

Optimising Red Blood Cell (RBC) inventory



SAFETY INFORMATION 001/26

Issue date:	21 January 2026
Content reviewed by:	NSW Health Pathology Transfusion Clinical Stream Lead.
Distributed to:	Chief Executives; Directors of Clinical Governance; Director, Regulation and Compliance Unit
KEY MESSAGE:	Careful red blood cell (RBC) inventory management and awareness of recent clinical practice changes are required to ensure the best use of available RBCs following an increase in recent community donations.
ACTION REQUIRED BY:	Clinicians
REQUIRED ACTION:	<ol style="list-style-type: none">1. Distribute this Safety Information to all pathology laboratories, relevant clinicians and clinical departments to increase awareness about the RBC inventory management strategies2. Ensure clinical staff are aware of contemporary clinical practice guidance related to irradiated RBCs requirements and age of RBCs.3. Include this Safety Information in relevant handovers and safety huddles.
DEADLINE:	N/A
We recommend you also inform:	Directors, Managers and Staff of: Medical Services, Nursing and Midwifery Services, Pathology Services
Website:	https://www.health.nsw.gov.au/sabs/Pages/default.aspx http://internal.health.nsw.gov.au/quality/sabs/index.html
Review date:	1 June 2026

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Situation

There has been a significant increase in community blood donations from across NSW in recent weeks, requiring careful red blood cell (RBC) inventory management to avoid unnecessary wastage while maintaining patient safety. To support the most efficient, evidence-based strategies to optimise use of donated blood, Lifeblood have issued recent requests for support^{1,2} related to: ordering of Group AB RBCs; use of 'irradiation equivalent' RBCs, where appropriate; and supply of red cells with a broader range of red cell age than typically seen.

Background

Robust national and international evidence supports several established practices that underpin these recommendations:

- Only about 3-4% of the population are group AB. To avoid wastage, some facilities don't routinely include group AB RBCs in their inventories and instead substitute with other ABO compatible blood groups for transfusion requirements.
- Available clinical and laboratory evidence confirms that RBCs stored beyond 21 days provide the equivalent protection against transfusion-associated graft-versus-host disease as irradiated RBCs for most patient groups.
- The use of irradiation equivalent red cells is supported by current ANZSBT Guidelines for the Prevention of Transfusion-Associated Graft-Versus-Host Disease.³
- Large randomised controlled trials and meta-analyses demonstrate no increase in mortality or adverse clinical outcomes associated with transfusion of red cells across a broader storage age range in general clinical populations.
- This recommendation is also supported by National Blood Authority reports that the age of transfused RBCs does not contribute to increased mortality⁴
- The NSW Health Pathology Transfusion Clinical Stream has reviewed the available evidence and supports the Lifeblood recommendations as clinically safe and aligned with national standards.

Assessment

- The Lifeblood request represents a practical, evidence-based response to current inventory pressures and aligns with relevant national clinical and laboratory standards.
- NSW Health Pathology have already responded to and issued advice related to the recent Lifeblood requests for strict RBC inventory management and will continue to implement appropriate laboratory strategies.
- Clinicians may not be aware that it is safe to use 'irradiation equivalent' RBCs for some patient groups.
- Note: Standard irradiated red cells **MUST** continue to be used for high-risk indications, including intrauterine transfusions, exchange transfusions, neonatal and specific paediatric patients, and those with additional indications for blood < 14 days. Please discuss with Haematologist on call or treating clinician for more advice if needed.

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Recommendations

Clinicians are asked to support the following actions during this period:

1. Pathology providers are to order a small number of Group AB RBCs, if not already doing so.
2. For Pathology providers who do not routinely hold stock of Group AB red cells, we support the suggestion to order a small number so that there is an opportunity to use these red cells prior to expiry.
3. Be aware that red cells labelled as “irradiation equivalent” (greater than 21 days cold storage) may be issued in place of irradiated units for appropriate patients.
4. Note: Laboratories have been notified that when issued in place of an irradiated unit (where an irradiated product was otherwise indicated), the unit will be tagged with the following information:

*“Considered irradiation equivalent for the prevention of graft versus host disease
(Cold stored red cells > 21 days since collection)”*

5. Continue to request standard irradiated red cells where clinically indicated for high-risk patients as above.
6. Accept red cells supplied across a broader age range, noting that this does not compromise patient outcomes.
7. Seek advice from local haematology or transfusion services if there is uncertainty regarding patient eligibility.

References

1. Lifeblood Communication 8/1/26: Re: Optimising red cell inventory - use of ‘irradiation equivalent’ red cells
2. Lifeblood Communication 16/1/26: Re: Optimising red cell inventory
3. Australian New Zealand Society of Blood Transfusion (2024). Prevention of Transfusion-Associated Graft-Versus-Host Disease (TA-GVHD) <https://anzsbt.org.au/guidelines/prevention-of-transfusion-associated-graft-versus-host-disease-ta-gvhd/>
4. National Blood Authority (2025). National Guidance for the Management of Red Blood Cell Inventory <https://www.blood.gov.au/blood-products/blood-product-management/inventory-management-blood-and-blood-products>
5. NSW Health Pathology (2026). Memo - Optimising Red Cell Inventory: Use of ‘Irradiation Equivalent’ Red Cells