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### Abbreviations and Acronyms

This list is a starting point for the abbreviations and acronyms used in blood transfusion, laboratory blood bank, the Blood Service and haematology, feel free to copy the list and add your own as you find them and those that are particular to your health service.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>the Blood Service</td>
<td>Australian Red Cross Blood Service</td>
</tr>
<tr>
<td>AABB</td>
<td>American Association of Blood Banks</td>
</tr>
<tr>
<td>ABO</td>
<td>ABO blood group system</td>
</tr>
<tr>
<td>ABMDR</td>
<td>Australian Bone Marrow Donor Registry</td>
</tr>
<tr>
<td>ACHS</td>
<td>Australian Council Healthcare Standards</td>
</tr>
<tr>
<td>ACSQHC</td>
<td>Australian Commission on Safety and Quality in Healthcare</td>
</tr>
<tr>
<td>AHMAC</td>
<td>Australian Health Ministers Advisory Council</td>
</tr>
<tr>
<td>AHP</td>
<td>Approved Health Provider</td>
</tr>
<tr>
<td>ANH</td>
<td>Acute normovolaemic haemodilution</td>
</tr>
<tr>
<td>Anti D</td>
<td>Rh D Immunoglobulin</td>
</tr>
<tr>
<td>ANZSBT</td>
<td>Australian and New Zealand Society of Blood Transfusion</td>
</tr>
<tr>
<td>ANZTP</td>
<td>Australian and New Zealand Transfusion Professionals</td>
</tr>
<tr>
<td>ATR</td>
<td>Acute Transfusion Reaction</td>
</tr>
<tr>
<td>BCI</td>
<td>Blood Component Information</td>
</tr>
<tr>
<td>BCSH</td>
<td>British Committee for Standards in Haematology</td>
</tr>
<tr>
<td>BloodNet</td>
<td>Online blood ordering and inventory system</td>
</tr>
<tr>
<td>BloodStar</td>
<td>Online blood system for tracking, authorisation and review of intravenous immunoglobulin use</td>
</tr>
<tr>
<td>BMAC</td>
<td>Blood Matters Advisory Committee</td>
</tr>
<tr>
<td>BMC</td>
<td>Blood Management Committee</td>
</tr>
<tr>
<td>BUG</td>
<td>Blood User Group</td>
</tr>
<tr>
<td>CMV</td>
<td>Cytomegalovirus</td>
</tr>
<tr>
<td>CoE</td>
<td>Council of Europe</td>
</tr>
<tr>
<td>DAT</td>
<td>Direct Antiglobulin Test</td>
</tr>
<tr>
<td>DEPM</td>
<td>Department of Epidemiology and Preventative Medicine (Monash University)</td>
</tr>
<tr>
<td>DTR</td>
<td>Delayed Transfusion Reaction</td>
</tr>
<tr>
<td>EBMP</td>
<td>Emergency Blood Management Plan</td>
</tr>
<tr>
<td>EBV</td>
<td>Epstein-Barr Virus</td>
</tr>
<tr>
<td>EDTA</td>
<td>Ethylenediaminetetraacetic acid</td>
</tr>
<tr>
<td>ELISA</td>
<td>Enzyme-linked Immunosorbent Assay</td>
</tr>
<tr>
<td>EQuIP</td>
<td>Evaluation and Quality Improvement program</td>
</tr>
<tr>
<td>FDA</td>
<td>Food &amp; Drug Administration (USA)</td>
</tr>
<tr>
<td>FFP</td>
<td>Fresh Frozen Plasma</td>
</tr>
<tr>
<td>FNHTR</td>
<td>Febrile Non-Haemolytic Transfusion Reaction</td>
</tr>
<tr>
<td>Hb</td>
<td>Haemoglobin</td>
</tr>
<tr>
<td>HBV</td>
<td>Hepatitis B virus</td>
</tr>
<tr>
<td>HBC</td>
<td>Hepatitis C virus</td>
</tr>
<tr>
<td>HDN</td>
<td>Haemolytic disease of the newborn</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency virus</td>
</tr>
<tr>
<td>HLA</td>
<td>Human Leucocyte Antigen</td>
</tr>
<tr>
<td>HPA</td>
<td>Human Platelet Antigen</td>
</tr>
<tr>
<td>HSANZ</td>
<td>Haematology Society of Australia and New Zealand</td>
</tr>
<tr>
<td>HTC</td>
<td>Hospital Transfusion Committee</td>
</tr>
<tr>
<td>HTLV</td>
<td>Human T-cell Lymphotropic Virus</td>
</tr>
<tr>
<td>HTR</td>
<td>Haemolytic Transfusion Reaction</td>
</tr>
</tbody>
</table>
IBCT     Incorrect Blood Component Transfused
ISBT     International Society of Blood Transfusion
IVlg     Intravenous Immunoglobulin
JBC      Jurisdictional Blood Committee
KPI      Key Performance Indicator
MBOS     Maximum Blood Ordering Schedule
MoU      Memorandum of Understanding
NAIT     Neonatal Alloimmune Thrombocytopenia
NATA     National Association of Testing Authorities, Australia
NAT      Nucleic Acid Testing
NBA      National Blood Authority
NBMS     National Blood Management System
NBS      National Blood Service (UK)
NBSCP    National Blood Supply Contingency Plan
NBTC     National Blood Transfusion Committee
NHMRC    National Health and Medical Research Council
NHS      National Health Service (UK)
Nlg      Normal immunoglobulin
NSQHS    National Safety, Quality Health Service Standards
PBM      Patient Blood Management
PTP      Post-Transfusion Purpura
RCPA     Royal College of Pathologists of Australasia
Rh       Rhesus blood group
SABM     Society for the Advancement of Blood Management
SClg     Subcutaneous immunoglobulin
SHOT     Serious Hazards of Transfusion (UK)
SOP      Standard Operating Procedure
STIR     Serious Transfusion Incident Report
TACO     Transfusion-Associated Circulatory Overload
TA-GVHD  Transfusion-Associated Graft Versus Host Disease
THANZ    Thrombosis & Haemostasis Society of Australia and New Zealand
TGA      Therapeutic Goods Administration
TGG      Transfusion Governance Group
TMS      Transfusion Medicine Service
TN/TP*   Transfusion Nurse/Transfusion Professional
TORC     Transfusion Outcomes Research Collaborative
TRALI    Transfusion-Related Acute Lung Injury
TSO      Transfusion Safety Officer
TT       Transfusion Trainer
TTI      Transfusion-Transmitted Infections
TTP      Thrombotic Thrombocytopenic Purpura
VAED     Victorian Admitted Episodes Dataset
vCJD     variant Creutzfeldt-Jakob Disease
VHIMS    Victorian Health Incident Management System
VIDG     Victorian Immunohaematology Discussion Group
VTIS     Victorian Transplantation and Immunogenetics Service
WBIT     Wrong Blood in Tube
WHO      World Health Organization

* The term transfusion practitioner (TP) is used internationally to describe roles/titles that are referred to in Australia as transfusion nurse, transfusion trainer, transfusion safety officer, transfusion quality officer, transfusion clinical nurse consultant, or PBM coordinator. This term is not used in Australia to prevent any possible confusion with the authorised and licensed Nurse Practitioner roles.
Introduction

The Australian context

Health funding is complex with a mix of Commonwealth and jurisdictional contributions including an active private health system.

The National Blood Authority (NBA) is a statutory agency within the Commonwealth Government’s health portfolio that manages and coordinates arrangements for the supply of blood and blood products and services on behalf of the Commonwealth and jurisdictional (State and Territory) governments. The NBA reports to the health minister and the Jurisdictional Blood Committee (JBC).

The JBC is the conduit between governments and the NBA. Representation from all jurisdictions provides positions on:

- blood policy, demand, supply planning and product distribution
- funding and evidence-based approaches to emerging products
- services and technologies

It oversees the NBA’s role in blood supply contracting.

Australia has only one fresh product supplier, The Australian Red Cross Blood Service (the Blood Service), whereas fractionated products are managed through contracts with the successful tenders and include Australian and international suppliers e.g. intravenous immunoglobulin, haemophilia products. The Blood Service then distributes these products to health services.

The budget for blood and blood products is cost shared between the Commonwealth government at 63 per cent and jurisdictional governments at 37 per cent collectively.

At a jurisdictional level, blood budgets are distributed in a variety of ways,

- centrally controlled by the local jurisdictional health department (central),
- devolved to health services/pathologies where the proportional dollar value is attributed according to designed usage/population figure (devolved), or
- partially devolved which is a mix of central and devolved funding. Where funding is devolved, it is to public health services, not private.

Regardless of the funding model applied at the jurisdictional level, blood product costs are not passed onto the Australian health consumer.

Transfusion Nurse/Trainer/Safety Officer

Within each state and territory, there are a number of transfusion nurses/trainers/safety officers, often supported by jurisdictional programs. In Victoria, the transfusion nurses/trainers/safety officers are supported by the Blood Matters team, who also provide support to roles in Tasmania, Australian Capital Territory (ACT) and Northern Territory (NT), through Memorandums of Understanding. In New South Wales, it is Blood Watch and South Australia has BloodSafe. Western Australia and Queensland programs are no longer centrally coordinated; however, there are many roles within each of these states. These programs provide support for the role and help direct activities within each state dependant on the specific structure of these programs. The Blood Service also has Transfusion Nurse roles covering all states and territories, with their focus being on facilitating specialist blood product support.

Blood Matters program

History

The Blood Matters project commenced in April 2002, with the formation of a consortium composed of the then Victorian Department of Human Services, Peter MacCallum Cancer Institute, The Royal Melbourne Hospital and the Blood Service. This consortium developed and tested tools and processes to improve transfusion practice in hospitals.

The Blood Matters project was expanded in 2003 to include an additional 12 public hospitals in a Blood Matters Breakthrough Collaborative project; a project methodology developed by the Institute for Healthcare Improvement (IHI) in the United States. These hospitals further tested and developed transfusion interventions over an 18-month period.

The interventions included:

- improving clinician and patient awareness and knowledge of blood product use
- improving clinical decision making
- enhancing the blood administration process by making all successful practical improvement strategies available to other hospitals in Victoria and Tasmania

As part of the Blood Matters project, the transfusion nurse (TN) role was established in metropolitan and major regional hospitals. To support those in the role, the Blood Matters Consortium project developed a postgraduate Certificate in Transfusion Practice. The Better Safer Transfusion (BeST) program was established in 2004 continuing the work of the Blood Matters project and in 2008 changed its name to the Blood Matters Program. In 2009, further funding was sought to provide workforce in the area of transfusion improvement to regional and rural health services, with a focus on cancer services. A transfusion trainer (TT) role was established. Currently 43 health services in Victoria employ either a TN/TT or Transfusion Safety Officer (TSO) to undertake blood management and transfusion improvement.

Current

The Blood Matters program is a joint initiative of the Cancer, Specialty Programs, Medical Research, and International Health Branch of the Department of Health and Human Services, Victoria, and the Australian Red Cross Blood Service. The goal of the program is to support and enhance best practice in patient blood management (PBM), and the stewardship of blood and blood products, for improved patient outcomes in Victorian health services. Tasmania, the ACT, and the NT collaborate with Blood Matters regularly through Memorandums of Understanding.

The Blood Matters program is supported by a secretariat including a program manager, data and information managers, a transfusion nurse, a PBM education coordinator and two project roles. One targeting red cell wastage reduction and the other assisting health services implement subcutaneous immunoglobulin (SCIG) programs. Blood Matters is structured such that expert working parties focus on specific target areas, to determine strategies for improving transfusion and PBM practices. Blood Matters is supported by a multidisciplinary advisory committee.
What provides structure and informs your practice?

The following statements, guidelines, and standards are pivotal to providing the structure and evidence for practice.

**Australian Health Ministers’ Conference Statement on National Stewardship Expectations for the Supply of Blood and Blood Products (Nov 2010)**


**National Blood Authority Patient Blood Management Guidelines**

The National Blood Authority (NBA) has funded and managed the development of a series of evidence-based Patient Blood Management (PBM) Guidelines, comprising six modules.

All the modules are intended to assist and guide health-care professionals in making clinical decisions when managing patients in the following clinical situations:

- Module 1 Critical Bleeding/Massive Transfusion
- Module 2 Perioperative – including pre, intra and postoperative of patients undergoing surgery or invasive procedures, particularly those in which blood loss is anticipated.
- Module 3 Medical – including patients with acute or chronic medical conditions requiring haematological intervention.
- Module 4 Critical Care
- Module 5 Obstetrics and Maternity for managing pregnant and postpartum women.
- Module 6 Neonatal and Paediatrics for blood management in neonatal and paediatric patients.
National Safety and Quality Health Service Standards – second edition

In 2011, the first edition of the Australian Commission on Safety and Quality in Healthcare National Safety and Quality Health Service (NSQHS) Standards were released to drive the implementation of safety and quality systems and improve the quality of health care in Australia. The NSQHS Standards provide a nationally consistent statement about the level of care consumers can expect from health services. Health services have been assessed to these standards since January 2013.

The second edition was released November 2017 and health services will be assessed to these new standards from January 2019. The second edition addresses gaps identified in the first edition and actions have been consolidated and streamlined to make them clearer and easier to implement and reduces duplication.

The Blood and Blood Product standard has been renamed to the Blood Management standard. The revised standard has added important aspects of patient blood management, acknowledging patients’ blood is a valuable and unique resource that should be conserved and managed well. This standard aims to ensure that safe, appropriate, effective, and efficient blood systems are in place to minimise risk associated with the use of blood products.

The Transfusion Governance Group (TGG), often known as the Blood Management Committee (BMC), Hospital Transfusion Committee (HTC) or Patient Blood Management Committee (PBMC) play a very important role in the health service to ensure that all actions for the standards are addressed and met. This group develops and oversees systems to identify and coordinate actions to improve the quality of practice across the range of activities relating to blood and blood products.

Rural or small metropolitan health services may not have access to the expertise available in larger, metropolitan sites; therefore, the model should be varied so that the outputs still occur. In lieu of a specific committee or group, hospital transfusion governance oversight may occur by adding transfusion as an agenda item on an existing clinical governance committee such as a clinical review, risk management or infection control committee. A team should be formed, however it may only consist of two people with regular contact that ensures the direction and objectives set by the transfusion governance group or equivalent, are implemented. Important individuals may be educators and/or those in quality/risk roles.


ANZSBT guidelines

The Australian & New Zealand Society of Blood Transfusion (ANZSBT) have developed a suite of guidelines, which can be access via the following link: https://www.anzsbt.org.au/pages/anzsbt-guidelines.html

Guidelines that will be of particular benefit to you are:

- Administration of blood products, 2nd edition, 2011 (currently working on 3rd edition)
- Transfusion and immunohematology laboratory practice, 1st edition 2016
- Prevention of transfusion-associated graft-versus-host disease (TAGVHD), January 2011
Australian standard - AS 3864.2 - 2012 - Medical refrigeration equipment - For the storage of blood and blood products

The objective of this Standard is to safeguard recipients of blood transfusions by ensuring that blood and blood products are properly and safely stored at the required temperature in refrigeration equipment or walk-in rooms specifically manufactured for the purpose.

The Standard consists of two parts:

- Part 1: Manufacturing requirements
- Part 2: User-related requirements for care, maintenance, performance verification and calibration.

Transfusion team

The ‘team’ expedites work determined by the committee and responds to transfusion issues that arise between committee meetings, and therefore needs to have membership with relevant expertise.

The team may include a TN/TT/TSO, transfusion scientist, transfusion registrar, medical champion and quality/risk representative.

The medical champion may vary depending on the work areas of the transfusion team and committee, for example: a cardiac anaesthetist for cardiac-related work, an intensivist or a haematologist. Ideally, the medical champion has a full-time or permanent appointment in the organisation for continuity.

The quality/risk management representative may be the quality or risk management coordinator. They are a valued member because they have an understanding of national standards, systems in their organisation and how to achieve hospital-wide change in practice. This knowledge is important for transfusion improvement activities and to ensure the BMC/TGG/HTC/PBMC is embedded and visible within the quality systems of the organisation.

The team should meet at regular intervals, however work should proceed between meetings and this may be more as a ‘virtual’ team; collaborating and communicating as a single entity on the directions set by the transfusion committee, or on issues arising between committee meetings. The TN/TT/TSO may have a major coordination role for this team, if it is not taken up by a senior manager in the organisation.

Blood Management Committee (BMC)/Transfusion Governance Group (TGG)/Hospital Transfusion Committee (HTC) or Patient Blood Management Committee (PBMC)

To promote best practice in PBM and the use of blood and blood products, health services need robust PBM/transfusion quality improvement and risk management programs including BMC or equivalent. This requires commitment of the health service management and clinical/laboratory staff to a PBM/transfusion infrastructure including a BMC, blood issue and PBM/transfusion policies, a maximum blood-ordering schedule, and monitoring processes.

Not all health services will need to have a stand alone BMC, however all health services should have structures and processes in place that fulfil the role and function of a BMC. A key responsibility of BMC is risk management. The primary role of an BMC is to provide an active forum for communication between staff directly involved in clinical and laboratory-based PBM/blood transfusion activities, to provide solutions, feedback and education in relation to identified problems, and to ensure that transfusion practice accords with best practice.
# Resources

## Guidelines and hospital circulars

The following list includes current Australian guidelines, standards and Victorian Department Health and Human Services hospital circulars available to inform your practice. Full versions of the guidelines, standards and circulars can be found at the website links.

<table>
<thead>
<tr>
<th>Title</th>
<th>Website</th>
<th>Year of publication</th>
</tr>
</thead>
</table>
## International sites

The following sites may also provide useful information to inform your work.

<table>
<thead>
<tr>
<th>Title</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Committee for standards in haematology</td>
<td><a href="http://www.b-s-h.org.uk/guidelines/">http://www.b-s-h.org.uk/guidelines/</a></td>
</tr>
<tr>
<td>American Association of Blood Banks</td>
<td><a href="http://www.aabb.org/Pages/default.aspx">http://www.aabb.org/Pages/default.aspx</a></td>
</tr>
<tr>
<td>British Society of Haematology</td>
<td><a href="http://www.b-s-h.org.uk/">http://www.b-s-h.org.uk/</a></td>
</tr>
<tr>
<td>Canadian Society for Transfusion Medicine</td>
<td><a href="http://www.transfusion.ca/Home">http://www.transfusion.ca/Home</a></td>
</tr>
<tr>
<td>Serious Hazards of Transfusion (SHOT)</td>
<td><a href="http://www.shotuk.org/home/">http://www.shotuk.org/home/</a></td>
</tr>
<tr>
<td>National Health Service Blood and Transplant (UK)</td>
<td><a href="http://www.nhsbt.nhs.uk/">http://www.nhsbt.nhs.uk/</a></td>
</tr>
<tr>
<td>International Society of Blood Transfusion</td>
<td><a href="http://www.isbtweb.org/">http://www.isbtweb.org/</a></td>
</tr>
<tr>
<td>Ontario regional blood coordinating network (ORBCoN)</td>
<td><a href="http://transfusionontario.org/en/">http://transfusionontario.org/en/</a></td>
</tr>
<tr>
<td>Network of Advancement of Patient Blood Management, Haemostasis and Thrombosis (NATA)</td>
<td><a href="http://nataonline.com/">http://nataonline.com/</a></td>
</tr>
</tbody>
</table>
**Education events for TN/TT/TSOs**

Education is fundamental to ensure that staff working in the area of transfusion/PBM have the knowledge and understanding to provide high quality, effective and safe patient care. It is an ongoing process, requiring regular updates and reinforcement to keep pace with changes, to reduce errors and risk, and improve patient outcomes. Providing education and acting as a resource is a significant part of the TN/TT/TSOs role.

There are a range of education opportunities for TN/TT/TSOs to support their development and enhance their knowledge and skills to undertake or enhance their roles as providers of education. These include the acquisition of knowledge through:

- on the job training
- mentorship from a transfusion specialist, scientist or nurse
- support from members of the Blood Management Committee
- support from the Blood Matters team.

Blood Matters also holds two forums each year for TN/TT/TSOs affiliated with the Blood Matters program. These forums are an opportunity to network with other transfusion nurses, trainers, and safety officers, provide updates on current transfusion practice, and the activities of the Blood Matters Program.

Please contact Blood Matters for further information bloodmatters@redcrossblood.org.au

The Blood Service provides educational opportunities to all clinicians which includes eLearning and webinars. For further information on available education opportunities go to [https://learn.transfusion.com.au/](https://learn.transfusion.com.au/)

**Graduate Certificate in Transfusion Practice**

The Graduate Certificate in Transfusion Practice is highly recognised and valued in the blood sector. The course incorporates transfusion practice and guidelines and patient blood management strategies to achieve best practice in transfusion.

The course is recommended for all new TN/TT/TSOs.

In 2017, the course has been completely reviewed with the addition of the Specialist Certificate in Blood Management Foundations for health care professionals with a responsibility for managing organisational compliance with Standard 7 and associated activities.

Offered by the Melbourne School of Health Sciences at The University of Melbourne, in partnership with the Blood Service through the Blood Matters program, the course is the only one of its kind in the southern hemisphere and is endorsed by the International Society of Blood Transfusion (ISBT) Academy. The online course is facilitated by an experienced Clinical Nurse Educator. The course is open to anyone interested in working as a resource in the area of transfusion/PBM practice, predominately from nursing, and laboratory specialties.

The course is delivered part time with Foundations in Blood Management in the first semester and Advanced Concepts in Blood Management and a Quality Practice Portfolio in the second semester.

The Specialist Certificate in Blood Management is a foundation-training course for healthcare professionals who work in areas where blood or blood products are transfused or for those staff members responsible for managing organisational compliance with the National Standards and associated activities. It introduces the concepts of PBM, safety and governance relating to blood. This subject supports the development of specific skills, and provides information to assist health services to meet these National Standards.
The Graduate Certificate in Transfusion Practice builds on the knowledge and expertise gained in the Specialist Certificate in Blood Management and provides advanced knowledge of clinical practice guidelines and PBM strategies. It focuses on the critical-thinking and leadership skills required to implement transfusion and/or PBM practice improvement initiatives within a clinical department/health service, with practical approaches to change management, audit and leadership.


**Transfusion journals**

This is not an exhaustive list of resources, but provides a starting point for those new to the role. As you progress in the role, you will develop a suite of resources that are useful to your practice.

1. Transfusion
2. Vox Sanguinis
3. Transfusion and Apheresis Science
4. Transfusion Medicine
5. Transfusion Medicine Reviews
6. British Journal of Haematology
8. Journal of Thrombosis and Haemostasis
9. Transfusion Alternatives in Transfusion Medicine
10. ISBT Science Series
11. Journal of Infusion Nursing
# Educational materials

The following websites provide education materials that may be used for both staff and patients.

<table>
<thead>
<tr>
<th>Title</th>
<th>Website</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>BloodSafe eLearning Australia</td>
<td><a href="https://bloodsafelearning.org.au/">https://bloodsafelearning.org.au/</a></td>
<td>Provides courses for all staff on various aspects of the transfusion process, administration, critical bleeding, patient blood management etc.</td>
</tr>
<tr>
<td>Australian Red Cross Blood Service</td>
<td><a href="http://www.transfusion.com.au/">http://www.transfusion.com.au/</a></td>
<td>Provides information on products and reactions. There are a number of educational webinars etc. that you can attend.</td>
</tr>
</tbody>
</table>
Professional organisations:

**ANZSBT and ANZTP**

ANZSBT is an internationally recognised professional society that comprises members from diverse scientific, technical, and medical backgrounds working within the areas of blood transfusion and transfusion medicine within Australia and New Zealand.

The broad aims of the ANZSBT are:

- The advancement of knowledge in blood transfusion and transfusion medicine
- The promotion of improved standards in the practice of blood transfusion
- The collaboration with international and other regional societies interested in blood
- The promotion of interest in research into blood transfusion and allied subjects
- The formulation of guidelines in key areas of transfusion practice

The ANZSBT is affiliated with the following societies:

- Haematology Society of Australia and New Zealand (HSANZ) - [www.hsanz.org.au](http://www.hsanz.org.au)
- British Blood Transfusion Society (BBTS) - [www.bbts.org.uk](http://www.bbts.org.uk)
- International Society of Blood Transfusion (ISBT) - [www.isbt-web.org](http://www.isbt-web.org)
- Australian Society of Medical Research (ASMR) - [www.asmr.org.au](http://www.asmr.org.au)

ANZSBT membership offers benefits for members through networking, publications, eligibility to apply for awards and grants, members only access to transfusion journals and a discount to attend the annual scientific meeting (usually held in October).

Requirements to join the ANZSBT and affiliate with the ANZTP are available at [https://www.anzsbt.org.au/pages/how-to-join.html](https://www.anzsbt.org.au/pages/how-to-join.html)

There may be other organisations, specific to your occupation, such as the Royal College of Nursing, Australia and the Australian Institute of Medical Scientists, which you may wish to consider.

In 2011, those working in the area of transfusion nursing formed the Transfusion Professionals Network (TP Network) special interest group under the auspices of the ANZSBT.

The ANZTP Network aims to improve transfusion practice by:

- promoting consistency in transfusion practice
- contributing to patient blood management practices
- sharing knowledge and experience gained from local implementation of practice change, particularly with reference to national transfusion guidelines and standards.
**Membership of ANZTP**

Members of ANZSBT who are nurses, midwives, scientists or other health professionals in advanced roles, undertaking quality improvement and clinical practice in transfusion and patient blood management.

**Areas of interest/activities:**
- Provide support, education, advice and exchange of information within the group for new and existing transfusion professionals, and externally, as requested
- Identify areas for transfusion practice audit, other quality improvement activities and research as well as facilitate participation, feedback of results, recommendations and interventions
- Work collaboratively with the ANZSBT Council and Standing Committees to identify issues and areas of common interest for the attention by the Society
- Provide suggestions and support for formal (external) communications, educational and other materials, for coordination and endorsement through Council and Standing Committee Chairs.

**ISBT and TP forum**

The International Society of Blood Transfusion (ISBT) is a scientific society that was founded in 1935. Since that time, the ISBT has grown in to an international society where transfusion medicine professionals from across the globe come together and do the one thing they do best: share knowledge to improve the safety of blood transfusion worldwide.

The society’s most important activity is to promote science and education related to blood, cells and transplantation. They have created an educational platform; the ISBT Academy ePortal. This eLearning facility includes webcasts of ISBT congress presentations and a library of transfusion guidelines.

In addition the society:
- Encourages and supports the ISBT Working Parties that focus on the study of specific topics.
- Publish a scientific journal Vox Sanguinis and provide other high quality educational print and electronic material.
- Organise International and Regional congresses.
- Support and participate in regional workshops, seminars, and congresses either financially or by use of the ISBT logo.
- Support professionals from low and medium development index countries financially.

Membership information can be found at: [http://www.isbtweb.org/my-isbt/isbt-membership/](http://www.isbtweb.org/my-isbt/isbt-membership/)

**Transfusion Practitioner (TP) Forum**

The Transfusion Practitioners (TP) forum has been established with the Clinical Transfusion Working Party to promote the role and value of TPs within the international blood sector. The forum provides a platform for international TP collaboration; where knowledge and experience can be shared to support development of initiatives and practices of safe transfusion practice, implementation of patient blood management and haemovigilance. The Transfusion Practitioners also have their own online discussion forum on the ISBT Forum; you can join by contacting communication@isbtweb.org
The Blood Service

Blood donation

The Blood Service collected 1.3 million individual donations in 2016-17 [Blood Service Annual report 2016-17] from 461,268 donors with 97,635 being new blood donors.

Each week 27,000 donations are required to meet demand. The Blood Service attracts and retains donors through regular advertising and marketing campaigns. The Blood Service also provides advice, information and education about blood products and practices to clinicians and health professionals, through Medical Services. Further information is available at https://transfusion.com.au/.

The Blood Service was established as a national organisation in 1996, but its history dates back to 1929 through various state and territory Red Cross transfusion services. Since 2005–06, The Blood Service has been fully funded by the governments of Australia through an agreement with the NBA. Blood and blood products utilised at health services are funded by Australian Federal Government contributing 63 per cent of funding and each of the eight state/territory governments contributing the remaining 37 per cent proportion.

In Australia, blood and its components are collected at fixed and mobile collection centres in accordance with recommendations from the World Health Organization (WHO), the International Society of Blood Transfusion (ISBT) and the International Federation of Red Cross and Red Crescent Societies. Blood donations are made voluntarily and are non-remunerated.

The Blood Service works alongside Australian regulators, government departments and commercial and professional organisations, as well as international bodies, to constantly review and improve the safety and provision of blood and blood components in Australia.

Donors and blood donation

Donors are required to be aged between 18 and 70 years, weigh more than 50 kg and be fit and healthy, at the time of donation. Donors are asked to complete a donor questionnaire prior to donating. This confidential and legally binding form asks about health and lifestyle and whether they are eligible to donate blood on that day. Donors are interviewed by a trained member of staff, with the short interview including a health check, a haemoglobin check and blood pressure. This discussion takes place each time the donor donates, to assess recent health and determine that nothing has altered since the last visit.

Approximately 470 mL whole blood is donated. For the majority this is around 10 per cent of their total blood volume and can be donated safely every 12 weeks. Total time taken to give this amount in a whole blood donation is around 10 minutes. A whole blood donation is separated into three critical components: red cells, plasma, and platelets.

Donors can specifically donate plasma and/or platelets through apheresis donation and this can occur every two to three weeks. Donating this way takes approximately an hour. Donor information is available at http://www.donateblood.com.au/.

Worldwide the demand for red cells is reducing and in Australia, demand for red cell units dropped by almost 8 per cent in 2013/14, and expected to decline by a further 3 per cent in the 2014/15 financial year. In contrast to declining demand for red cell units, Australia is seeing exponential growth in the use of plasma. The number of plasma donations in Australia is growing by an average of 14 per cent per year. In 2016-17, more than 500,000 plasma donations were required.
Testing

Each time blood is donated samples are taken for testing. The Blood Service tests the donation for ABO group, Rh D group and other red cell antibodies. All donations for clinical use are also tested for five transfusion-transmissible infections. These are:

- HIV
- hepatitis B
- hepatitis C
- human T-cell lymphotropic virus (HTLV)
- syphilis

Specifically, blood donations are tested for the hepatitis B surface antigen, antibody to hepatitis C, antibody to both HIV-1 and HIV-2, antibody to HTLV types I and II and antibodies to syphilis. From 2016, apheresis plasma for fractionation donations are no longer tested for HTLV and syphilis.

All donations for clinical use are tested for HIV-1, hepatitis B (HBV) and hepatitis C (HCV) RNA using Nucleic Acid Testing (NAT). This process is different from traditional testing because it looks for the actual presence of viruses, in this case HIV, HBV and HCV. Most other tests detect the presence of antibodies, which are the body's response to an infection and which take time to develop. NAT provides an opportunity to further improve the safety of the blood supply by reducing the 'window period', which is the time between exposure to a virus to the time current tests are able to detect antibodies to the virus.

The Blood Service also performs a test for malaria on donations from donors who have reported residence in, or travel to, an area with malaria. Other tests such as CMV antibodies are performed on some donations.

Each platelet component is tested 24 hours after collection for bacterial contamination; samples are cultured in both aerobic and anaerobic culture bottles. Platelets are issued as ‘negative to date’, with cultures continuing to incubate over the full shelf life of the components and 3 days beyond the expiry. If a culture becomes positive, the screening equipment automatically flags this as ‘initial machine positive’ (IMP), if these have been issued to a health service they will be notified.

Test results

The Blood Service notifies its donors of any abnormal results on infectious disease and red cell antibody screening once testing is completed. The donor is advised about the health implications of the positive tests. As with all information held by the Blood Service, the information is confidential and released only to the donor and agencies, such as the Department of Health and Human Services, as required by law.
The decision to transfuse

The decision to transfuse a patient should be based on the clinical picture of the patient, not laboratory results alone.

Guidelines from the NBA are available, as outlined below, covering different groups of patients and are formed using the most current available evidence.

Patient blood management (PBM) guidelines

PBM encompasses a holistic approach to the use of blood products for each individual patient; using the premise of ‘why transfuse’ rather than ‘why not’. It focuses on the need to carefully balance benefits and potential harm. Transfusion avoidance or minimisation stems from the belief that blood and its components are biological products, the effects of which are not fully understood, and have the potential for unwanted consequences.

PBM has the patient at its centre, and aims to maximise haemoglobin (preoperatively, intraoperatively and postoperatively); minimise blood loss (including sample collection) and use alternatives to blood transfusion where these are available and feasible.

The National Blood Authority (NBA), on behalf of all governments, has produced six modules as part of a comprehensive, evidence-based suite of PBM Guidelines.

The guidelines are:

- Module 1 Critical Bleeding/Massive Transfusion
- Module 2 Perioperative
- Module 3 Medical
- Module 4 Critical Care
- Module 5 Obstetrics
- Module 6 Paediatric/Neo

The modules are developed by Clinical/Consumer Reference Groups (CRGs). Each CRG has active representation from the clinical community, colleges, organisations and societies. You can view and download the modules or order the modules and Quick reference guides free of charge by going to the NBA website [http://www.blood.gov.au/pbm-guidelines](http://www.blood.gov.au/pbm-guidelines)

Pretransfusion testing

Pretransfusion testing is undertaken to determine a patient’s blood group and antibody status to enable a suitable donor product to be selected and transfused. The pretransfusion test is known as a ‘Group and Hold’ or a ‘Group and Screen’ (G&H, G&S). This test must be performed at least once prior to routine transfusion of any fresh blood product. Once the G&H is completed, red blood cells can be issued on request for up to 72 hours following sample collection. For all red cell transfusions a crossmatch is required, where donations are confirmed to match the patients’ blood type. This may be done electronically (where available), if the patient has a negative antibody screen and no history of antibodies. Alternatively, a full crossmatch is performed. This involves mixing donor red cells with the patient’s plasma to check compatibility. If the antibody screen is positive, the antibody identification may take a further 1-4 hours. Once the specificity of the antibody has been determined, donor units negative for the cognate antigen must be sourced and crossmatched for the patient. If the antibodies are complex or uncommon it may take time to source suitable donations.
**Blood types**

Blood type is jointly inherited from your parents. A combination of genes determines the presence or absence of substances called antigens, on the surface of all your red blood cells. These antigens are capable of stimulating an immune response.

In 1901, an Austrian scientist, Karl Landsteiner, found that reactions between these antigens and other substances in plasma, called antibodies, sometimes caused the red blood cells to clump together (agglutinate) resulting in adverse reactions in transfusion recipients. After further experiments, he identified four blood groups based on the presence or absence of two specific antigens which we now know as A and B.

This discovery paved the way for a system of blood grouping called the ABO system.

In 1939 and 1940, research involving rhesus monkeys identified another grouping factor called the Rhesus factor: Rh factor or D antigen. People, regardless of their ABO blood group, who were found to have a D antigen present were grouped as Rh positive and those without the D antigen were grouped as Rh negative. The Rhesus group is indicated by a ‘+’ (Rh positive) or ‘-’ (Rh negative) after a person’s ABO type; for example: A+ or O-. All these groups are genetically inherited. People who are Rh negative may develop an antibody (called anti-D) if they are exposed to the D antigen during pregnancy or a blood transfusion.

In addition to these two antigens there are many other red cell antigens that can cause reactions in patients. Some examples are Kell, Duffy, MNS and Rhesus (c, C, e, E).

Further information on this topic can be found at the Blood Service website: [http://www.transfusion.com.au/](http://www.transfusion.com.au/) or any of the recommended texts.

**Are they compatible?**

The transfusion of compatible blood is fundamental to safe transfusion. When red cells are transfused, it is preferable that patients receive blood of the same ABO and Rh (D) group, however in an emergency, if the required red cell blood group is unavailable, the patient may be given another ‘compatible’ blood group. Rh (D) positive patients may safely receive Rh (D) negative blood. In exceptional circumstances Rh (D) negative patients may need to receive Rh (D) positive red cells. Further information on compatibility for red cells, plasma and platelets is available through the Blood Service website [http://www.transfusion.com.au/blood_basics/compatibility](http://www.transfusion.com.au/blood_basics/compatibility) , [http://www.donateblood.com.au/about-blood/types](http://www.donateblood.com.au/about-blood/types)

# ABO component compatibility table


<table>
<thead>
<tr>
<th>Patient group unknown</th>
<th>Red cells</th>
<th>Platelets</th>
<th>Plasma components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unknown patient</strong></td>
<td>O</td>
<td>A or O (low titre anti-A/B)</td>
<td>AB*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient group O</th>
<th>Red cells</th>
<th>Platelets</th>
<th>Plasma components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First choice</strong></td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>Second choice</strong></td>
<td>A**</td>
<td>A or B</td>
<td></td>
</tr>
<tr>
<td><strong>Third choice</strong></td>
<td>AB</td>
<td>AB</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient group A</th>
<th>Red cells</th>
<th>Platelets</th>
<th>Plasma components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First choice</strong></td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td><strong>Second choice</strong></td>
<td>O</td>
<td>O (low titre anti-A/B)</td>
<td>AB</td>
</tr>
<tr>
<td><strong>Third choice</strong></td>
<td>AB or B, O</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient group B</th>
<th>Red cells</th>
<th>Platelets</th>
<th>Plasma components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First choice</strong></td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td><strong>Second choice</strong></td>
<td>O</td>
<td>O (low titre anti-A/B)</td>
<td>AB</td>
</tr>
<tr>
<td><strong>Third choice</strong></td>
<td>AB or A, O</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient group AB</th>
<th>Red cells</th>
<th>Platelets</th>
<th>Plasma components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First choice</strong></td>
<td>AB</td>
<td>AB</td>
<td>AB</td>
</tr>
<tr>
<td><strong>Second choice</strong></td>
<td>A or B</td>
<td>O (low titre anti-A/B)</td>
<td>A*</td>
</tr>
<tr>
<td><strong>Third choice</strong></td>
<td>O</td>
<td>A or B, O</td>
<td></td>
</tr>
</tbody>
</table>

# Notes

- If patient is a female of child bearing potential, O Rho negative red cells should be used until patient’s blood group is established.
- Group A plasma may be used as per local institutional policies.
- Group A platelets that have an A2 subgroup do not express significant amounts of A antigen and are, therefore, compatible with group O recipients.
Blood products

Fresh components

These very useful resources are available providing information on all fresh blood products and any modifications to these products:

1. The Blood Service-Blood Component Information – Circular of Information An extension of blood component labels is updated regularly and can be downloaded from:


3. Transfusion pack check – This is a learning resource for checking a blood component pack before transfusion, complete with exercises for students, which is available at:

4. Transfusion fact sheets – The Blood Service created fact sheets to provide basic information about blood, blood components, transfusion and related concepts. These are available at:

Fractionated plasma products

CSL Behring (formerly CSL Bioplasma) has been Australia’s national fractionator of plasma-derived therapeutics since 1952 and is regulated by the Therapeutic Goods Administration (TGA). Plasma is provided by the Blood Service from voluntary Australian donations to produce high-quality plasma-derived therapeutics. This includes:

- Immunoglobulins: both intravenous immunoglobulin and other immunoglobulins
- Clotting factors
- Albumex

(see chart below for further information)

The growth in demand for intravenous immunoglobulin (IVIg) means it must be reserved for use in those with the greatest need. Australia has not been able to fully supply all the IVIg it requires for a number of years, so in 2008 criteria for access to IVIg funded under the National Blood Agreement was developed and endorsed by the Australian Health Ministers Advisory Council for use by clinicians, these criteria were updated in 2012 and 2017. Version 3 will be available in 2018.

Nationally there are three funded IVIg products available, CSL Behring – Intragam 10 and Privigen, Grifols – Flebogamma. A presentation about the current products is available on the Blood Matters website (https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/speciality-diagnostics-therapeutics/blood-matters/ivig-changes-to-supply ) The Blood Service distributes IVIg to health services for patients. Clinicians may stipulate which imported product they wish their patient to receive, however Intragam 10 (domestically produced IVIg) cannot be requested as distribution is
allocated by the Blood Service. All products are approved by the TGA for therapeutic use. The following table outlines both IVIg and subcutaneous immunoglobulin (SCIg) products currently available.

<table>
<thead>
<tr>
<th>Current supply arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Imported IVIg products</strong></td>
</tr>
<tr>
<td>Flebogamma ® 5% Grifols Australia</td>
</tr>
<tr>
<td>Flebogamma ® 10% Grifols Australia</td>
</tr>
<tr>
<td>Privigen 10% CSL Behring</td>
</tr>
<tr>
<td><strong>Domestic IVIg product</strong></td>
</tr>
<tr>
<td>Intragam 10 (10%) CSL Behring</td>
</tr>
<tr>
<td><strong>Imported SCIg products</strong></td>
</tr>
<tr>
<td>Hizentra 20% CSL Behring</td>
</tr>
<tr>
<td><strong>Domestic SCIg product</strong></td>
</tr>
<tr>
<td>Evogam 16% CSL Behring</td>
</tr>
</tbody>
</table>

If a patient’s condition is outside the current criteria for IVIg use it may be possible to access an imported IVIg product using the Direct Order process.

The governance of IVIg is strictly enforced and information on the process for authorisation and management of IVIg products can be found at [http://www.blood.gov.au/ig-governance](http://www.blood.gov.au/ig-governance)

### CSL Behring products

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albumex® 4%</td>
<td>Used when the blood volume is low, during heart-lung bypass surgery and in plasma exchange</td>
</tr>
<tr>
<td>Albumex® 20%</td>
<td>Used when quantity of albumin in blood is low, for resuscitation in shock, in extensive burns, respiratory distress syndrome, blood purification and plasma exchange</td>
</tr>
<tr>
<td>Biostate®</td>
<td>Used for patients with haemophilia A, in which there are reduced levels of factor VIII and for von Willebrand disease</td>
</tr>
<tr>
<td>Intragam 10 (10%)</td>
<td>Used to replace antibodies to help prevent infections and to treat some autoimmune disorders</td>
</tr>
<tr>
<td>Prothrombinex®-VF</td>
<td>Used for the prevention and treatment of bleeding in patients with reduced levels of factor IX, II or X.</td>
</tr>
<tr>
<td>Evogam 16%</td>
<td>Domestic SCIg product - used to replace antibodies to help prevent infections and to treat some autoimmune disorders</td>
</tr>
<tr>
<td>Hizentra® 20%</td>
<td>Imported SCIg product - used to replace antibodies to help prevent infections and to treat some autoimmune disorders</td>
</tr>
<tr>
<td>MonoFIX®-VF</td>
<td>Used in patients with haemophilia B, in which there are reduced levels of Factor IX</td>
</tr>
<tr>
<td>Rh(D) Immunoglobulin-VF</td>
<td>Used to prevent haemolytic disease of the newborn</td>
</tr>
<tr>
<td>Hepatitis B Immunoglobulin-VF</td>
<td>Used to help prevent hepatitis B infection in a person who comes into contact with suspected infected material</td>
</tr>
<tr>
<td>CMV Immunoglobulin-VF</td>
<td>Used to help prevent cytomegalovirus infection in specific transplant patients</td>
</tr>
</tbody>
</table>
Normal Immunoglobulin-VF

Used to replace antibodies to help prevent infections

Tetanus Immunoglobulin-VF IM

Used to help prevent tetanus in a person who has not recently been immunised against tetanus

Tetanus Immunoglobulin-VF IV

Used to treat tetanus infection

Zoster Immunoglobulin-VF

Used to help prevent chickenpox and shingles

Thrombotrol®-VF

Used to treat patients with conditions relating to an inherited deficiency of antithrombin III

Further information on these products, including prescribing information and consumer information is available at: http://www.cslbehring.com.au/products/product-finder.htm

**Synthetic blood clotting factors**

Synthetic blood clotting factors are also manufactured by a number of companies and are used in the treatment and prevention of bleeding in patients with Haemophilia.

Activated Factor VII (NovoSeven®RT) is also occasionally used off-licence to control bleeding in a patient where all usual methods have been employed but failed. http://www.novonordisk.com.au/healthcare-professionals.html
Consent

Introduction
Patients have a choice about whether or not to undergo a proposed procedure or treatment, including transfusion of blood and blood products. The purpose of the informed consent process is to ensure patients are provided with information about the transfusion care they may receive, and to enable them to make informed decisions regarding this. Documentation of informed consent is required and this should be supported by local policy.

Available on the Blood Matters website is a document outlining the elements of informed consent for transfusion, developed in 2012 [http://www.health.vic.gov.au/bloodmatters/tools/consent.htm]. This document is to be read in conjunction with the health service’s consent policy which should cover general consent for medical treatments including processes for consent in competent, non-competent patients, patients from non-English speaking backgrounds, children and the role of medical and nursing staff and how this consent process will be documented. [https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/speciality-diagnostics-therapeutics/blood-matters/tools-nsghs-standard-7/communicating-with-patients]

Important points
Prior to undertaking any non-emergency transfusion on any patient, a valid and informed consent should be gained and documented according to the hospital policy. Emergency transfusions will be undertaken in compliance with the Guardianship and Administration Act 1986.

Appropriate substitute consent will be taken when patients cannot consent for themselves. The prescribing medical practitioner is responsible for obtaining consent.

Patients may, and are entitled to refuse transfusion, for example Jehovah’s Witness, who may refuse all or some blood products on religious grounds. In either adults or children, refer to the health service’s policy and procedures for guidance regarding these situations. Advice can be sought from the Jehovah’s Witness liaison committee, the Australian Red Cross Blood Service or the Office of the Public Advocate.

Important points to cover when obtaining informed consent
The following section ‘Important points to cover when obtaining informed consent’ has been extracted from the Blood Service website [http://www.transfusion.com.au/transfusion_practice/consent][accessed 22/12/17]

Explain:
• the cause/likelihood of bleeding or the low blood count (including any uncertainty)
• the nature of the proposed transfusion therapy - what is involved
• the benefits expected
• the risks - including both common and rare but serious
• the alternatives including the risk of doing nothing

Ask:
• is there anything else you would like to know?
• is there anything you do not understand?
Provide:
- an interpreter for non-English speaking patients
- written information.

Document:
- Documentation is an essential part of the informed consent process. Consent should be documented either in the medical record (the amount of recording necessary depends on the circumstances of consent and local policy) or on a generic or transfusion specific consent form (as specified in the health service policy).

**Consumer information on consent for transfusion**

Consumer information brochures to support the consent process are available from a number of sources including the Blood Matters website, the Blood Service (including the mytransfusion website [http://mytransfusion.com.au/](http://mytransfusion.com.au/)), Blood Watch (NSW) and BloodSafe (SA). See Educational materials for more information.
Clinical audit

The clinical audit process seeks to identify areas for practice improvement; develop and carry out action plans to rectify or improve care; and then re-audit to ensure that these changes have achieved the desired outcome.

Blood Matters conducts regular audits of practice to compare current transfusion/PBM practices with clinical best practice guidelines. The aim is to identify areas for improvement and make recommendations in line with clinical best practice guidelines.

Audit data provided by health services is collated by the Blood Matters secretariat and reviewed by experts in the field. Reports are produced and made available on the Blood Matters website with individual reports provided to participating health services. These reports contain the health service’s own data benchmarked against the data from other participating health services. Individual reports can be used to develop unique hospital improvement plans.


These audits are only one part of the clinical audits involving transfusion that are undertaken at a health service. It is expected that there will be an ongoing audit program led by the blood management or quality committee. For example: auditing nursing transfusion practice can assist in improving blood administration practice, and can give focus to nurse education programs. Re-auditing will evaluate whether the changes and education implemented have had an impact.

Audit tools have been produced to assist in the collection of data regarding transfusion documentation, wastage and appropriateness of transfusion practice. These tools are available at [http://www2.health.vic.gov.au/bloodmatters/tools/data-collection.htm](http://www2.health.vic.gov.au/bloodmatters/tools/data-collection.htm)

Tips for auditing

Auditing takes time

1. Have clear objectives and aims
2. Identify stakeholders that may be affected by your audit and involve them in discussion
3. If required engage a team of people
4. Collect only the essential data
5. Maintain and ensure patient confidentiality
6. Analyse and compare your audit against standards or guidelines
7. Make recommendations and develop a plan to implement those recommendations
8. Re-audit, once recommendations are in place, to assess improvements
9. Talk to your quality/clinical governance manager/department, as they may have an audit schedule or already conducted audits similar to those you are considering or may be able to help with development of an audit tool.
Haemovigilance

Haemovigilance is a ‘set of surveillance procedures covering the whole transfusion chain (from the collection of blood and its components to the follow-up of recipients), intended to collect and assess information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products, and to prevent their occurrence or recurrence.


Within the health service environment this may include the use of incident reporting systems such as Victorian Health Incident Management System (VHIMS) and/or transfusion reaction reports.

Investigation of incidents and reactions is important to ensure risks to patients are identified and where possible actions are taken to reduce these risks.

Participation in case reviews of sentinel events may be required, including root cause analysis. These reviews should be undertaken with quality staff trained in incident management.

Further information on VHIMS and the sentinel event program can be found at the Clinical Risk Management page of the Victorian department of Health and Human Services website.

The Blood Matters’ Serious Transfusion Incidents Reporting (STIR) system

The Blood Matters’ STIR program is a central voluntary reporting system for serious adverse events in hospitals or laboratories involving the transfusion of fresh blood or blood products including near-miss incidents. STIR currently collects data on the following serious incidents: (see STIR guide at https://www2.health.vic.gov.au/about/publications/researchandreports/blood-matters-stir-guide-2017 for complete definitions)

The system captures two main categories of serious transfusion incidents: clinical and procedural which are reported via data collection forms:

• Clinical reporting forms –
  • acute transfusion reactions – this includes febrile non-haemolytic reactions, allergic or anaphylactic reactions and acute haemolytic reactions
  • transfusion-related acute lung injury (TRALI)
  • transfusion-associated circulatory overload (TACO)
  • transfusion-associated dyspnoea (TAD)
  • delayed haemolytic transfusion reactions (DHTR)
  • delayed serologic transfusion reactions (DSTR)
  • transfusion-associated graft-versus-host disease (TA-GVHD)
  • post-transfusion purpura (PTP)
  • bacterial/other infection
  • post-transfusion viral infection
• Procedural reporting forms –
  • incorrect blood component transfused (IBCT)
  • wrong blood in tube (near-miss incident)
  • cell salvage incidents
  • Rh D immunoglobulin (anti-D)
  • Near miss events
The STIR program commenced in 2007 and receives reports from public and private hospitals from Victoria, Tasmania, ACT, and NT. The program involves the capture and de-identification of data regarding serious hospital transfusion incidents, including near misses, which is then collated and analysed. Recommendations can then be made with the aim of improving transfusion safety. The latest serious transfusion incident report is available at http://www2.health.vic.gov.au/bloodmatters/tools/stir.htm

Confidentiality of data is fundamental to the success of this system. Each hospital is uniquely coded and no patient identifiers are requested, other than age and gender.

Your hospital may already be reporting to STIR. A haematologist or quality manager may have further information regarding this. If not, a STIR guide is available through the Blood Matters website. Please contact the Blood Matters secretariat for further information about joining.

Victoria has developed a statewide clinical incident dataset, under the VHIMS which was rolled out in Victoria in 2010. Definitions for STIR events have been included in this dataset. Contact your risk manager or quality manager for your responsibilities in relation to blood and blood product incident reporting.

**National Haemovigilance**

The NBA has developed the reporting and governance frameworks for a voluntary haemovigilance program for Australia. It reports on serious transfusion-related adverse events relating to fresh components occurring in public and private hospitals. The Australian Haemovigilance Minimum Data Set (AHMDS) has been developed to ensure consistent data collection and analysis of transfusion related adverse events to improve the quality of national haemovigilance reporting. STIR provides de-identified data to this dataset annually.

The primary aim of an Australian haemovigilance program is to improve transfusion safety and quality by collecting, analysing, and disseminating information on a common set of adverse events surrounding the transfusion of blood products. Trends will be identified over time and recommendations to improve transfusion outcomes, based on the data, will be developed.

Waste reduction

As part of the NBA Wastage Reduction Strategy, from May 2013 blood components supplied by the Australian Red Cross Blood Service included a cost indicator printed on the blood bag label.

The aim of this NBA initiative is to increase health provider awareness and appreciation of the costs associated with the provision of blood and blood products within Australia. It also supports awareness that blood is a precious resource given generously by donors, which should be used and managed with care.

Although blood is collected from non-remunerated donors, the collection, processing, testing and distribution of blood and blood products incur significant costs. The cost printed on each blood component label is indicative of the manufacturing costs for that component type.

Blood Matters coordinates the Victorian red blood cell (RBC) wastage reduction project, which aims to reduce wastage, and assist health services to reach national targets set by governments.

All entities who participate in the supply chain for blood and blood products have a responsibility to ensure that all aspects of the supply chain including transport, storage, and inventory management are optimised to minimise unnecessary wastage.

A certain level of discard of blood and blood products, particularly fresh products with short expiry dates, is both inevitable and appropriate to ensure that products are available where and when they are clinically required. However, there is a proportion of discards of blood and blood products that is neither inevitable nor appropriate.

In Victoria, all RBC waste is recorded via an online platform called BloodNet. BloodNet is a web-based system that allows staff in health services and laboratories across Australia to order blood and blood products in a standardised way, quickly, easily and securely from the Blood Service.

BloodNet requires health services to record a reason for discard when a RBC is discarded. The health service is able to allocate the location where the discard occurred, which gives them the ability to attribute waste appropriately, and share this data, enabling an accurate record of RBC waste at each individual site/area/ward. This information can be used to alert staff of RBC waste issues.

The Blood Matters wastage reduction project has been in place since August 2014 and RBC waste has reduced from 6.1 per cent to 1.7 per cent in October 2017 through the efforts of the laboratories and health services. The following points have been identified as crucial to the continued success of the project:

- Effective inventory management is paramount in the reduction of expiry related waste
- Sharing blood fridge compliance data between health services and pathology providers is essential
- Utilising the BloodNet fridges module for blood fridge data recording
- Movement of red cells between health services in a timely manner to ensure units have adequate time to be utilised at the accepting organisation
- Reducing that period of time blood maybe kept following a crossmatch
- Compliance with correct transportation methods RBC
- Increasing the use of visual prompts in blood fridges e.g. short expiry units
- State-wide implementation of electronic crossmatching methods
- Simplifying procedures, production of and compliance with a maximum blood ordering schedule (MBOS)
- Ongoing collaboration between health/pathology services