

BLOOD MATTERS: better, safer transfusion program

Clinical Audit of Red Blood Cell Use in Orthopaedic Surgery

Background

Red cell transfusions are required to increase the oxygen-carrying capacity of the blood by raising the haemoglobin concentration. Previous studies have shown variation in clinical practice in the transfusion of red cells.

The level of haemoglobin (Hb) is often used as the only indicator for red cell transfusion because of its easy accessibility. There is no clear evidence indicating the optimal Hb 'trigger.'

Hébert's (1995) study of patients in intensive care showed better outcomes when a restrictive transfusion policy was used (i.e. maintaining the Hb between 70-90g/L). The study suggested that this was as safe, or even safer than a liberal transfusion strategy (to an Hb of 100-120g/L).

Consideration should be given to the causes of anaemia and whether it can be managed by alternatives other than red cell transfusion. According to the NH&MRC/ANZSBT guidelines, if an Hb is less than 70g/L transfusion should rarely be withheld. Similarly, at the other end of the spectrum, with a Hb greater than 100g/L transfusion should rarely be given. (NH&MRC, 2001)

The Blood Matters: better safer transfusion program wishes to work with hospitals to ensure that:

- a) blood components and products are used appropriately and effectively, and
- b) alternative blood management strategies are used to limit the need for transfusion where clinically appropriate and available.

The Blood Matters Advisory Committee has identified the area of blood management in orthopaedic patients undergoing major joint replacement surgery as an area for targeted clinical audit to determine current practice across the State.

Audit Aims

To improve the quality of care provided to patients by ensuring the appropriate use of blood management and red cell transfusion in orthopaedic patients undergoing hip or knee joint replacement. Medical record documentation relating to transfusion should also be relevant and accurate.

Objectives

- i. To determine if blood management and red cell transfusion in orthopaedic patients undergoing hip or knee joint replacement is aligned to clinical practice standards developed from NH&MRC/ANZSBT guidelines.
- ii. To determine if effective alternative treatments are being used.

Standards

Clinical practice standards have been developed from the NH&MRC guidelines for the clinical use of red cell transfusions (2001)

Use of Red Cell Transfusion:

Criterion	Exceptions	Standard
Treatment with red cells should NOT be given when effective alternatives exist		100%
Transfuse Patients with Hb <70 g/L	<ul style="list-style-type: none">• Pts with Sickle Cell anaemia	100%
Patients with Hb >100g/L		0%
Patients with Hb between 70-90g/L	<ul style="list-style-type: none">• Known cardiovascular disease.• Chronic anaemia with associated symptoms.	0%
Blood loss > 1500 mL		100%

Data Set for Transfusion

Transfusion committees (or their equivalent) are asked to take this opportunity to ensure that the required dataset for each transfusion is documented in the clinical notes. According to NH&MRC/ANZSBT (2001) these are:

Indication for transfusion,

Amount of blood transfused,

Assessment of the effectiveness of the transfusion,

Methodology

The methodology is for an audit at each selected site of up to 30 orthopaedic patients undergoing hip or knee joint replacement. The Transfusion Committee should designate a member of staff to record the information requested on the proforma provided. The designated data collector in participating hospitals will review the patient case notes and using the audit proforma (Form 2: Clinical Audit of Red Blood Cell Use in Orthopaedic Surgery), collect the relevant data. It is suggested that a clinical sub-group identified by the Hospital Transfusion Committee (or equivalent) review their local data on red blood cell transfusion.

All data collection forms comply with the privacy acts.

Time Frame:

Either 30 consecutive orthopaedic patients undergoing hip or knee joint replacement (or in low frequency users, all patients undergoing these operations) between 1 January 2009 and 31 December 2009. For hospitals that perform THR or TKR very regularly, every third procedure may be audited, up to a maximum of 30 patients.

A designated member of Hospital staff will undertake data collection. Further details for data collection are provided on the attached Audit Information Sheet.

The Blood Matters secretariat will co-ordinate the audit, taking responsibility for the distribution of audit collection tools and data analysis, and will collaborate with the Blood Matters Advisory Committee in formulating the audit report. The Blood Matters Advisory Committee will disseminate results to the participating hospitals.

Audit reports are to be **returned (*online*) by 7 January 2010** to:

BLOOD MATTERS: better, safer transfusion program
Statewide Quality Branch, Department of Human Services
GPO Box 4057
MELBOURNE 3001

If further information is required please contact

- Karen Botting Blood Matters Project Manager on Tel: 9096 9037 or email: karen.botting@dhs.vic.gov.au
- or Lisa Stevenson, Transfusion Nurse Blood Matters on Tel: 9096 0476 or email: lisa.stevenson@dhs.vic.gov.au