

# Better Practice Case Study: Burnside War Memorial Hospital

When less is more – how a private hospital’s review of perioperative blood ordering practices reduced blood bag handling, improved patient safety and freed up nurses for patient care



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## BACKGROUND

It was during a hospital-wide Australian Council on Healthcare Standards (ACHS) survey in 2010 that the surveyor noted that Burnside War Memorial Hospital held a high cross matched blood inventory, a large proportion of which was returned to the laboratory unused. The recommendation was that the hospital “review the unused blood returned to the private pathology laboratories and report findings to the appropriate clinical review/quality committee.” Burnside Hospital’s Perioperative Services Clinical Manager and nursing staff, with the assistance of the BloodSafe program, took this one step further and implemented simple, but effective changes in its perioperative red blood cell ordering practices. These changes have since reduced blood handling, reduced a risk to patient safety and freed up the nursing staff for patient care, and enabled a reduction in crossed matched blood in the fridge. In addition, Burnside Hospital is well on its way to meeting Standard 7 of the National Safety and Quality Health Service Standards (NSQHS), specifically:

## *7.2 Undertaking a regular, comprehensive assessment of blood and blood product systems to identify risks to patient safety and taking action to reduce risks*

7.2.1 The risks associated with transfusion practices and clinical use of blood and blood products are regularly assessed

7.2.2 Action is taken to reduce the risks associated with transfusion practices and the clinical use of blood and blood products

## *7.4 Undertaking quality improvement activities to improve the safe management of blood and blood products*

7.4.1 Quality improvement activities are undertaken to reduce the risks of patient harm from transfusion practices and the clinical use of blood and blood products



## *7.7 Ensuring the receipt, storage, collection and transport of blood and blood products within the organisation are consistent with best practice and/or guidelines*

7.7.1 Regular review of the risks associated with receipt, storage, collection and transport of blood and blood products is undertaken

7.7.2 Action is taken to reduce the risk of incidents arising from the use of blood and blood products control systems

## *7.8 Minimising unnecessary wastage of blood and blood products*

7.8.2 Action is taken to minimise wastage of blood and blood products

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## WHO ARE BURNSIDE HOSPITAL AND BLOODSAFE?



**BURNSIDE  
HOSPITAL**

Burnside Hospital is a private hospital set in tranquil, heritage-listed gardens just ten minutes from Adelaide's city centre. It has a longstanding reputation for excellence and attracts patients from throughout South Australia and interstate. Its dedicated team is committed to providing safe contemporary care to every patient, every time.

As a not-for-profit community-based hospital, Burnside reinvests all surplus funds in improving and upgrading services, facilities and equipment.

The BloodSafe program ('BloodSafe') is a blood transfusion safety and quality improvement collaborative between SA Health, the Australian Red Cross Blood Service, SA public and private hospitals and their transfusion service providers. Private hospitals in SA are supported by a part time BloodSafe Transfusion Nurse consultant to assist with transfusion quality improvement activities.



South Australian Health's partner program, BloodMove, works in parallel with BloodSafe, providing scientific and technical advice and resolving product transfer issues to reduce blood and blood product wastage.

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## WHAT IS THE PROCESS FOR MANAGING BLOOD AT BURNSIDE HOSPITAL?

The Burnside Hospital can receive patient specific crossmatched red blood cells from four different pathology companies, depending on the prescribing doctor's preference. In addition to their regular patient care, the Recovery Unit nursing staff conduct daily monitoring of crossmatched red blood cells in the fridge. The blood refrigerator is situated near the perioperative service and each unit received is entered by hand into a registry by the Recovery Unit nursing staff. In addition, the nurses must monitor the units in the fridge to ensure they are returned to the relevant pathology company after 72 hours from the time of crossmatch. This practice involves follow-up phone calls to the ward areas to see if the patient is likely to require the transfusion and then to the pathology companies to collect unused units.

In order to ensure the blood fridge remains AS 3864.2-2012 compliant, the nurses perform daily temperature monitoring and recording. They are also responsible for forwarding the information to the primary pathology provider.

Blood fridge maintenance and regular checks are performed by the maintenance department, with yearly assessment and ongoing support by the South Australian BloodMove scientist.



The remote fridge stocks 4 units of emergency O negative red blood cells with more available from the primary pathology provider in an emergency

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## HOW DID BURNSIDE HOSPITAL REVIEW THEIR PROCESS FOR MANAGING BLOOD?

### INFORMATION - RETROSPECTIVE AUDITS:

#### INITIAL AUDIT:

Burnside Hospital's nursing staff took a proactive approach following the 2010 ACHA surveyor recommendations. Initial investigations revealed that approximately 60% of crossmatched red blood cells were returned to their issuing pathology provider after a 3-day period. Only 40% of crossmatch blood was actually transfused. This represents a crossmatched to transfused ratio of 2.5:1.

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Recovery Unit nurses could spend up to 2 hours per day on red blood cell management. This included receiving stock from up to 4 separate private pathology companies, manually checking and logging the units, monitoring the blood fridge, phoning the ward staff every day to see if the post-operative patients with crossmatched blood were likely to require it, and ensuring unused units were returned. The practice also affected ward nursing staff, taking them away from direct patient care to follow-up on the likelihood of transfusion.

The data produced from this audit provided preliminary information on where improvements on red cell inventory management could be made and led to a larger, in-depth audit.

### **FURTHER INVESTIGATIONS – AN IN DEPTH AUDIT:**

Having identified potential red blood cell inventory management improvements on a small scale, the nursing and quality staff at Burnside decided to expand their audit and look for wider opportunities. The BloodSafe Transfusion Nurse was consulted and assisted the hospital in undertaking a retrospective audit of the pre-operative crossmatch practices in the identified specialty. The aim of the investigation was to identify:

- possible trends in blood ordering practices,
- transfusion rates, and
- the day of transfusion.

Burnside Hospital drilled down to the ordering and usage data at the specialty level, and then at the individual surgeon level. This audit reviewed what, if any, preoperative test was ordered, that is; group and save or crossmatch, quantity of red blood cells ordered and the transfusion rate for each surgeon.

The audit identified that the preoperative ordered blood cell ordering practices varied among the surgeons. Most notably, the findings showed that more than two and a half times as much blood was crossmatched than actually transfused.

Concurrently, Burnside Hospital's Medical Executive Committee requested "turnaround times" for all blood products from each of their pathology providers – the time expected for an ordered product to arrive at the hospital for both patients with a current group and save and those without. The information was tabled at the Perioperative Committee for review and was accepted by the Clinical Review Committee before it was collated and made available to all staff. This information is available in relevant clinical areas to assist clinicians when ordering blood who now know they can receive blood from a group and save in 30 minutes to 1 hour depending on the pathology provider. In an emergency, group specific unmatched blood is available in 20 minutes. Additionally, the onsite blood fridge holds four O negative units which can be used immediately if required.

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## **HOW DID BURNSIDE HOSPITAL MAKE THE CHANGE?**

### **COMMUNICATION:**

Burnside Hospital actively engaged staff in discussion surrounding blood ordering practices. As the audit identified perioperative blood ordering and transfusion practices on a specialty and also individual level, the Clinical Manager Perioperative Services was able to initiate discussions with each surgeon regarding the audit findings. These simple conversations resulted in an immediate change in practice with a significant reduction in the number of red cells entering the hospital. In addition, the availability of the new "turnaround form" provided reassurance that blood could be accessed promptly.

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## EDUCATION:

Any clinician ordering blood at Burnside Hospital is encouraged to order in accordance with the national Patient Blood Management Guidelines, and to reflect on their own usage rates when placing orders. The hospital executive team now include a discussion in the orientation of new Visiting Medical Officers in regards to availability, processes and expectation around blood ordering and use at Burnside Hospital. In addition a section regarding blood is sometimes included in the hospital bulletin for doctors. The ongoing education has assisted with the sustained change and continuing improvements.

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## WHAT DO THE CHANGES MEAN FOR BURNSIDE HOSPITAL?

### DELIVERIES:

Deliveries can occur at any time from the pathology companies. It is the responsibility of the Recovery Unit nurses to check the inventory with the courier, unpack, manually record the inventory and place it in the blood fridge. Since the changes have been implemented, the number of daily pathology deliveries has decreased from up to five to only one or two per day.

Ongoing audits have demonstrated that Burnside Hospital have achieved a 67% reduction in red blood cell units ordered and delivered to the hospital.

### BLOOD STOCK MONITORING:

Fewer red blood cell units are returned to the issuing pathology company since the audit and culture change. Crossmatches are now only attended where there is real likelihood of transfusion, rather than based on historical practice. As a result the amount of crossed matched blood held in the fridge has been significantly reduced.

A minimum number of emergency O negative red blood cells are held on site at all times, however the primary pathology company that delivers the emergency stock is responsible for monitoring the levels and expiry dates.

With the introduction of the “turnaround form” in all theatres, staff have immediate access to all servicing pathology company contacts and details, including timeframe on delivery and what blood components each company holds. This not only ensures that urgent orders can go straight to the source, but also that surgeons and anaesthetists feel more comfortable with utilising group and save rather than delivered crossmatch blood for procedures with a low likelihood of transfusion.

Since implementing new practises, the time spent checking the blood and blood product inventory has been reduced from up to two hours to less than 15 minutes per day. Nurses in the Recovery Unit and on the wards now have more time to provide direct patient care.



Nurses at Burnside no longer spend several hours each day following up on blood orders with ward staff.

## REDUCED BLOOD MOVEMENT:

It has been reported by a private transfusion service provider in South Australia that, on average in their facility, a unit of red cells is crossmatched and issued four times before it is transfused to a patient. The changes that Burnside Hospital were able to make in regards to reducing the amount of unused red blood cells entering the hospital assists the transfusion service providers with better inventory management of their red blood cells, ensuring there is more available for release from the pathology laboratories. The reduced movement may also help reduce wastage rates for the providers as blood is more likely to be utilised before expiry and less likely to be damaged through excess handling.

The BloodMove initiative assists the private pathology companies in SA with the process of accepting unused red blood cells back into their inventory with the coordination of evidence that the remote blood fridges in the SA private hospitals meet AS 3864.2 -2012. With wastage rates at some facilities in the Australian private health sector at over 60%, the ability of private laboratories in South Australia to accept unused blood has a great impact in reducing wastage rates.

Ongoing audits have demonstrated that Burnside Hospital has achieved a 50% reduction in red blood cell units being returned to the pathology providers with the crossmatch to transfusion ratio now at 1.5:1.

## IMPROVED PATIENT SAFETY:

With reduced crossmatched blood in the blood fridge the Recovery Unit nurses have more time for patient care with less time spent on managing blood deliveries, completing the register, and phoning the wards and pathology companies for returns. The ward nursing staff also spend less time following-up the likelihood of a post-operative transfusion, allowing more time for direct patient care. Finally, although it has never occurred at Burnside Hospital, there is a reduced risk of the incorrect unit being in inadvertently transfused to a patient. Less crossmatched blood means there are fewer units to select from, particularly in an emergency when reaching for an O negative unit.

## CULTURE CHANGE:

Burnside Hospital has seen a downward trend in blood ordering and usage. This may be attributed to a number of changes in patient blood management alternatives to transfusion such as the introduction of the Argon Plasma Electro Surgical Coagulator, lower transfusion thresholds, increased use of Intraoperative Cell Salvage and tranexamic acid, and a management approach to a less-is-more usage culture in addition to the new ordering regime.

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## HOW DO THESE ACTIVITIES ASSIST BURNSIDE HOSPITAL TO MEET STANDARD 7?

### **The audits assist with achieving NSQHS Standard 7.2 and 7.4:**

*7.2 Undertaking a regular, comprehensive assessment of blood and blood product systems to identify risks to patient safety and taking action to reduce risks*

7.2.1 The risks associated with transfusion practices and clinical use of blood and blood products are regularly assessed

7.2.2 Action is taken to reduce the risks associated with transfusion practices and the clinical use of blood and blood products

*7.4 Undertaking quality improvement activities to improve the safe management of blood and blood products.*

7.4.1 Quality improvement activities are undertaken to reduce the risks of patient harm from transfusion practices and the clinical use of blood and blood products

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### **Reduced blood movement assists with achieving with NSQHS Standard 7.8:**

*7.8 Minimising unnecessary wastage of blood and blood products*

7.8.2 Action is taken to minimise wastage of blood and blood products.

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### **The reduced amount of crossmatched blood assists with achieving NSQHS Standard 7.7:**

*7.7 Ensuring the receipt, storage, collection and transport of blood and blood products within the organisation are consistent with best practice and/or guidelines*

7.7.1 Regular review of the risks associated with receipt, storage, collection and transport of blood and blood products is undertaken

7.7.2 Action is taken to reduce the risk of incidents arising from the use of blood and blood products control systems

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### **The culture changes assist with achieving NSQHS Standard 7.1 and 7.2:**

*7.1 Developing governance systems for safe and appropriate prescription, administration and management of blood and blood products*

7.1.3 Action is taken to increase the safety and appropriateness of prescribing and clinically using blood and blood products

*7.2 Undertaking a regular, comprehensive assessment of blood and blood product systems to identify risks to patient safety and taking action to reduce risks*

7.2.1 The risks associated with transfusion practices and clinical use of blood and blood products are regularly assessed

7.2.2 Action is taken to reduce the risks associated with transfusion practices and the clinical use of blood and blood products

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## For more information

For more examples of better practice case studies visit [www.blood.gov.au](http://www.blood.gov.au)

To see other case studies in the series visit [www.blood.gov.au/case-studies](http://www.blood.gov.au/case-studies)

To see a presentation by Trish Roberts featuring Burnside Hospital at the National Blood Symposium in Adelaide 2013 visit [www.blood.gov.au/symposiums-2013](http://www.blood.gov.au/symposiums-2013)

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## Contact Officers

For further information please contact:

Yvonne Rebner  
Clinical Manager, Perioperative Service  
Burnside War Memorial Hospital  
[yrebner@burnsidehospital.asn.au](mailto:yrebner@burnsidehospital.asn.au)  
[www.burnsidehospital.asn.au](http://www.burnsidehospital.asn.au)

Trish Roberts  
BloodSafe Transfusion Nurse Consultant  
BloodSafe SA  
[TKRoberts@redcrossblood.org.au](mailto:TKRoberts@redcrossblood.org.au)  
[www.bloodsafe.sa.gov.au](http://www.bloodsafe.sa.gov.au)

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