospitals and in particular enhancing experience in blood transfusion laboratories.
Nursing & Midwifery Training: Use of the Learnbloodtransfusion elearning programme is being encouraged; it is now included in the curriculum of 10 universities. Training days are being held for Transfusion Practitioners focussing on leadership.

3) National Patient Safety Agency (NPSA) Safer Practice Notice (SPN) 14 Review Group
A NBTC Working Group was established in 2013 to review the implementation of the NPSA SPN 14 recommendations on training and competency assessment of staff undertaking blood transfusion.

It was recognised that there is further work to be undertaken including the development of core standards for transfusion training and assessment. There is uncertainty about which body would be responsible for drafting and overseeing the implementation of these recommendations. Skills for Health offered to do this but their services are costly. It was agreed that the NBTC should take on this task and a Working Group is being established.

4) Patient and Public Involvement
The Patient Involvement Working Group was established to promote patient and public involvement in blood transfusion.

The Working Group was involved in several patient-related activities during 2014/15:-
- A new NHSBT patient information leaflet on PBM was published, and new leaflets on anaemia, frozen components and haemato-oncology are being prepared. All other patient information leaflets will be reviewed in 2015/16.
- Development of a Patient Information ‘App’.
- Promotion of transfusion awareness in collaboration with specialist societies and groups including participation in the conferences of the Royal College of Nursing, the Royal College of Midwives and the National Schools Science Conference.
- Support for the National Comparative Audit on patient information and consent.
- Provision of patient input to relevant BCSH guidelines.

5) Transfusion Laboratory Managers Working Group
Transfusion laboratory managers have concerns about the quality of hospital transfusion services in relation to the increasing centralisation of pathology services. There are concerns about the downgrading of biomedical scientist posts and the loss of expertise in hospital transfusion laboratories.

The ‘Guidance for the Emergency Transfer of Blood and Components with Patients Between Hospitals’ and the ‘NBTC Red Cell and Platelet Shortage Plans’ have been updated. New recommendations have been developed on the ‘Appropriate Use of O Negative Red Cells’ following a survey of transfusion laboratory managers.

Medicines and Healthcare products Regulatory Agency (MHRA)
766 Serious Adverse Events (SAEs) and 346 Serious Adverse Reactions (SARs) were reported in 2014. The number of SARs have remained fairly constant from 2012 whereas SAEs have shown a significant decrease from 2012.

Human error continues to remain the highest root cause of all SAEs reported. Due to this, the MHRA has further subdivided the human error category to try and understand exactly why they occur.
MHRA is working closely with reporters to develop strategies to reduce the occurrence of human error as this is the single most common cause of errors reported to SABRE.

**Serious Hazards of Transfusion (SHOT) scheme**

Key highlights from the 2013 SHOT report published in July 2014 include:-

- Participation in SHOT continues to increase with 99.5% of NHS organisations submitting reports.
- 77.8% of reports in 2013 relate to errors and key messages continue to be correct patient identification at all stages of the process and careful attention to the component and specific requirements of the patient. SHOT also recommended a redesign of the transfusion process.
- There were 22 transfusion associated deaths in 2013 of varying degrees of imputability including an ABO incompatible red cell transfusion which possibly contributed to the patient's death.

Work is continuing with the MHRA to develop a combined haemovigilance reporting system.

**Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO)**

SaBTO has established a working group to consider evidence on the transmission of hepatitis E by blood transfusion. The requirement on NHSBT to produce 80% of platelets by apheresis of single donors has been removed, and it was agreed that PAS rather than donor plasma should be used for the suspension of pooled platelets.

**Review of the performance of the NHSBT**

Demand for red cells continues to reduce (2.6% in 2014/15), and platelet demand continues to increase slightly (1.3% in 2014/15). Issues of O RhD negative blood remain about 12% but above the target of 10.5%. Wastage of red cells is currently 0.43% which is below the target of <0.75%, and platelets 5.3% which is above the <4% target. 7 of the 8 sites for red cell immunohaematology are currently exceeding the target for turnaround times for reference samples, and the performance of the 8th is improving.

Further information about the terms of reference, membership, and work of the NBTC can be obtained from the Secretary, Dr Kate Pendry (NHSBT, Manchester, kate.pendry@nhsbt.nhs.uk), from the Chair of the appropriate RTC or from its website [http://www.transfusionguidelines.org.uk/index.asp?Publication=NTC&Section=27&pageid=814](http://www.transfusionguidelines.org.uk/index.asp?Publication=NTC&Section=27&pageid=814)

M.F. Murphy (Secretary, 2001 to 2015)

15th May 2015