


Red Blood Cell Administration Protocol

Who	Division 1 Registered Nursing Staff Student Nurses (under the supervision of a Division 1 Registered Nurse) Medical Staff
Expected Outcomes	That the correct recipient will receive the correct amount of the correct blood at the correct time and at the correct rate of transfusion.
Precautions	<ul style="list-style-type: none">▪ With the exception of: 0.9% saline, 4% Albumin, plasma protein fractions, or ABO-compatible plasma; no medications or solutions can be added to blood components.▪ The transfusion must be stopped and the line flushed with 0.9% saline before giving bolus intravenous medications. The line must then be flushed with 0.9% saline before restarting the transfusion.▪ If it is not possible to insert a second line: morphine, pethidine and/or ketamine diluted in normal saline, for <u>patient controlled analgesia</u> or continuous <u>side arm</u> infusion, can be co-administered with red blood cells via a <u>non-reflux valve</u>.▪ Solutions containing calcium must never be given with blood components as they may cause clotting of the infusion line.▪ Red blood cells are stored at 4°C in a temperature-controlled refrigerator.▪ It is preferable that blood components are administered before 20:00 except in emergency situations.
Why	<p>Red blood cells are transfused for: clinically significant anaemia with symptomatic deficit of oxygen carrying capacity; traumatic blood loss; and surgical blood loss.</p> <p>For details see:</p> <p><i>Clinical Practice Guidelines on the Use of Blood Components (red blood cells, platelets, fresh frozen plasma, cryoprecipitate)</i>, (2002), National Health & Medical Research Council & Australasian Society of Blood Transfusion Inc. Commonwealth of Australia</p> <p> The transfusion of the incorrect blood component is potentially fatal.</p>

Equipment

- The recipient must have an identity wristband
- Signed Intravenous Infusion Chart MRL09
- Blood Administration Form MRL30
- Observation Chart
- Compatibility report
- Gloves
- 0.9% saline to prime and flush intravenous line
- Blood giving set with in-line filter
 - A 'Grasby 3000' intravenous pump can be used for the administration of red blood cells
 - Change the giving set at the completion of the transfusion episode or every eight (8) hours for multiple transfusions.

Step 1 Explain to the recipient what you plan to do and gain verbal consent.

Step 2 Take a set of baseline observations and record them on the observation chart.

Checking the Blood Component



Two people, either Division 1 Registered Nurses or doctors must check the blood component at the recipient's bedside, **using the checklist on the Blood Administration Form MRL30.**

Step 3 Ask the recipient to tell you their given name, surname and date of birth. If the recipient is unconscious or unable to provide these details, ask a relative or a second member of staff to verify the recipient's identity.

Step 4 Check that the full name, UR number and date of birth exactly match on the:

- Compatibility Label
- Compatibility Report
- Identification Wristband
- Intravenous Infusion Chart MRL09

- Step 5** Check that the ABO group, Rh group and unique donation number exactly match on the:
- Compatibility report
 - Compatibility label
 - Blood product label

- Step 6** Check the expiry date on the blood pack and examine the pack. Do not administer the blood component if the pack is damaged or if the contents show any sign of deterioration such as:
- Leakage
 - Unusual colour (dark, cloudy, particles)
 - Signs of haemolysis (pink plasma)

- Step 7** Instruct the recipient to notify a nurse or doctor immediately if they begin to experience shivering, flushing, itching, pain, shortness of breath or begin to feel anxious.

- Step 8** Both staff members must sign the Transfusion Report and the Intravenous Infusion Chart MRL09 together with the date and time of administration. Record the unique donation number of each blood pack on the Blood Administration Form MRL30.

Commencing Transfusion

- Step 9** Wash your hands and put on gloves.

- Step 10** Mix the component thoroughly by inverting the pack and connect the blood pack to the giving set.

Initial Infusion Rate

Infuse blood component slowly over the first 15 minutes. The initial infusion rate must not exceed 5ml/min unless otherwise indicated.

If there are no signs or symptoms of reaction increase to the rate on the Intravenous Infusion Chart MRL09 if required.



If any signs or symptoms of transfusion reaction occur, **STOP THE TRANSFUSION IMMEDIATELY** and report them to the treating medical officer.

See protocol CP-BP02 'Transfusion Reaction Management and Reporting'.

Monitoring the Recipient

Step 11

For each unit of blood transfused, record the recipient's temperature, pulse rate, blood pressure and respiration rate.

- Before starting the transfusion (baseline)
- 15 minutes after the transfusion is started
- Then hourly until the transfusion is complete
- On completion of the transfusion

Monitor the recipient particularly carefully in the first 15 minutes of the transfusion as the blood enters the vein to detect early signs and symptoms of adverse effects.

Time Limits for Transfusion

Administer red blood cells within 30 minutes of removing the pack from the storage temperature of 4°C (2-6°C). Complete within 4 hours of starting the transfusion.

If the transfusion is ordered at a rate that will take longer than 4 hours (eg 6 hourly), cease the unit after 4 hours and commence the next unit.

Red blood cells must be returned to the hospital blood bank or temperature-controlled blood refrigerator within 30 minutes if there is any delay in transfusion. If red blood cells are left at room temperature for more than 30 minutes after issue they must be discarded.

Completing the Transfusion

Step 12

Dispose of used pack in an infectious waste container.

Step 13

Flush the intravenous line with 0.9% saline **between packs and at the end of the transfusion** as ordered. Disconnect the giving set and dispose of in an infectious waste container.



Return packs to the Blood Bank only if a reaction or suspected reaction occurs.

Documentation of the Transfusion

Step 14

Ensure that the following documentation is completed for the transfusion episode.

- Compatibility Report
- Intravenous Infusion Chart MRL09
- Medical/Health Record



If an adverse event (actual or 'near miss') is associated with administration of blood, document details in the medical record and complete an incident report.



Brecher, M. (ed), (2002). AABB Technical Manual, 14th edition. Bethesda: American Association of Blood Banks

Blood Component Information: an extension of blood component labels, 2005, ARCBS

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Guide to the preparation, use and quality assurance of blood components. 9th edition, Council of Europe Publishing

Guidelines for the Administration of Blood Components (1st Ed.). (2004). Australian & New Zealand Society of Blood Transfusion Inc, Royal College of Nursing Australia

Popovsky, M. (Ed), (2001). *Transfusion Reactions*, 2nd edition, Bethesda: AABB Press

Serious Hazards of Transfusion Annual Report 2000-2001.
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