

Considerations and guidance for implementation of single unit transfusion

Supporting material for key champions within hospitals to present to relevant hospital governance committees seeking agreement to a single unit transfusion guideline and its implementation

Key Champions

Director Medical Service/Clinical Operations, Director of Nursing, Director Clinical Governance, Patient Safety/Quality Managers, Blood Management Medical and Nursing staff

Consider senior medical clinicians from: Haematology, Anaesthetics, Surgery, Renal, Oncology, Intensive care.

Chair of Transfusion Governance Committee / Patient Blood Management Committee

Hospital Governance committees

Clinical Governance, Policy and Procedure directors, CEOs, Hospital Boards / Directors / Executive, Quality Systems management

OUTLINE:

1. Introduction
2. Implementation Plan
3. Resources required
4. Plan for monitoring and tracking compliance / success
5. Examples of promotional material
6. Other successful Programs

1. Introduction

- a. Reasons modern health systems need to shift from product-focused transfusion practice to patient blood management.¹
 - i. Patient blood management has been shown to be a more effective concept than “appropriate use” in pre-empting the need for blood components, reducing overall use, and improving patient outcomes.
 - ii. The ageing population – increased demand for blood products and a reduced donor pool available.
 - iii. Increasing pressure on the cost of red blood cell transfusion – there are many different costs in the provision of a unit of blood from collection to transfusion – the real cost is a multiple of the actual product cost.
 - iv. The threat from known, new or re-emerging pathogens while facing uncertainty over their potentially long silent carrier states.
 - v. Emerging evidence that transfusion may be an independent risk factor for adverse outcomes including increased morbidity, mortality and hospital length of stay.²
- b. A single unit transfusion guideline and patient blood management will align with State and Territory Governments’ Health Service Strategic Plans, and Hospital organisational values and mission statements.
- c. Queensland, Victoria, New South Wales and South Australia Health Departments have strategic plans that have elements aligning with patient blood management principles. They variously mention health services focused on the patient, providing value, innovation, quality initiatives, and response to the aging population. (Western Australia already has a patient blood management program in place). This is true also of individual hospitals and hospital groups.
- d. A single unit transfusion guideline has the potential to reduce red blood cell utilisation and preserve the blood supply.^{3,4}

2. Implementation Plan

The following steps have been adapted from the Western Australia Government Single Unit Rule⁵

- a. Gain approval from executive management, medical director (or equivalent) for hospital or health group. Involve hospital quality managers, Transfusion Governance Committee and Clinical Governance / Patient blood Management Committee where possible.
- b. Identify and recruit champions from medical staff to assist in creation, promotion and implementation of a single unit transfusion guide.
- c. Develop timelines and an education plan.
- d. Identify staff for education and promotional roles, and/or utilise transfusion nurse specialists, hospital educators or equivalent if available.
- e. Utilise existing Transfusion Governance Committee to promote patient blood management and single unit transfusion through this group. Introduce patient blood management into Terms of Reference, local literature, and single unit transfusion into all hospital policies and procedures around transfusion practices.
- f. Education should ensure clarification that single unit transfusion does not apply to patients with clinically significant bleeding.⁶ If not already available, create a [Massive Transfusion Protocol](#).⁷

- g. Educate medical staff on the material provided to patients and the questions patients will be encouraged to ask. Ensure awareness of real risks of transfusion.
- h. If available, modify computerised physician order entry (CPOE) software to guide decision to transfuse, and prescription of red cells to ensure compliance with the Single Unit Transfusion guideline. Create distinction between “actively bleeding? – YES or NO” If No, only allow order for 1 unit at a time, with explanations required for over-rides.
- i. Hospital wide education to all staff: Use a catch-phrase : for example “**Every ONE matters**”, “**ONE bag is best - then reassess**” and “**Be Single minded**”. *Every ONE matters* has been used in the support documents but you may wish to substitute it with another catch-phrase. Consider:
 - i. Grand Rounds, Morbidity and Mortality (M&M) meetings, Division/specialty regular meetings or seminars
 - ii. Intranet and website features, internal magazines, regular internal publications including electronic communications. Cycle eye-catching and variable promotional material, repeat exposure regularly
 - iii. Laboratory staff meetings, education seminars, notice boards
 - iv. Display boards in medical specialty areas, staff rooms, conference rooms
 - v. Information incorporated into orientation education for medical, nursing and laboratory staff
 - vi. Information provided with every red blood cell issue from Laboratory for introductory period. Present it printed on the release report if possible with IT system in use, or leaflets
 - vii. Training manuals in laboratories to reflect patient blood management principles and single unit transfusion guideline information
- j. Patient / consumer education material available for pre-operative clinics, medical clinics, outpatient areas, emergency rooms, treatment rooms, and on public access websites.
- k. Empower and support transfusion nursing and laboratory staff to monitor compliance to a single unit transfusion guideline.
 - i. Provide copy of the guideline and scripts of questions and answers to assess prescription or request is compliant with the guideline parameters. Provide a mechanism to document requests and challenges.
 - ii. Ensure appropriate medical staff (haematology, clinician champion) are available to support challenges to requests.
 - iii. Provide easy access to educational material that the laboratory or nursing staff can share with prescribers, if necessary.

3. Resources Required

- a. Clinical Champions - clinical champions can be any interested health professional
- b. Nominated staff to provide education, promotion, monitoring and data collection
- c. Printed promotional material; posters, leaflets, brochures
- d. Electronic promotional material – IT support for access to local systems
- e. Ability to modify existing electronic ordering software if available

4. Plan for monitoring and tracking compliance / success

- a. Collect data to monitor compliance to the guideline and provide feedback to Hospital Executive / Quality Managers, Transfusion Governance Committee / Patient Blood Management Committee, Medical Specialties/ Divisions, Nursing Unit Managers, Educators, Laboratory managers and senior staff.
- b. Data may include:
 - i. A log of requests submitted that do not fall within the policy criteria.
 - ii. The number of red blood cell units ordered into inventory daily (BloodNet statistics).
 - iii. The number of red blood cell units transfused per patient.
 - iv. The number of patients who received a single red blood cell unit transfusion per 24 hours.
 - v. Audits of patient medical records and transfusion episodes assessing compliance to the single unit transfusion guideline.
- c. Provide feedback:
 - i. Introduce this data collection and analysis as a standing item on the Transfusion Governance Committee / Patient Blood Management Committee agenda.
 - ii. Report results to wards and divisions regularly, and to quality managers, for example with regular clinical meetings or newsletters.
 - iii. Share statistics with transfusion staff to highlight the impact of the introduction of the single unit transfusion guideline.
 - iv. Provide a forum for problems or difficulties to be aired, discussed and resolved.
 - v. Provide access to further information regarding a single unit transfusion guideline and patient blood management.
- d. Benchmark data within local wards and divisions, and between health facility groups and clusters, and with external facilities. Benchmark within states and territories, and nationally.
- e. This activity will demonstrate compliance with National Health and Safety in Health Care Standard 7: Blood and Blood Products:⁸
 - 7.1.2 The use of policies, procedures and/or protocols is regularly monitored.

5. Examples of promotional material – see supporting material

- a. Posters
- b. PowerPoint Presentation
- c. Handout for staff

6. Other Successful Programs

Australia: The Western Australian Government implemented the Patient Blood Management Project, with a single unit transfusion “rule” in 2011.⁵

New Zealand: The Auckland District Health Board⁹ introduced patient blood management and a single unit transfusion policy in 2010.

Canada: St. Michael’s Hospital in Toronto,¹⁰ became one of the first in Canada to implement a blood conservation program in 1998. The Ontario Transfusion Coordinators (ONTraC) program administered through St. Michael’s sets the standard in the province for patient blood management.

USA: Eastern Maine Medical Centre, Bangor.¹¹

Europe:¹² Patient blood management strategies have been established in some hospitals in Austria and Switzerland. The Netherlands have had a patient blood management program for ten years.

The United Kingdom Blood Transfusion & Tissue Transplantation Services “*Better Blood Transfusion*” Toolkit¹³ includes statements on single unit red blood cell transfusion.

Further Reading

The following list has been provided as a starting point for further reading:

- National Blood Authority (NBA) (2012). Patient Blood Management Guidelines NBA, Canberra, Australia. <http://www.blood.gov.au/pbm-guidelines>
- World Health Organisation, World Health Assembly, 2010, 63rd Assembly. WHA63.12 Agenda item 11.17: Availability, safety and quality of blood products. 21 May 2010. Page 3: www.who.int/bloodsafety/BTS_Resolutionsadopted.pdf
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- Galas F, Almeida J et al. 2013. Blood transfusion in cardiac surgery is a risk factor for increased hospital length of stay in adult patients. *Journal of Cardiothoracic Surgery* 2013, 8:54.
- Villanueva C, Colomo A 2013. Transfusion Strategies for Acute Upper Gastrointestinal Bleeding. *N Engl J Med* 2013 Jan;368;1:11-21.
- The British Committee for Standards in Haematology(BCSH) (2012). Guidelines on the Administration of Blood Components. Addendum to Administration of Blood Components, August 2012 pdf. http://www.bcshguidelines.com/documents/BCSH_Blood_Admin_-_addendum_August_2012.pdf

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2. Hofmann, A., Farmer, S. & Towler, S. C. Strategies to preempt and reduce the use of blood products: an Australian perspective. *Current opinion in anaesthesiology* **25**, 66–73 (2012).
3. Berger, M. D. *et al.* Significant reduction of red blood cell transfusion requirements by changing from a double-unit to a single-unit transfusion policy in patients receiving intensive chemotherapy or stem cell transplantation. *haematologica* **97**, 116–122 (2012).
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5. Western Australia Government Single Unit Rule: A Quick Start Guide to Transfusion Reduction. (2012).at <http://www.health.wa.gov.au/bloodmanagement/docs/Single_Unit_Rule.pdf>
6. Weibert, K. E. *et al.* A new tool to assess bleeding severity in patients with chemotherapy-induced thrombocytopaenia. *Transfusion Practice* **52**, 2466–2474 (2012).
7. National Blood Authority *Patient Blood Management Guidelines: Module 1 - Critical Bleeding / Massive Transfusion*. (Canberra, Australia, 2011).at <<http://www.blood.gov.au/pbm-guidelines>>
8. Australian Commission on Safety and Quality in Healthcare *Safety and Quality Improvement Guide Standard 7: Blood and Blood Products*. ACSQHC (2012).at <http://www.safetyandquality.gov.au/wp-content/uploads/2012/10/Standard7_Oct_2012_WEB.pdf>
9. Ombler, K. Blood is a Gift. Project of Auckland District Health Board Transfusion Committee. *Public Sector* **36:1**, (2013).
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