South Australian Perinatal Practice Guidelines

Blood Transfusion

These guidelines are based on the Australian guidelines developed as a joint initiative of the National Health and Medical Research Council (NHMRC) (2001) and the Australasian Society of Blood Transfusion, in cooperation with the Commonwealth Department of Health and Ageing, the Royal Australasian College of Surgeons, the Australian and New Zealand College of Anaesthetists, and other relevant groups

Appropriate use of blood

- Blood transfusion should be based on clinical assessment of the woman and her response to any previous transfusion as well as her haemoglobin level
- If not actively bleeding or urgent, red cells should only be transfused during daytime hours (for patient safety)
- Administer red cells one unit at a time in non-urgent / non-bleeding women. Reassess the woman before transfusing additional units (symptoms, signs and haemoglobin level)
- Also consider factors such as:
  - Signs and symptoms of hypoxia
  - Ongoing blood loss
  - Risk to the woman of anaemia
  - Transfusion risks (see below)

Clinical considerations

- Blood components should only be given when the expected benefits are likely to outweigh the potential hazards
- Women may decline transfusion for religious or other reasons (link to women who decline blood transfusion)
- Clinical and laboratory indications should be documented

Haemoglobin < 70 g / L

- Blood transfusion is likely to be appropriate
- Lower thresholds may be acceptable in women without symptoms and / or where specific treatment is available

Haemoglobin 70 – 100 g / L

- Blood transfusion is likely to be appropriate during surgery associated with major blood loss or if there are signs or symptoms of impaired oxygen transport
- May be given to control anaemia-related symptoms in women on a chronic transfusion regimen
- The decision to transfuse should be supported by the need to relieve clinical symptoms and to prevent significant morbidity and mortality

Haemoglobin > 100 g / L

- Blood transfusion is not likely to be warranted unless there are specific indications

Specific factors

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- If pulmonary function is not normal, it may be necessary to consider earlier transfusion (at a higher pre-existent haemoglobin level)
- Volume of blood loss – quantify volume of blood loss before, during and after birth / surgery to ensure maintenance of normal blood volume
- Oxygen consumption – may be affected by fever, anaesthesia and shivering
- Atherosclerotic disease – critical arterial stenosis to major organs, particularly the heart, may modify indications for the use of red blood cells

Associated risks

- The Australian Red Cross Blood Service (ARCBS) carefully screens volunteer donors for infections that might be transmitted by transfusion
- Blood donations are checked for viruses (e.g. HIV, hepatitis B and C), and the risk of viral infection from blood components is very low
- Donors who have recently had a bacterial infection are deferred from donating blood
- The risks of adverse events associated with blood transfusion include:
  - Incompatible blood transfused
  - Acute and delayed transfusion reactions
  - Transfusion-related acute lung injury
  - Graft-versus-host disease
  - Post transfusion purpura
  - Iatrogenic infection
- The emergence of infectious agents for which there is no test available poses an additional threat to the safety of blood use (e.g. variant Creutzfeldt-Jakob disease)

Obtaining consent

- Informed consent is required (follow link to quick reference guide, obtaining informed consent for blood and blood products).
- Give a clear explanation of the potential risks and benefits of blood transfusion specific to the woman's situation
- Health professionals should use appropriate language, and try to ensure that the information given is understood and retained by the woman
- Document consent in the medical record either on a consent form or in the progress notes (as per hospital consent policy)
- In an emergency, when immediate intervention is necessary, it may not be possible to provide information. In this situation, provide explanation after the transfusion to the woman and her family and document this in the medical record

Administration

- Transfusion should commence within 30 minutes of removal of blood from its proper storage conditions

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- Transfuse through an intravenous line approved for blood administration which incorporates a 170 to 200 micron filter to remove clots and aggregates
- Transfusion of each unit must be completed within four hours of commencing transfusion
- Unless otherwise indicated by the woman's clinical condition, the rate should be no greater than 5 mL / minute for the first 15 minutes of the transfusion (ARCBS 2003)
- Medications or solutions should not be added or infused through the same line as the blood or blood components (except for sodium chloride 0.9 %)
- If necessary, morphine, pethidine or ketamine diluted, ONLY in sodium chloride 0.9 %, may be co-administered as this does not adversely affect red cells. The blood line must incorporate a non-reflux valve

Documentation

- The indication for the blood product and the women's clinical history including previous transfusion history should be documented on the transfusion request form (follow link to example blood request form)
- Documentation of the indication (clinical and laboratory results for the transfusion in the women's casenotes (or use a BloodSafe sticker).
- The order for transfusion should be legible. Note: Red cells are prepared from whole blood and should be written as 'red cells'. Other terms 'ABP and 'PC' should not be used

Follow up after transfusion

- Repeat haemoglobin 24 – 48 hours after transfusion

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References

1. National Health and Medical Research Council (NHMRC). Clinical practice guidelines on the use of blood components (red blood cells, platelets, fresh frozen plasma, cryoprecipitate). Commonwealth of Australia. Canberra: 2001.
2. Australian Red Cross Blood Service (ARCBS). Circular of information an extension of blood component labels. Fitzroy: 2003.

Other useful sites

National Health and Medical Research Council
http://www.nhmrc.gov.au/publications/synopses/cp77syn.htm

Australian Red Cross Blood Service
http://www.transfusion.com.au/home.aspx

Australian and New Zealand Society of blood transfusion
http://www.anzsbt.org.au

Blood transfusion consent guide, administration checklist, prescribing blood information and red cell sticker

(refer to the website to access the PDF version of the Blood transfusion quick reference guide)

Abbreviations

ARCBS	Australian Red Cross Blood Service
e.g.	For example
g	Gram(s)
HIV	Human Immunodeficiency Virus
L	Litre(s)
mL	Millilitre(s)
NHMRC	National Health and Medical Research Council
%	Percent

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PDS reference: OCE use only

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