STANDARD 7: Blood Management

CRITERION: Clinical governance and quality improvement to support blood management (Actions 7.1 – 7.3)

Organisation-wide governance and quality improvement systems are used to ensure safe and high-quality care of patients' own blood, and to ensure that blood product requirements are met.

Provide a summary of processes in place to meet this criterion.

The Blood Management Committee (BMC) is the key governance body at Western Health (WH) for facilitating and promoting the safe, appropriate, efficient and effective care of a patient's own blood and all blood and blood products. The WH BMC reports directly to the Right Care Committee, forming part of the WH Best Care framework and committee reporting structure.

The WH BMC Charter details the committee's membership, responsibilities and key performance indicators that include all aspects of blood management including alignment of episodes with National Patient Blood Management (PBM) Guidelines, documentation of consent, compliance with WH procedures and wastage of blood products. Dedicated Blood Management Clinical Nurse Consultants (CNCs) support the work of the BMC though monitoring and audit activities, identification of procedural variations and opportunities for process/practice improvement.

WH has an overarching policy document covering Blood and Blood Product Management and a suite of referenced evidence-based procedures and guidelines (PPGs) that are compliant with jurisdictional legislation, national and international standards. Transfusion services at WH are provided by Dorevitch Pathology, which is NATA accredited.

If required, blood management risks are entered onto the WH Operational Risk Register and are routinely reviewed and updated by the WH BMC. All incidents and near misses, and adverse reactions relating to blood and blood products are entered into the WH incident management system (Riskman) and managed in accordance with the WH policy and procedure on health incident management and investigation. Incidents or near misses are a BMC Key Performance Indicator, tabled regularly to identify trends and potential/actual risks and inform practice improvement.

WH has a comprehensive blood management education program, with completion of the WH Blood Transfusion Practice Welearn course mandatory for nursing, midwifery and junior medical staff working in clinical areas where blood products may be requested, prescribed and administered.

A Blood and Blood Products or Transfusion Practice intranet site provides a central resource for staff on information and tools to support safe, appropriate and efficient blood management. A Blood Management newsletter with information and updates, identified risks and improvement strategies is sent to all clinicians on a regular basis.

Documented informed consent to blood product administration is required for all patients and guidelines are available for the care of patients who refuse blood products. Patients are actively involved in decisions concerning blood transfusion and information about blood products transfusion is provided and available on the hospital intranet site and WH Internet. This information is from authoritative sources and available in multiple languages including those common to the Western Suburbs community.

How does the health service monitor the requirements of this criterion are being met and where is the information reported?

A comprehensive audit program that encompasses all aspects of blood management is in place. Audit results are tabled at the BMC where they are reviewed to identify potential or actual risks and opportunities to improve practice and processes. Effectiveness of improvement strategies/processes implemented is assessed through ongoing Key Performance Indicator review.

Surveys of the patient's understanding of the consent to transfusion process are undertaken by the Blood Management CNCs, collated and reported to the BMC.

Minutes from BMC meetings and audit data are available to all WH staff on the BMC team site. Audit data and if applicable practice improvement tips are included in the regular Blood Management newsletter sent to all WH staff. An annual report is prepared by the BMC and Blood Management activities are also included in the WH Annual Quality Account report.

State and national benchmarking is enabled through participation in the Victorian Blood Matters program audits. Discard As a Percentage of Issue (DAPI) data is collated monthly and benchmarked against State and National percentages.

RiskMan reports of blood related incidents and near misses are reviewed by the Blood Management CNCs, presented at BMC meetings and where applicable referred to the Serious Adverse Events Committee to assess and identify whether these incidents could be reduced by improvements to policies, protocols and procedures.

Have improvements been implemented?

Audit and blood related incident review informs blood management improvements at WH.

For example, an audit of crossmatch versus transfusion ratio for patients attending Williamstown Hospital for major joint replacement provided an opportunity to change practice. As a result, routine crossmatch for primary arthroplasty at WH is no longer required, which has deceased costs associated with testing, significantly reduced handling and transport of Red Blood Cell units and prevented artificial inventory shortage and associated risks.

Audit results on documentation of transfusion completion times have also prompted change, with communications to nursing and midwifery staff and a targeted education program supporting a consistent improvement in the documentation of completion times (from 61% in January 2017 to 84% in October 2019).

During investigation of a suspected transfusion reaction it was found that there was no requirement for haematology or transfusion staff to be notified when in-depth case reviews involving patients who received blood products were being undertaken. This meant that advice regarding additional testing and where applicable reporting to the Blood Service for the purpose of identifying, testing and possibly donor deferral may not occur. This in-depth case review's recommendation has been amended to include notification to the Blood Management CNC if an incident involves blood and blood products.

Provide examples of outcomes since the previous onsite assessment:

Blood management audit results continue to show strong results. For example, of the 128 red cell transfusion episodes audited between January 2019 and July 2019: 92% (118/128) were assessed as being aligned with the National Patient Blood Management Guidelines.

Patient surveys continue to show that patients feel they are involved in the decision making process to receive a blood transfusion and feel they receive adequate information.

WH measures performance against the State and National discard rates that are provided by the Blood Service, with WH's red cell unit discard rate consistently lower than the State and National rates.

CRITERION: Prescribing and clinical use of blood and blood products (Actions 7.4 – 7.7) The clinical use of blood and blood products is appropriate, and strategies are used to reduce the risks associated with transfusion.

Provide a summary of the processes that are in place to meet this criterion.

The BMC develop evidence-based policy, procedures and guidelines that inform staff of the requirements for blood or blood products, decision making, prescription, administration and documentation. Supportive tools are available to facilitate appropriate transfusion, for example a dedicated prescription form with clinical practice guidelines for decision support.

WH has a dedicated blood products and transfusion practice area on the Intranet which includes national guidelines, guides for clinicians, education requirements and links. WeLearn courses are accessible for all staff and include modules for anaemia, patient blood management and coagulation, resources and links. Blood management transfusion practice is included in orientation programs for medical and nursing staff, and blood management forms part of the medical and nursing mandatory WeLearn requirements.

Management strategies to optimise and conserve a patient's own blood and minimise the likelihood of transfusion are included in relevant WH procedures and guidelines. Examples include: Pre-transfusion Testing & Blood Ordering Guidelines for Surgery, Haematinic Optimisation Before ARThroplasty (HOBART). Preoperative screening and treatment for Iron deficiency anaemia for patients having Gynaecological Surgery.

To facilitate the standardised practice for assessment and management of anaemia in patients undergoing arthroplasty, gynaecological surgery and maternity, patients are advised of scheduled appointment dates approximately 4-8 weeks prior to surgery (depending on clinical urgency).

Single unit red cell transfusion (for applicable patients) is included in procedures and monitored via BMC Key Performance Indicators. Intraoperative cell salvage is available and utilised for clinically appropriate surgical and obstetric patients.

Point of Care testing (ROTEM) to inform appropriate blood product administration is available in the Operating theatres at Joan Kirner Women's and Children's at Sunshine Hospital.

The principles of PBM are included in hospital orientation and education programs and there is a dedicated PBM module available to all WH staff via WH Welearn.

WH has a system to comprehensively record information on blood use, transfusion history and administration that is underpinned by best practice procedures and supportive tools.

Reactions to blood and blood products are reported in line with local and jurisdictional requirements. Locally, blood and blood product reactions are reported in Riskman and investigated by the Blood Management CNCs and where appropriate tabled at the BMC for review. Serious transfusion incidents and near misses are reported to the Victorian Serious Transfusion Incident Reporting System (STIR). Significant adverse events that may have traceability and recall implications are reported to the Blood Service, and reactions to fractionated blood products are reported to the manufacturer. Transfusion reactions are a BMC Key Performance Indicator.

How does the health service monitor the requirements of this criterion are being met and where is the information reported?

A comprehensive audit program that encompasses all aspects of blood management is in place. Audit results are tabled at the BMC where they are reviewed to identify potential or actual risks and opportunities to improve practice or processes. Effectiveness of improvement strategies and processes implemented is assessed through ongoing review.

Surveys of the patient's understanding of the consent to transfusion process are undertaken by the Blood Management CNCs, collated and reported to the BMC.

Minutes from BMC meetings and audit data are available to all WH staff on the BMC team site. Audit data and if applicable practice improvement tips are included in the regular Blood Management newsletter sent to all WH staff. An annual report is prepared by the BMC for the Right Care Committee. Blood Management activities are included in the annual Quality Account report.

Benchmarking is enabled through participation in the Victorian Blood Matters program audits. DAPI data is collated monthly and benchmarked against State and National percentages.

Riskman reports of blood related incidents and near misses are reviewed by the Blood Management CNCs, presented at BMC meetings and where applicable referred to the Serious Adverse Events Committee to assess and identify whether these incidents could be reduced by improvements to policies, protocols and procedures.

Have improvements been implemented?

Regular auditing of transfusion episodes occurs to assess alignment with National PBM Guidelines.

Investigation of an inappropriate episode revealed a Departmental Guideline that was not evidence based or aligned with National Guidelines and was contributing to inappropriate requests for blood products, in particular Fresh Frozen Plasma, and inappropriate transfusion. This was addressed with senior nursing and medical staff and the BMC collaborated with the Department to revise the Guideline to reflect best practice and National Guidelines.

A review of the process for identifying and managing preoperative anaemia was undertaken and revealed that apart from some targeted patient cohorts, WH were not routinely screening, identifying and managing patients with anaemia. Consultation was undertaken with relevant departments and clinicians, with a plan agreed to improve the identification and management of anaemia in patients having elective surgery.

Ongoing monitoring of timely availability of cryoprecipitate in major obstetric bleeding episodes showed delays from time of request to time to transfuse, and that this was unavoidable due to the need to thaw the product prior to issue. Timely availability was further compromised with the opening of Joan Kirner Women's and Children's as cryoprecipitate was not able to be validated for safe transport via the pneumatic tube system. Funding for a supply of Fibrinogen Concentrate was sourced and a supply for use in major obstetric bleeding episodes obtained. A Quality Assurance project "An audit of the treatment of Coagulopathy in the setting of Post-Partum Haemorrhage at Sunshine Hospital" is currently being undertaken. This will evaluate the impact of Fibrinogen Concentrate and appropriateness of blood product use through a pre and post introduction audit.

Provide examples of outcomes since the previous onsite assessment:

Auditing of transfusion episodes in 2018-2019 to assess alignment with National PBM Guidelines have shown that 92.5% of audited episodes are appropriate.

Amendment of the inappropriate Departmental Guideline contributed to a decrease in Fresh Frozen Plasma wastage from 20% in 2017/2018 to 14% in 2019.

To date Fibrinogen Concentrate had been administered on 10 occasions. Preliminary data indicates that the introduction of Fibrinogen Concentrate has positively reduced the requirement for allogeneic blood products in major obstetric bleeding episodes.

CRITERION: Managing the availability and safety of blood and blood products (Actions 7.8 – 7.10)

Strategies are used to effectively manage the availability and safety of blood and blood products.

Provide a summary of the processes that are in place to meet this criterion.

WH participates in the Victorian Haemo-Vigilance reporting program STIR (Serious Transfusion Incident Reporting).

All blood and blood products at WH are ordered and receipted by Dorevitch Pathology using the national blood ICT system BloodNet. Fate and transfer of products is recorded in BloodNet. Receipt, transfer and fate reports are accessible from BloodNet.

A blood product register has been implemented at the Williamstown Hospital as there is no on-site laboratory. The Register includes instructions for staff accepting blood products issued by the Footscray laboratory for a patient. Cold chain audit and checking of compliance with requirements is regularly undertaken by the Dorevitch Pathology scientists and Lab Manager – reports are tabled at BMC meetings. Completed Blood Product Registers are retained by Dorevitch Pathology.

WH has a single unit issue policy unless it is a critical bleeding episode. For episodes where multiple units are required, validated temperature controlled multi-unit transporters are used to minimise wastage.

Incidents relating to receipt, storage, collection and transport of blood and blood products are reported in the WH incident or the Dorevitch Pathology quality management system. Incidents are investigated, analysed, actioned and trended to identify recurring issues by the BMC or the Dorevitch Pathology Quality Assurance Unit.

Maintenance, service and required validation for refrigerators used for the storage of blood products is included in the WH preventative maintenance program and in accordance with the Australian Standard for Medical Refrigeration Equipment – For the Storage of Blood and Blood Products (AS3864.1 and AS3864.2). Service and validation reports are retained by Dorevitch Pathology.

Performance and documentation of temperature monitoring and alarm testing as required by Australian Standards AS3864.1 and AS3864.2 is undertaken for all refrigerators used for the storage of blood and blood products. Records are retained by Dorevitch Pathology.

Australian Health Provider Blood and Blood Products Charters have been developed for Footscray and Sunshine Hospitals. The National Blood Authority assessed WH as fully complying with all expectations and approved the Charters for both hospitals.

WH has an Emergency Blood Management Plan (EBMP) that aligns with the National Blood Supply Contingency Plan (NBSCP). The WH EBMP details activation phases and the responsibilities of WH clinical staff and WH's Pathology Service provider.

A contingency plan is in place in the event of refrigerator failure at Williamstown hospital to enable blood to be on-site as required whilst minimising wastage.

Dorevitch pathology have documented contingency plans for fridge or freezer failure in the laboratories at Footscray and Sunshine Hospitals.

How does the health service monitor the requirements of this criterion are being met and where is the information reported?

In accordance with STIR reporting criteria, adverse events are presented and discussed at the BMC and where imputability is assigned. Reviews and conclusions are documented in the BMC meeting papers. Reports to STIR are submitted by the Blood Management CNCs and an annual summary of submitted reports is provided to the Right Care Committee.

DAPI data is a BMC KPI. Data is collated monthly, benchmarked against State and National percentages and reviewed regularly at BMC meetings. DAPI data and if applicable practice improvement tips are included in the regular Blood Management newsletter sent to all WH staff. An annual report is prepared by the BMC for the Right Care Committee. Blood Management activities are included in the annual Quality Account report.

Incidents relating to receipt, storage, collection and transport of blood products are reported in the WH incident or the Dorevitch Pathology quality management system. Incidents are investigated, analysed, actioned and trended to identify recurring issues by the BMC or the Dorevitch Pathology Quality Assurance Unit. Effectiveness of improvement strategies/processes implemented is assessed through ongoing Key Performance Indicator review.

Cold chain audits are undertaken 6 monthly by Dorevitch Pathology. Deviations from procedure are reported by Dorevitch Pathology to the BMC.

Have improvements been implemented?

Monitoring of DAPI data and incident reports have informed process improvements that have decreased red cell wastage. These include:

- Review of the timely provision of blood products to Sunbury Day Hospital resulted in the introduction of a validated multi-unit transporter for transport of blood products from the transfusion laboratory to Sunbury Day Hospital.
- Development of "No Blood in this Fridge" stickers that are affixed prominently to all medication fridge doors in all clinical areas in response to a spike in units discarded from inappropriate storage in clinical areas. During the investigation it was found that a change from metal to glass doors on medication fridges had resulted in the previously in place "No Blood in this Fridge" magnets being discarded.
- Purchase of additional multi-unit transporters including a dedicated transporter for both the Joan Kirner Women's and Children's and the Footscray Hospital operating theatres.

In addition, the pneumatic tube system in Joan Kirner Women's and Children's has been validated for the safe and timely transport of blood products in urgent bleeding episodes. Transport has been limited to specified clinical areas for a 12 month period to enable monitoring of use and wastage.

Provide examples of outcomes since the previous onsite assessment:

As a result of improvement activities undertaken our red cell DAPI decreased from 2.17% in 2018 to 1.22% in 2019. WH are consistently at or below the State and National red cell DAPI percentages.

To date there has been no wastage of validated blood products transported via the pneumatic tube system at the Joan Kirner Women's and Children's and no reports of adverse impact on product integrity.