The indications for the use of O RhD negative red blood cells audit 2024

Instructions, definitions, and frequently asked questions

Introduction

Demand for group O RhD negative red blood cells (RBC) (as high as 17 per cent (Use of group O RhD negative red cells | Lifeblood)) continues to be greater than the proportion of the population who is O RhD neg (6.5 per cent (Hirani, 2022).

The 2018 Blood Matters Use of Group O RhD negative RBC audit reported that 32 per cent of all O RhD negative RBCs were transfused to recipients outside the Guidelines for the use of group O RhD negative RBC (Blood Service and NBTC 2008). The most common reason (n=337, 17 per cent) for transfusing group O RhD negative RBCs to non-identical recipients was to prevent expiry.

The demographics of the Australian population have changed, as have the distribution of blood groups. More Australians are RhD positive (85.9 per cent, up from previously quoted 81 per cent), and there has been a shift in proportion of the population group O to group B and AB (Hirani R 2022). Despite this changing demographic, in general RBC inventory holdings are yet to reflect that of the population.

The National Statement for the Emergency Use of Group O Red Blood Cells (NBA, 2023) recommends O RhD positive RBCs to be given to women over 50 years and males over 18 years in an emergency setting, where patient blood group is unknown. This reduces the demand for O RhD negative RBCs to ensure ongoing supply for those recipients who have no alternative but to receive this group.

This audit will provide a direct comparison to the Blood Matters 2018 audit, for health services to assess compliance or gaps in practice and help identify any ongoing challenges.

References

Use of group O RhD negative red cells | Lifeblood

Hirani, R., Wong, J., Diaz, P., Mondy, P., Hogan, C., Dennington, P. M., Pink, J. and Irving, D. O. (2017), A national review of the clinical use of group O D– red blood cell units. Transfusion, 57: 1254–1261.

Hirani R, Weinert N, Irving D. The . The distribution of ABO RhD blood groups in Australia, based on blood donor and blood sample pathology data | The Medical Journal of Australia (mja.com.au) 2022

Blood Matters Use of O RhD negative red blood cells according to guidelines audit report 2018.

National Statement for the Emergency Use of Group O Red Blood Cells (NBA 2023)

Aims:

- To document the use of O RhD negative red blood cells.
- To compare characteristics of patients receiving O RhD negative RBCs against the current "Indications for the use of Group O RhD negative RBCs" prepared by Australian Red Cross Lifeblood to determine the true need of O RhD negative RBC. Use of group O RhD negative red cells | Lifeblood

Method:

What to audit:

Report retrospectively the fate (transfused, discarded, or rotated) of **ALL** O RhD negative RBCs **ISSUED** during **March 2024**. Some components will not be fated until 42 days from 31 March 2024 (12 May 2024).

For O RhD negative RBC issued in March 2024:

1. Report 100% of ALL O RhD neg RBCs transfused to a patient
2. Report 100% of ALL O RhD neg RBCs discarded
3. Report on 100% of ALL O RhD neg RBCs that were rotated/transferred/recalled. This includes reporting on ALL O RhD neg RBCs transferred into your health service in this period.

Blood Matters will provide all Victorian transfusion services/blood banks with a list of O RhD neg RBC which were received, transferred or discarded (including recalls) during March 2024.

The designated auditor at your health service will need to contact your transfusion laboratory/blood bank to obtain a list of donation numbers which require fate investigation. Where multiple pathology providers supply your health service, each pathology provider will need to be contacted for this information.

The blood fridge register may assist identifying and reporting on RBCs received, discarded, rotated or transfused. Depending on your health service computer system interfaces, you may need to collaborate further with your transfusion service/blood bank to obtain the necessary information.

Data collection:

Please complete both tabs "Policy" and "Usage" of the Excel data collection spreadsheet. Data entry will be open from **12 May to 28 June 2024**.

Return completed data by **28 June 2024** via email to bloodmatters@redcrossblood.org.au

Definitions

Description	Definition
Transfusion episode*†	The interval in patient care from the time of the prescription of a defined number of RBCs for a patient and the time of completion of administration of RBCs to that patient. A new transfusion episode starts with a new assessment and a new prescription. Transfusion episode may also cover a massive haemorrhage protocol (MHP) - activated when the patient has critical bleeding that is life-threatening and is likely to result in the need for massive transfusion (greater or equal to 5 RBCs in 4 hours).
* Blood Measures A Guide to the Set of Standard Measures for the use of Fresh Blood Components in Australia. NBA 2009 †National Blood Authority. Patient Blood Management Guidelines: Module 1 – Critical Bleeding/Massive Transfusion 2023 Patient blood management guideline for adults with critical bleeding | National Blood Authority.	

Audit fate category	BloodNet discard code included in audit fate category
Discard – Clinical, ordered for patient and not required	Clinical – ordered for patient, not required
Discard – Clinical, transferred with patient and subsequently discarded (**transferring or receiving facility**)	Clinical - transferred with patient
Discard - Damaged	Damaged - in laboratory
	Damaged - inter hospital/inter lab transit
	Damaged - on ward
	Damaged - possible contamination
	Damaged - supplier transit
	Damaged - visually unacceptable
Discard - Expired	Expired - red cells converted to irradiated red cells
	Expired - time expired
Discard – Storage, out of controlled storage for >30 minutes	Storage - out of controlled storage for >60 minutes
	Storage - out of controlled storage for >30 but <60 minutes
Discard – Storage, refrigeration failure	Storage – refrigeration failure

Discard – Storage, temperature control unknown	Storage – temperature control unknown
Discard - Recall	Recall - by supplier, discarded in hospital/lab
	Recall - by supplier, product physically returned to supplier
Discard - Transport	Transport - incorrect packing
	Transport - incorrect packing from supplier
	Transport - temperature failure
	Transport - temperature failure from supplier
Discard – Other, please state reason	Other
	Other - stocktake adjustment
Transferred out of health service, **for a specific patient**	Transfer from my facility (transfer out)
Rotation, transferred to another health service **to prevent wastage due to time expiry**	Transfer from my facility (transfer out)

Transfusion urgency (based on clinical need)*	**Definition**
Emergency: product required immediately/ within 1 hr	Resuscitation of life-threatening/ongoing blood loss from any cause, including major trauma and obstetric haemorrhage
Urgent: product required within 24 hrs	Emergency and other non-deferrable surgery. Nonsurgical anaemia including life-threatening anaemia (which may include in-utero support, neonatal intensive care, support for stem cell transplantation or chemotherapy, and patients with other conditions who cannot tolerate any delay in transfusion).
Routine: product required, but can be delayed more than 24 hours	Symptomatic but not life-threatening anaemia of any cause (including postoperative or postpartum), which cannot be managed by other means.
*These have been adapted from the BloodHound (Assessment of the urgency and deferability of transfusion to inform emergency blood planning and triage: the Bloodhound prospective audit of red blood cell use - Shortt - 2009 - Transfusion - Wiley Online Library).	
Primary reason O RhD neg RBC selected	**Definition**
O neg	O RhD neg patient

ABO unknown	Blood group of patient unknown at time of transfusion
Insufficient stock	Blood group known but ABO group specific blood not available (insufficient stock) in inventory (other than phenotype specific).
Stock not held	Blood group known but ABO group specific blood not held in **standard inventory** (other than phenotype specific).
Phenotype	To meet patient's specific phenotype requirements
Special requirements	To meet patient's special requirements, such as CMV negative, irradiated
Mismatched transplant	Support ABO mismatched haemopoietic transplant patient
Neonate	Use for a patient aged 12 months or younger
Avoid time-expiry	Transfused to avoid time-expiry
Unknown	Unknown
Other (please state reason)	Other

Frequently asked questions (FAQs)

FAQs
Do I have to complete the audit?
Yes. ALL public and private Victorian health services which receive and stock O RhD neg RBC must have 100 per cent of ALL O RhD neg RBC fates reported as per the defined categories.
What RBCs do I need to audit?
The audit period covers O RhD negative RBC issued in March 2024. Health services/laboratories need to audit each O RhD negative RBC that were issued or transferred into their inventory during March. That is whether it was transfused, transferred, rotated or discarded. Some components will not be fated until 42 days from 31 March 2024 (12 May 2024).
Our health service has received the O RhD neg audit and we have multiple laboratories that supply O RhD neg RBC – do we need to complete for all RBCs?
All O RhD neg RBC are to be included (from all laboratories). The audit aims to capture the fate (transfused, discarded, or rotated) of 100 per cent of ALL O RhD neg RBC issued during the auditing period.
Our health service has received the O RhD neg audit and we have multiple sites – do we need to complete the audit for all sites?
All laboratory and individual health service sites are to be included. The audit aims to capture the fate (transfused, discarded, or rotated) of 100 per cent of ALL O RhD neg RBC issued during the auditing period.
We have O RhD neg RBCs rotated into our laboratory as part of the hub and spoke system – do we need to include these RBCs in the audit?
Any O RhD negative RBC rotated into your laboratory during March 2024 must be included in the audit. The audit aims to capture the fate (transfused, discarded, or rotated) of 100 per cent of ALL O RhD neg RBC issued during the auditing period.
Where will I find the information about which O RhD neg RBCs to audit?
Blood Matters will provide all Victorian transfusion services/blood banks with a list of O RhD neg RBC which were received, transferred, or discarded (including recalls) during March 2024. Some components will not be fated until 42 days from 31 March 2024 (12 May 2024). The designated auditor will need to contact your transfusion laboratory/blood bank to obtain the list of donation numbers which require fate investigation.

Where multiple pathology providers supply your health service, each pathology provider will need to be contacted for this information. The blood fridge register may assist identifying and reporting on RBCs received, discarded, rotated or transfused. Depending on your health service computer system interfaces, you may need to collaborate further with your transfusion service/blood bank to obtain the necessary information.
I have one patient who had multiple RBCs transfused – can I copy and paste the patient details for each O RhD neg RBC to save time?
If it becomes tedious to enter the patient's sex, year of birth, etc., for each O RhD neg RBC issued to the same patient; it is possible to 'copy and paste' your responses. However, stay alert as some responses may vary throughout the episode, e.g. "Was blood group of patient known prior to issue of THIS RBC?" may change.
How do I determine if a patient requires a specific phenotype?
When a patient has history of either a red cell transfusion or pregnancy they have the potential to make one or more antibodies to foreign red cells antigens. The laboratory performs a group and hold (or group and antibody screen) to allow provision of compatible red cells. If a clinically significant antibody is detected, RBCs that are negative for the relevant antigen must be crossmatched; these RBCs are called "phenotype specific" blood. Phenotype specific blood may also be required in the instance of multi-transfused patients to **prevent** alloimmunisation to red cell antigens. If you are not certain speak to your blood bank scientist. See https://transfusion.com.au/blood_products/components/modified_blood/phenotyped for a list of clinically significant antigens. *This question does not refer to RhD phenotype or to CMV or irradiation or other special transfusion requirements.*

To receive this document in another format, phone 03 9694 0102, using the National Relay Service 13 36 77 if required, or email bloodmatters@redcrossblood.org.au, < bloodmatters@redcrossblood.org.au >.

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