



**BLOOD TRANSFUSION  
PROCEDURES MANUAL**



**Tasmania**  
*Explore the possibilities*

**Launceston General Hospital**

**North West Regional  
Hospital**



**Mersey Community Hospital**

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**NORTH and NORTH WEST REGION**  
**TRANSFUSION OF BLOOD AND BLOOD COMPONENTS**

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**Policy 22/12/2008**

**Reference No:**

**Title: NORTH AND NORTH WEST PROCEDURAL GUIDELINE FOR TRANSFUSION OF BLOOD AND BLOOD COMPONENTS**

**Replaces:** All existing Transfusion Guidelines & Policies

**Description:** This Policy provides a framework and strategic guidelines for all staff to utilise for safe administration of Blood and Blood Components.

**Target Audience:**

- Medical staff
- Registered Nurses, Midwives competent in the procedure
- Enrolled Nurses
- Students of Nursing/Medicine under direct supervision

**Key Words:** Blood Transfusion

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Policy supported: EQUIP 4, Clinical 1.1.1., 1.5.5.5

**Category of Staff**

- Medical staff
- Registered Nurses, Midwives competent in the procedure
- Enrolled Nurses
- Students of Nursing/Medicine under direct supervision

**The enclosed procedural guidelines now replace all previous guidelines.**

**RATIONALE**

**This policy has been developed in line with the NHMRC (National Health & Medical Research Council) and ANZSBT (Australian & New Zealand Society of Blood Transfusion) guidelines to ensure best practice is maintained in the delivery of safe patient care whilst administering blood or blood components.**

**1. BACKGROUND**

1.1 Blood transfusion is an integral part of the clinical care of many patients. Safe use of this procedure at the Hospital necessitates the development in an integrated manner and ongoing review of protocols and policies regarding the collection, labelling,

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storage, preservation, transport, issue and administration of blood and blood products and regarding reactions that may result from transfusion.

- 1.2 To achieve the necessary integrated statewide policy and protocol development, a Blood Transfusion Committee has been established which meets approximately every four (4) months. A wide range of medical, nursing and scientific staff participates including Transfusion Specialist representatives from the Red Cross Blood Transfusion Service, private hospitals and private laboratories.

## 2. TRANSFUSION PROCEDURAL GUIDELINE DESCRIPTION

**This procedural guideline comprises of information regarding the collection, transportation and administration of blood and blood components, according to national guidelines. All Tasmanians Public Hospitals are affiliated with Blood Matters (Better Safer Transfusion) Collaborative, in Victoria. Ongoing audits and bench marking of data is conducted through this group.**

**The following points should be considered when administering blood or blood components.**

1. Blood and blood products are gifts from voluntary donors.
2. It is the responsibility of all staff handling these products to ensure that they are used appropriately.
3. Blood and blood products are potentially hazardous, therefore should be administered only when the likely benefit out-weighs the possible ill-effects.
4. Risks (both long term and short term) and benefits **shall** be discussed with the patient.
5. Indications for transfusion and the patient's consent **shall** be clearly documented utilising the approved "Consent to Transfuse" form or inpatient notes.
6. Blood and blood products **shall** be administered only in accordance with hospital policy, as documented in the Blood Product Guide ratified by the Blood Transfusion Committee.
7. Untoward reactions with a potential to endanger the patient must be reported to Pathology immediately.
8. Pathology and the Red Cross Blood Transfusion Service have a duty of care to ensure that blood products are used appropriately.
9. Responsibility for the appropriateness of requests, special requirements and patient management lies with the Medical Officer.

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10. Care of the patient before, during and after the transfusion is the responsibility of a Registered Nurse.

### 3. SPECIFIC RESPONSIBILITIES

- 3.1 Medical staff are responsible for the ordering of blood products and management of patient's under their care. They will consult with Clinical Haematologists and Senior Scientists from Haematology Department with regards to appropriateness and availability of requested blood products.
- 3.2 The Australian Red Cross Blood Transfusion Service is responsible for ensuring the supply of blood and blood products to maintain stocks at levels agreed between Pathology and the Red Cross, as well as additional requirements (fresh red cells, phenotype blood etc) for patients with special needs.
- 3.3 The Scientist in charge of Haematology Department is responsible for ensuring that:
- adequate stocks of blood products are available for normal requirements;
  - safe procedures are used to crossmatch and issue blood and blood products;
  - blood and blood products are returned to stock at an appropriate time to minimise wastage;
  - blood and blood products are maintained at the appropriate storage temperatures;
  - any reported reactions to transfused products are investigated immediately.
- 3.4 The Blood Transfusion Nurse is responsible for ensuring that;
- Compliance is met in regard to storage, administration and transportation of all blood and blood products in accordance with Australian Standards. This includes education opportunities to all employed DHHS staff.
- 3.5 Registered Nurses are responsible for the care of the patient before, during and after transfusion and the appropriate handling of blood or blood products after removal from storage in Pathology.
- 3.6 The Senior Scientist in charge of Haematology Department is responsible for tracing blood products, with the exception of albumin, to enable possible future matching of donor and recipient. Albumin (Albumin 4%, 5% and Albumin 20%) is not issued to specific patients so can only be traced through the patient's medical record. It is the

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responsibility of administering medical or nursing staff to record the product lot number, of albumin in the patient's Blood Product I.V. Order Form.

- 3.7 All staff involved in Transfusion practices is to ensure they obtain adequate relevant education and at all times practice in accordance to hospital policy.
- 3.8 Non-compliance incidents will be addressed at the individual hospital transfusion committee meetings.

**APPROVAL**

**DIRECTOR  
HOSPITALS AND AMBULANCE SERVICE**

## **PROCEDURE**

### **ROUTINE / NON URGENT BLOOD TRANSFUSION**

#### **Background:**

This policy has been developed in line with National Health and Medical Research Council (NHMRC) and Australia and New Zealand Society of Blood Transfusion (ANZSBT) to ensure best practise is maintained in the delivery of safe patient care whilst a patient is undergoing a routine non/urgent blood transfusion.

### **ROUTINE/NON URGENT BLOOD TRANSFUSION**

To improve safety and efficiency in blood transfusion practice, this policy outlines requirements for non-urgent blood transfusions.

Non-urgent blood transfusions must commence and be completed during normal working hours (08:00-17:00) within the hospital.

In order to ensure compliance with the following arrangements apply:

- **All routine transfusions must be completed by 17:00 hours.**
- **In a continuing transfusion episode additional units will be transfused the following day after clinical assessment by a medical officer**

#### **LGH**

- **The LGH pathology department will not process routine, non urgent blood transfusion requests after 13:00 hours.**
- **Routine requests received for transfusion after this time will be referred to the haematologist on call.**

**Please refer to the LGH Out of Hours Blood Transfusion Policy.**

**URGENT BLOOD TRANSFUSION**

Urgent and emergency blood transfusion services are available at all times.

Blood transfusion services are provided to the North and North West Regional Hospitals Tasmania Pathology Service laboratories. The service is available 24 hours and is accessible either by direct contact with the laboratory during the hours of 08:00 to 22:00 or through the Switchboard operator outside these hours.

**ENQUIRIES TO DEPARTMENT OF HAEMATOLOGY OR TO ON CALL CLINICAL HAEMATOLOGIST**

## **CROSSMATCHING OF BLOOD**

### **Purpose**

In alignment with the National Health and Research Council (NHMRC)/ Australasian Society of Blood Transfusion INC (ASBT), Clinical Practice Guidelines for the use of blood components, 2002, ensures appropriate selection of donor blood for Transfusion and facilitate the safe administration of blood and blood products to patients. This purpose can be achieved by being aware of and promoting the following points;

- crossmatched blood is the safest option even in most emergency situations for patients requiring red cell transfusion.
- blood availability after Group and Antibody screen, varies between pathology departments. Please check local Pathology guidelines.
- on all Transfusion Medicine Requests for crossmatch it is a requirement to know whether the patient has been transfused or has been pregnant in the preceding 3 months.
- prior to venepuncture, the patient must be asked to state their name, address and date of birth for identification purposes and identity wristband must be checked.
- collection of blood for crossmatch is an aseptic procedure (Refer to venepuncture procedure).
- consent for administration blood and blood components must be documented in patients notes/dedicated consent form.
- **The safest and best time for a patient to receive a non-urgent blood transfusion is during the day. Blood Transfusions will only be administered out of hours in a medical/surgical emergency. All indications should be clearly documented. Refer to Out Of Hours Policy.**

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#### **CROSS MATCHING & GROUP & HOLD**

Patients undergoing **minor** surgery require no group and antibody screen.

Patients undergoing **major** surgery should **have a group and antibody screening performed**. Preferably this should be carried out at pre-assessment or in any event well before surgery.

Samples are held for a period of 1 month and are available for crossmatch use unless the patient has been pregnant or transfused in the last 3 months – in this case the request is valid for 72 hours from collection.

**“In a continuing transfusion episode the cross matching laboratory requires a fresh blood specimen 72 hours after drawing of the previous sample. The 72-hour rule will also apply whenever a patient has been transfused or is/has been pregnant within the last 3 months. This internationally-accepted safeguard is used to prevent a transfusion reaction in patients who form antibodies to foreign red cell antigens beyond 72 hours after transfusion”.**

Patients undergoing major surgery may need to be cross-matched if the anticipated blood loss exceeds the acceptable blood loss. This should be discussed with a consultant (surgeon or anaesthetist) and will be dictated by the procedure, the patient’s status and the current haemoglobin level.

Patients with atypical antibodies undergoing major surgery must be cross-matched early after discussion with the transfusion department.

## **SAMPLE COLLECTION**

### **Scope**

This policy and procedure applies to Registered Nurses, Medical Officers and Pathology staff collecting specimen.

- Note:** A special tube is required for this request
- **EDTA Crossmatch tube – large 6 ml tube**

### **Sample Labeling Requirements**

- I. The patient's identity shall be positively confirmed at the time of sample collection.

Patient identity **shall** be confirmed by asking the patient (if conscious and rational) to state their surname, given name(s), and date of birth **and** by checking the identity wristband securely fastened to the patient.

**All samples are to be hand labeled no 'sticky' labels will be accepted.**

- II. Following collection and **before leaving the patient**, the tube(s) containing the sample(s) **shall** be legibly labelled with:
  - i. patient's surname, given name(s) in full, and hospital record number and date of birth.
  - ii. date and time of collection
  - iii. the signature or initials of the collector **shall** appear on the sample tube, indicating that identity has been confirmed

**Samples that do not conform to these labelling requirements SHALL be discarded and the patient must be re-bled.**

- III. The request form and sample tube **shall** carry identical patient identification information. The request form and sample label **shall** be checked on receipt in the laboratory and, in case of discrepancy or doubt, a clear, documented protocol approved by the officer-in-charge of the laboratory **shall** be applied. Unlabelled samples **shall** be discarded. Zero tolerance applies.

### **AUTOLOGOUS BLOOD**

Autologous blood is now only used in exceptional circumstances.

**Refer to Clinical Haematologist.**

### **Outcome**

Correctly identified patient for Cross matching of blood products for transfusion.

### **References**

- Australian Red Cross Blood Service - Transfusion Medicine Manual 2003. Blood Transfusion and Clinical Use of Blood in Australia.
- Australasian Society of Blood Transfusion, Guidelines for Pre transfusion Testing, 5<sup>th</sup> Edition 2007
- Australian & New Zealand Society of Blood Transfusion, 1<sup>st</sup> edition, October 2004, Guidelines for the Administration of Blood Components

## **ADVERSE REACTIONS TO TRANSFUSION**

### Evaluation of Suspected Transfusion Reaction

The time taken between suspicion of a transfusion reaction and the investigation and initiation of appropriate therapy should be as short as possible. Any adverse symptom or physical sign occurring during transfusion of blood should be considered as potentially serious and the following action should be taken:

1. **STOP** the transfusion.
2. Urgent clinical assessment of patient. Call for medical assistance if needed.
3. Report the suspected transfusion reaction to treating medical officer and Transfusion department personnel immediately.
4. At the patient's bedside, check all labels, forms, and patient identification to determine if the patient received the intended component.
5. Keep the intravenous line open with Normal Saline.
6. Refer to Blood Product Adverse Reaction Form.
7. Send **required blood /urine samples and blood product with giving set attached**, as per Blood Product Adverse Reaction Form to the Transfusion Department in Pathology.

**Symptoms from ABO incompatibility, which may be fatal usually, occur within the first 15 mins or 50mls of blood transfused.**

### **Reference**

Burch K.J., Phelps S.J., Constance T.D. 1991. "Effects of an infusion device on the integrity of whole blood and packed red cells" American Journal of Hospital Pharmacy. Vol. 48, January, pp92-97.

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#### Adverse Reactions Procedure

Symptoms	Possible Type of Reaction	Action
Chills, unexpected fever (>38°C), nausea, vomiting, headaches.	Non-haemolytic febrile reaction. If symptoms are severe consider Septic-bacterial contamination ( <b>Medical Emergency</b> )	<b>STOP TRANSFUSION, or SLOW if symptoms mild.</b> Maintain IV access, monitor vital signs, seek medical advice, and return blood bag back to Transfusion Department in Pathology for further investigation and culture.
Localized hives, rash, flushing, wheeze, hypotension	Allergic	<b>STOP TRANSFUSION.</b> Maintain IV access, monitor vital signs and seek medical advice
Chills, fever, back pain, ooze from IV site, pain at insertion site, hypotension, haemoglobinuria, and feeling of impending doom, shock.	Anaphylactic ABO incompatibility, haemolytic	<b>STOP TRANSFUSION. Maintain IV access, monitor vital signs and seek medical advice URGENTLY. May require resuscitation. /CODE BLUE</b>
Dyspnoea, productive cough, pink frothy sputum, hypertension, headache.	APO – Fluid overload Transfusion related Acute Lung Injury (TRALI)	<b>STOP TRANSFUSION</b> Sit patient upright, administer oxygen therapy, monitor vital signs, maintain IV access and seek medical advice. Check for Diuretic order.

Reference: ARCBS Transfusion Medicine Manual 2003

**Other complications** which may occur are:

- Transfusion Transmitted Infectious disease. (TTI)
- Transfusion Related Acute Lung Injury (TRALI)
- Iron overload
- Transfusion Associated Graft-Versus-Host Disease. (TA-GVHD)
- Metabolic complications – when very large amounts of blood are transfused including:
  - Hypothermia
  - Citrate toxicity - plasma
  - Acidosis
  - Hypo/hyperkalemia

**Note** Exchange transfusion in a neonate does not require an increased larger amount of fluid

**Seek medical and Transfusion Department advice for management and complete a Blood Product Adverse Event Form.**

## **TRANSFER OF BLOOD PRODUCTS ACCOMPANYING PATIENTS TO ANOTHER HOSPITAL**

### **Purpose**

To safely transfer a patient with blood products and eliminate wastage of blood products incorrectly stored.

### **Procedure**

All patients receiving blood products that are to be transferred out to another Hospital must be transferred with special preparation. This includes those that have products prepared for them in Pathology, but are not yet commenced.

Pathology must be informed of the transfer and given adequate notice prior to the event.

Pathology will package the blood products for transportation in a validated ARCBS Shipper, to maintain optimal conditions during transit. This will ensure that the blood products are still suitable to transfuse when required. The blood products will be labelled.

The blood products can then be collected from Pathology and transferred with the patient to the destination hospital.

Pathology has a protocol for the transportation of blood products and will contact the receiving hospital. The clinician responsible for the care of the patient must document in the progress notes/ Transfer Form that blood products are accompanying the patient.

### **Outcome**

Maintenance of optimal storage conditions for blood products whilst in transit, enabling safe administration to the patient as required. This facilitates the best patient outcomes and prevents wastage of blood products.

### **Activation of the Massive Transfusion Protocol**

The MTP can be activated by either the:

- **Clinical Team who are directly involved in the patient care e.g. emergency physician, retrieval team, surgical team or ICU staff:**
- **Emergency Department:** Trauma Team Leader (TTL) or Trauma Case Coordinator (TCC) or the
- **ICU:** RMO, or the
- **Operating Theatre Anaesthetist:** who notifies Blood Bank directly, once the patient is identified to be at risk of Massive Transfusion
- **Clinical haematologist** on call.

**Once activated the MTP will remain in force for 24 hours after the last transfusion, unless the treating Clinician or Haematologist requests further prolongation.**

**LGH/NWRH-MASSIVE TRANSFUSION PROTOCOL**

After the initial issue and use of 4 packed cells and the MTP is activated as described above. INITIATE THE FOLLOWING; -----

- **Massive Transfusion Protocol; Phase I protocol:**

**4 units Packed Red Cells + 2 units Fresh Frozen Plasma (300 ml each) + 1 Adult dose of platelets (depending upon availability)**

When notifying the ward that blood products are ready ask if they are continuing with the Massive Transfusion Protocol, if so continue by:

**Alternating with**

- **Massive Transfusion Protocol; Phase II protocol:**

**4 units Packed Red Cells + 2 units Fresh Frozen Plasma (300 ml each) + 10 units Cryoprecipitate**

When notifying the ward that blood products are ready ask if they are continuing with the Massive Transfusion Protocol, if so continue alternating the above products.

After 10 units of packed cells have been issued ABO and Rh compatible blood may be issued at the discretion of the on-call Clinical Haematologist.

**Additional blood products requirements:**

**The Medical Officer (a member of the Clinical team who are directly involved in the patients care e.g. emergency physician, retrieval team, surgical team or ICU staff)**

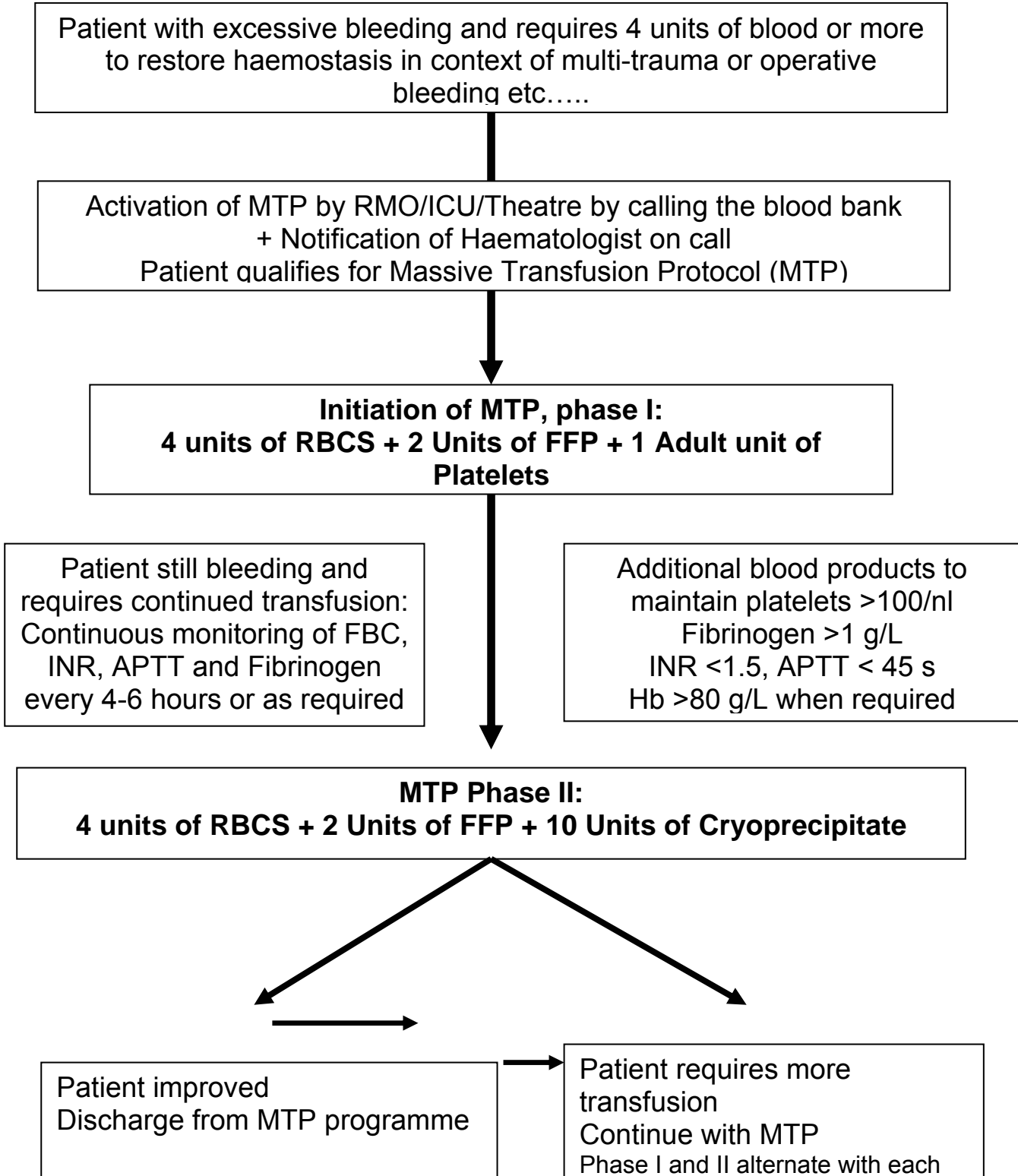
- 1- Platelets if platelets count < 100 000,
- 2- Cryoprecipitate if Fibrinogen < 1 g/L,
- 3- Fresh Frozen Plasma if PT & APPT is prolonged and provided the fibrinogen is >1 g/L
- 4- Packed Red Cells if Hb < 80 g/L.

**N.B.** The requesting doctor should perform regular FBC, coagulation profile including fibrinogen every 4-12 hours according to the severity of the condition and degree of bleeding.

***Use of Recombinant Factor VIIa (Novoseven)***

- Use of rFVIIa may be considered in patients where bleeding is uncontrolled by conventional therapy.
- There is sufficient evidence in literature and a series of case reports that support employing rFVIIa in case of uncontrolled microvascular bleeding in trauma/post operative settings.
- A haemostatic effect has been demonstrated following the administration of rFVIIa (Novoseven) in a limited number of patients after trauma and uncontrolled bleeding.
- However, use of this therapy must be discussed with the Duty Haematologist.
- Optimal dose is not known (80-120 mcg/kg) and controlled studies are required to prove any beneficial effect and safety profile of rFVIIa in these patients.
- Nevertheless a dose of 90mcg/kg is usually used as standard and can be increased according situation.

**MTP Flow Chart**



**Pay attention to Hypothermia and Acidosis**

## FRESH BLOOD PRODUCT

### Red Blood Cells for Transfusion

#### Collection

##### **Purpose**

To correctly identify patient and donor product for safe administration of blood and blood product to patients by;

- correctly collecting blood and blood products issued from pathology/pharmacy and document correctly.
- correctly identifying patient and product

##### **Scope**

These guidelines apply to Registered Nurses and Medical officers.  
(Enrolled Nurses, Ward Aides and Attendants are able to collect product only as per institution policy).

#### Procedure

1. The staff member collecting the product from pathology must have documentation containing the patients' identification. (i.e. documentation that contains 3 points of patient ID).
2. Only take one unit at a time (unless transferring product to alternative approved blood satellite blood fridge or "blood in motion bags").
3. Ensure transfusion is **commenced** within **30 minutes of removal of blood from blood fridge**.
4. Collect the transfusion issue form on collection of the first unit.
5. Ensure all necessary details: date, time blood removed from fridge and ward, signature/name of person collecting blood are recorded on the Blood Register Sign Out form **which remains in Pathology**.
6. Check the following details between the blood bag, the label attached to the blood bag and transfusion report form:
  - Patient's full name, date of birth and UR number
  - Patient's blood group
  - Donor's blood group
  - Donor's donation number
  - Expiry date of Blood
7. **Blood is to be transported in the designated transport esky from pathology to the patient**

### **Description and Indication**

In deciding whether to transfuse red blood cells, the patient's haemoglobin level, although important, should not be the sole deciding factor. Patient factors, signs and symptoms of hypoxia, ongoing blood loss, the risk to the patient of anaemia and the risk of transfusion should be considered.

(Refer to NHMRC/ASBT Clinical Practice Guidelines, Appropriate Use of Red Blood Cells)

**Red Cells Resuspended (RCR)** consists of partly packed red blood cells after removal of most of the plasma. It has a hematocrit of 55-70% and a volume >240mLs (volume is on bag label).

Red cells are indicated for patients for treatment of significant anaemia with symptomatic deficit of oxygen carrying capacity and for replacement of traumatic or surgical blood loss.

The **safest and best time for a patient** to receive a **non-urgent** blood transfusion is during the day. Blood Transfusion will only be administered out of hours in a medical/surgical emergency. All indications should be clearly documented. (Refer to Out of Hours Policy or Intranet site.)

### **Purpose**

To safely administer Red Blood Cells to patients by;

- correctly collecting Red Blood Cells issued from Transfusion Department *in Pathology* and document correctly.
- correctly identifying patients and products prior to administration
- safely administering Red Blood Cells, including product description and indications.
- safely managing transfusion reactions.

### **Scope**

These guidelines apply to Registered Nurses and Medical officers.

(Enrolled Nurses can participate with identity and blood bag detail checks with 1 RN)

### **Equipment Requirements**

- Blood Product IV Order chart with patient details
- Blood Product
- Transfusion Issue Form (from Pathology)
- Patient with patent IV access
- Correct blood administration set, with 170 - 200 micron filter
- Infusion pump as required
- Leucodepletion filter if indicated
- **Blood warmer as required**

### **Administration of Red cells**

**No transfusion is to be administered without documented consent, including indication for transfusion.**

1. Undertake **baseline** observations. Temperature, pulse, blood pressure and respirations. Document on Blood Transfusion Observation Chart.
2. Check I.V site for signs of infection and patency.
3. Collect all equipment required for transfusion.
4. Collect Blood Product
5. Re-check all identity and blood bag details prior to transfusion of blood. Two (2) people (2 RN's or 1 RN and 1 Medical Officer, 1 RN and 1 EN), at the bedside, must do this prior connecting the bag to the intravenous line.

Visually inspect the blood for discoloration and consistency. If concerned return to the Transfusion Department in Pathology **STAT**.

Identify Patient by checking against blood bag label, transfusion report issue form, Blood Product IV Order chart and the patient's identity band and verbal check. Ask patient to identify themselves by stating full name and date of birth.

***All patients who are admitted must have Identity Bands attached. This includes all patients who are admitted as Day Cases in Outpatient Departments.***

6. Prime Blood Transfusion Administration set with Red Blood Cells or Normal saline utilising a **Blood Transfusion giving set with a (170-200 micron) filter**, if using a Leucodepletion filter refer to enclosed information in packaging for priming instructions.
7. Commence infusion at a rate **no greater than 5mls/minute for the first 15 minutes** of the transfusion for an adult unless an emergency. Neonatal and Paediatric transfusion rate as per order. A unit of blood should be used within four (4) hours
8. ***Consult with the Laboratory staff when returning blood if it cannot be commenced within 30 minutes. Sign blood back into issue book.***
9. Closely observe the patient for the first 15 minutes of the transfusion, as this is when transfusion reactions are likely to occur.
10. Monitor and record observations at 10 minutes from commencement (blood pressure, pulse, and respirations), then 15 minutes from commencement (temperature, blood pressure, pulse, respirations). ***The patient must be OBSERVED closely for the first 15 minutes of a blood product transfusion***, then 60 minutely thereafter (temperature, Blood Pressure, pulse & respirations).
11. Record on the Blood Transfusion Observation Chart. On completion of transfusion repeat baseline observations.

**Note** Observations **may be taken more frequently** according to patient's condition and/or as requested by the medical officer

12. At the completion of the transfusion, flush line with normal saline. Do not flush Leucodepletion filters. (Refer to instructions in packaging).

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13. Disconnect administration set from patient.
14. Store used blood bags (double bagged with labels facing out) for 24 hours then discard in appropriate hazard waste bin.

#### **CONCURRENT FLUIDS**

The only fluids that can be given concurrently through the same IV device as a red cell transfusion are:

- normal saline.
- 4% Albumin.
- plasma protein fractions or
- ABO - compatible plasma.

#### **INCOMPATIBLE FLUIDS**

Electrolyte and colloid solutions containing calcium (eg; Haemaccel<sup>TM</sup>/Gelofusine<sup>TM</sup>) shall never be given with blood cell components collected in an anticoagulant containing citrate as they may cause clotting of the infusion line.

5% dextrose in water or hypotonic sodium solutions may cause red cells to haemolyse. Other solutions shall not be given with red cells unless there is sufficient data to ensure compatibility.

#### **MEDICATIONS**

Medication shall not be added to the blood bag or the transfusion line. If drugs need to be administered via the same IV line as a transfusion - the transfusion shall be stopped and the line flushed with normal saline. Administer the drug, then flush the line with normal saline before restarting the transfusion. This manoeuvre should not result in the transfusion of red cells exceeding 4 hours.

Co-administration of morphine, pethidine and/or ketamine diluted in normal saline [as for patient controlled analgesia or continuous side arm infusion] via a non reflux valve has been shown not to adversely affect red cells

#### **Points to remember**

1. Blood is not to be stored in ward fridges
2. Blood components may be warmed to no more than 41°C during or just prior to transfusion, if clinically indicated. This should only be performed by the use of a purposely-designed blood warmer. (Water bath warmers are not to be utilised)
3. All significant adverse reactions to transfusion, including possible bacterial contamination of a blood component or suspected disease transmission, must be reported urgently to the Transfusion Department in Pathology for investigation and recording. Refer to Blood Product Adverse Reaction Form.
4. Empty or partly emptied bags are to be double bagged with labels facing out and stored

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in ward fridge for 24 hours, then discard.

If a transfusion reaction is suspected and is being investigated, leave giving sets attached. Reseal bags and return in biohazard bag to the Transfusion department immediately. Refer to Blood Product Adverse Event Form.

## Platelets for Transfusion

### Collection

#### **Purpose**

To safely collect Platelets to patients by;

- correctly collecting Platelets issued from Transfusion Department *in Pathology* and document correctly.
- correctly identifying patients and product

#### **Scope**

These guidelines apply to Registered Nurses and Medical officers.  
(Enrolled Nurses, Ward Aides and Attendants are able to collect product only as per institution policy).

### Procedure

1. The staff member collecting the product from pathology must have documentation containing the patients' identification. (i.e. documentation that contains 3 points of patient ID).
2. Only take one unit at a time from platelet agitator.
3. Ensure transfusion is **commenced** within **30 minutes of removal of platelets from platelet agitator**.
4. Collect the transfusion Issue form on collection of the first unit.
5. Ensure all necessary details: date, time blood removed from fridge and ward, signature/name of person collecting blood are recorded on the Blood Register Sign Out form ***which remains in Pathology***.
6. Check the following details between the product bag, the label attached to the product bag and transfusion report form:
  - a. Patient's full name, date of birth and UR number
  - b. Patient's blood group
  - c. Donor's blood group
  - d. Donor's donation number
  - e. Expiry Date of Platelets
7. **Blood is to be transported in the designated transport esky from Pathology to the patient**

Platelets are stored at **22 – 24°C for up to 5 days**, and must be continuously shaken and agitated on a purpose built device.

**All platelets issued by the Australian Red Cross Blood Service are irradiated and leucocytedepleted in Tasmania.**

- label on each bag will confirm if irradiated and leucocytedepleted  
(Refer to Irradiation policy and Leucocytedepletion policy)

### **Never Refrigerate Platelets**

#### **Product Description**

Platelet standards specify a minimum number of platelets per "dose" ( $>2.4 \times 10^{11}$ ). The processes used by the ARCBS to achieve this standard will vary from time to time, current methods are detailed below.

- **Pooled platelet packs.** These are equivalent to 4 or 5 units of random donor platelets and are provided pre-pooled. Volume is recorded on the bag.
- **Apheresis.** Platelets are currently provided in 100% plasma prepared anticoagulated blood from a single donor, and separated into components by an apheresis machine. (Platelets and a portion of plasma are moved to pool platelets and retained in a nutrient additive solution and the remaining elements are returned to the donor). **Volume >100ml.** One unit of apheresis platelets is equal to 4 units of random platelets.
- All Platelets from the **Tasmanian Red Cross Blood Service are Leucocytedepleted during manufacture.**
- Cases where anti-D is given for platelet transfusion  
Rh (D) Negative patients should receive 250 I.U. prophylactic anti-D Immunoglobulin when receiving Rh (D) Positive platelets if they fall into the following categories:
  - i) Women of childbearing potential. (<50)
  - ii) Men <25 years of age.

Rh-D Immunoglobulin (Anti-D) should be given subcutaneous to patients for platelet transfusion in Rh-D negative women if receiving Rh-D positive platelets, with low platelet counts to decrease the risk of haematoma. Anti-D need only be given on a weekly basis at most and is necessary if Anti-D from previous treatments is measurable in the serum.

#### **Laboratory Investigations**

- FBE prior to ordering and Blood Group (crossmatch sample).
- Tests of platelet increment post-transfusion at discretion of treating specialist.
- HLA typing if HLA matched single donor platelets are required.
- HLA antibody screen is required.

### **Indications**

For the prevention and treatment of hemorrhage in patients with thrombocytopenia or platelet function defects. The platelet count is the primary trigger for the use of platelets, with clinical risk factors for bleeding and the extent of bleeding also influencing the decision to transfuse.

Refer to NHMRC/ASBT guidelines, Appropriate use of platelets.

### **Purpose**

To safely administer Platelets to patients by;

- correctly collecting Platelets issued from Transfusion Department *in Pathology* and document correctly.
- correctly identifying patients and products prior to administration
- safely administering Platelets, including product description and indications.
- safely managing transfusion reactions.

### **Scope**

These guidelines apply to Registered Nurses and Medical officers.  
(Enrolled Nurses can participate with identity and blood bag detail checks with 1 RN)

### **Equipment**

- Blood Product IV Order chart with patient details
- Blood Product
- Transfusion Issue Form (from Pathology)
- Patient with patent IV access
- Correct blood transfusion administration set, with 170 - 200 micron filter
- Infusion pump as required
- Leucodepletion filter if indicated
- Blood warmer as required

### **Administration of Platelets**

**No transfusion is to be administered without documented consent, including indication for transfusion.**

### **Procedure**

1. Undertake baseline observations temperature, pulse, blood pressure and respirations. Document on blood observation chart.
2. Check I.V site for infection and patency.
  1. Collect equipment required for transfusion
  2. Collect Platelets from Pathology on Platelet Agitator.
5. Re-check all identity and blood bag details prior to transfusion of blood. This must be done by two (2) people, (2 Registered Nurses or 1 Registered Nurse and Medical Officer, 1 RN and 1 EN), at the bedside before connecting the bag to the intravenous line.

Identify Patient by checking against blood bag label, transfusion issue form, Blood Product IV Order chart and the patient's identity.

If able ask patient to identify themselves, name and date of birth.

If the patient is unconscious or a paediatric patient a secondary RN/MO or relative must confirm the 3 points of identity of recipient.

6. Visually inspect platelets, if there are any concerns, it should be returned to the pathology department. **Unusual colour or turbidity can suggest bacterial contamination** (Note: Platelets normally produce a 'swirling appearance' when shaken.)
7. Prime line with Platelets or Normal saline utilising a **Blood Transfusion administration set with a (170-200 micron) filter**. Platelets may be administered through a syringe-type infusion pump
8. **Transfuse over 15- 30 minutes for a pooled bag in an adult or as the patient's fluid status allows**. Neonatal and paediatric transfusion rate as per order
9. ***Notify and return unused Platelets to the Haematology Department if it cannot be commenced within 30 minutes.***
10. Closely observe the patient for the first 15 minutes of the transfusion, as this is when transfusion reactions are likely to occur.

Prior to commencement of transfusions the patient should have baseline observations **temperature, pulse, respiratory rate, and blood pressure** and then a repeat set of observations at completion.

**Note** Observations **may be taken more frequently** according to patient's condition and/or as requested by the medical officer

11. At the completion of the transfusion, flush line with normal saline.
12. Disconnect administration set from patient.

13. **Store used blood bags with administration set attached (double bagged with labels facing out) for 24 hours as per pathology guidelines.**

### **CONCURRENT FLUIDS**

The only fluids that can be given concurrently through the same IV device as a red cell transfusion are:

- normal saline.
- 4% Albumin.
- plasma protein fractions or
- ABO - compatible plasma.

### **INCOMPATIBLE FLUIDS**

Electrolyte and colloid solutions containing calcium (eg; Haemacel™/Gelofusine™) shall never be given with blood cell components collected in an anticoagulant containing citrate as they may cause clotting of the infusion line.

5% dextrose in water or hypotonic sodium solutions may cause red cells to haemolyse. Other solutions shall not be given with red cells unless there is sufficient data to ensure compatibility.

### **MEDICATIONS**

Medication shall not be added to the blood bag or the transfusion line. If drugs need to be administered via the same IV line as a transfusion - the transfusion shall be stopped and the line flushed with normal saline. Administer the drug, then flush the line with normal saline before restarting the transfusion. This manoeuvre should not result in the transfusion of red cells exceeding 4 hours.

Co-administration of morphine, pethidine and/or ketamine diluted in normal saline [as for patient controlled analgesia or continuous side arm infusion] via a non reflux valve has been shown not to adversely affect red cells

### **Evaluation**

Pathology Transfusion Department should be notified in the event of all reactions. Clear documentation in the patient's medical history and Blood Product Adverse Reaction investigation form must be completed.

### **References**

1. NHMRC and ASBT Clinical Practice Guidelines on the use of Blood Components (red blood cells, platelets, fresh frozen plasma, cryoprecipitate). (2001)
2. Australian Red Cross Blood Service – Victoria, Circular of Information –an extension of blood component labels 2006.

## Fresh Frozen Plasma (FFP) for Transfusion

### Collection

#### **ALERT: PATHOLOGY REQUIRES 20 MINUTES TO THAW FFP**

### **Purpose**

To safely collect Fresh Frozen Plasma to patients by;

- correctly collecting FFP issued from Transfusion Department *in Pathology* and document correctly.
- correctly identifying patients and products

### **Scope**

These guidelines apply to Registered Nurses and Medical officers.  
(Enrolled Nurses, Ward Aides and Attendants are able to collect product only as per institution policy).

### **Procedure**

1. The staff member collecting the product from pathology must have documentation containing the patients' identification. (i.e. documentation that contains 3 points of patient ID).
2. Only take units that will be utilised stat.
3. Ensure transfusion is **commenced** within **30 minutes of removal of blood from blood fridge**.
4. Collect the Transfusion Issue form on collection of the first unit.
5. Ensure all necessary details: date, time blood removed from fridge and ward, signature/name of person collecting FFP are recorded on the Blood Register Sign Out form **which remains in Pathology**.
6. Check the following details between the product bag, the label attached to the product bag and transfusion report form:
  - a. Patient's full name, date of birth and UR number
  - b. Patient's blood group
  - c. Donor's blood group
  - d. Donor's donation number
  - e. Expiry date of FFP
7. **FFP is to be transported in the designated transport esky from pathology to the patient**

**ALERT: PATHOLOGY REQUIRES 20 MINUTES TO THAW FFP.**

### **Product Description**

Fresh Frozen Plasma (FFP) is plasma separated from whole blood within 6-8 hours of donation and then **frozen to -30°C**, this allows a **storage life of 12 months**. FFP contains **all coagulation factors**. FFP is issued as ABO group compatible. **In an emergency when the patient's blood group unknown, Group AB FFP may be used.**

FFP comes in a volume of 300mLs. FFP is thawed by Pathology in a 37°C water bath and this takes **20-30 minutes**, **once thawed FFP has a 24-hour shelf life for some indications if kept at 2-6°C.**

Complete a Transfusion Medicine Request Form and phoning Transfusion Department in Pathology orders FFP.

### **Purpose**

To safely administer FFP to patients by;

- correctly collecting FFP issued from Transfusion Department in Pathology and document correctly.
- correctly identifying patients and products prior to administration
- safely administering FFP, including product description and indications.
- safely managing transfusion reactions.

### **Scope**

These guidelines apply to Registered Nurses and Medical officers.  
(Enrolled Nurses can participate with identity and blood bag detail checks with 1 RN)

### **Equipment Requirements**

- Blood Transfusion IV Order chart with patient details
- Blood Product
- Transfusion Issue Form (from Pathology)
- Patient with patent IV access
- Correct blood administration set, with 170 - 200 micron filter
- Infusion pump as required
- Blood warmer as required

### **Administration of Fresh Frozen Plasma**

**No transfusion is to be administered without documented consent, including indication for transfusion.**

1. Undertake baseline observations temperature, pulse, blood pressure and respirations. Document on blood observation chart.
2. Check I.V site for infection and patency.
3. Collect equipment required for transfusion
4. Collect FFP
5. Re-check all identity and blood bag details prior to transfusion of blood. This must be done by two (2) people (2 RN's or 1 RN and 1, Medical Officer, 1 RN and 1 EN), at the bedside before connecting the bag to the intravenous line.

Visually inspect the blood for discoloration and consistency. If concerned return to the Transfusion Department in Pathology **STAT**.

Identify Patient by checking against blood bag label, transfusion report issue form, Blood Product Order chart and the patient's identity.

If able ask patient to identify themselves, name and date of birth.

If the patient is unconscious or a paediatric patient a secondary RN/MO or relative must confirm the 3 points of identity of recipient.

6. Prime line with FFP or Normal Saline utilising a **Blood Transfusion giving set with a (170-200 micron) filter.**
7. Commence infusion **STAT. Transfuse over 30 minutes or as the patient's fluid status allows** may be given faster in an emergency. Neonatal and Paediatric transfusion rate as per order
8. ***Notify and return unused FFP to the Haematology Department if it cannot be commenced within 30 minutes***

***Sign back into issue book and notify pathology staff.***

9. Closely observe the patient for the first 15 minutes of the transfusion, as this is when transfusion reactions are likely to occur.
  - The patient should have baseline observations **temperature, heart rate, respiratory rate, and blood pressure** and then a set of observations at completion.

**Note** Observations may be taken more frequently according to patient's condition and/or as requested by the medical officer

10. At the completion of the transfusion, flush line with normal saline.
12. Disconnect administration set from patient
13. Return/store blood bags (double bagged with labels facing out) Contact pathology for individual regions requirements.

### **CONCURRENT FLUIDS**

The only fluids that can be given concurrently through the same IV device as a red cell transfusion are:

- normal saline.
- 4% Albumin.
- plasma protein fractions or
- ABO - compatible plasma.

### **INCOMPATIBLE FLUIDS**

Electrolyte and colloid solutions containing calcium (eg; Haemacel™/Gelofusine™) shall never be given with blood cell components collected in an anticoagulant containing citrate as they may cause clotting of the infusion line.

5% dextrose in water or hypotonic sodium solutions may cause red cells to haemolyse. Other solutions shall not be given with red cells unless there is sufficient data to ensure compatibility.

### **MEDICATIONS**

Medication shall not be added to the blood bag or the transfusion line. If drugs need to be administered via the same IV line as a transfusion - the transfusion shall be stopped and the line flushed with normal saline. Administer the drug, then flush the line with normal saline before restarting the transfusion. This manoeuvre should not result in the transfusion of red cells exceeding 4 hours.

Co-administration of morphine, pethidine and/or ketamine diluted in normal saline [as for patient controlled analgesia or continuous side arm infusion] via a non reflux valve has been shown not to adversely affect red cells

### **Note**

- For common reactions to FFP include allergic which may range from minor to life threatening.
- **Refer to Red Cell transfusion reactions for possible reactions with FFP and Management.**

### **References**

NHMRC and ASBT Clinical Practice Guidelines on the use of Blood Components (red blood cells, platelets, fresh frozen plasma, cryoprecipitate). (2001)

British Committee for Standards in Haematology, Blood Transfusion Taskforce. (1999): The administration of blood and blood components and the management of transfused patients  
Australian Red Cross Blood Service – Victoria, Circular of Information –an extension of blood component labels 2006.

## Cryoprecipitate for Transfusion

### COLLECTION

#### Purpose

To safely collect Cryoprecipitate to patients by;

- correctly collecting Cryoprecipitate issued from Transfusion Department *in Pathology* and document correctly.
- correctly identifying patients and products.

#### Scope

These guidelines apply to Registered Nurses and Medical officers.  
(Enrolled Nurses, Ward Aides and Attendants are able to collect product only as per institution policy).

### Procedure

1. The staff member collecting the product from pathology must have documentation containing the patients' identification. (i.e. documentation that contains 3 points of patient ID).
2. Only take units that will be utilised stat.
3. Ensure transfusion is **commenced** within **30 minutes of removal of Cryoprecipitate from blood fridge**.
4. Collect the Transfusion Issue form on collection of the first unit.
5. Ensure all necessary details: date, time blood removed from fridge and ward, signature/name of person collecting blood are recorded on the Blood Register Sign Out form **which remains in Pathology**.
6. Check the following details between the product bag, the label attached to the product bag and transfusion report form:
  - Patient's full name, date of birth and UR number
  - Patient's blood group
  - Donor's blood group
  - Donor's donation number
  - Expiry date of Cryoprecipitate
7. **Product is to be transported in the designated transport esky from pathology to the patient**

### **Product Description**

Each bag contains **Factor VIII, Fibrinogen, Factor XIII, von Willebrand's Factor and Plasma** and is prepared by thawing FFP and recovering the precipitate. This is a single donor per bag. Group O and A cryoprecipitate can be obtained from Transfusion Department in Pathology (Group B or AB should receive group A cryoprecipitate, Group O maybe issued to a Group B patient if group A cryoprecipitate is in short supply)

Cryoprecipitate is approximately a **volume of 30mls** and is **thawed** at 37°C; this takes **10 minutes**.

**Note:** Cryoprecipitate is not the same product as cryodepleted plasma cryosupinantant.

### **Purpose**

To safely administer Cryoprecipitate to patients by;

- correctly collecting Cryoprecipitate issued from Transfusion Department in Pathology and document correctly
- correctly identifying patients and products prior to administration
- safely administering Cryoprecipitate, including product description and indications  
safely managing transfusion reactions

### **Scope**

This policy and procedure applies to Registered Nurses and Medical Officers.  
(Enrolled Nurses can participate with identity and blood bag detail checks with 1 RN)

### **Equipment Requirements**

- Blood Transfusion IV Order chart with patient details
- Blood Product
- Transfusion Issue form (from Pathology)
- Patient with patent IV access
- Correct blood administration set, with 170 - 200 micron filter
- Infusion pump as required
- Blood warmer if required

### Administration of Cryoprecipitate

**No transfusion is to be administered without documented consent, including indication for transfusion.**

1. Undertake baseline observations Temp, pulse, blood pressure and respirations. Document on Blood Product Observation Chart.
2. Check I.V site for infection and patency.
3. Collect equipment required for transfusion
4. Collect thawed Cryoprecipitate from Pathology Blood Fridge
5. Re-check all identity and blood bag details prior to transfusion of blood. This must be done by Two (2) people (2 RN's or 1 RN and 1, Medical Officer, 1 RN and 1 EN), at the bedside before connecting the bag to the intravenous line.

Identify Patient by checking against blood bag label, transfusion report issue form, Blood Product IV Order chart and the patient's identity.

If able ask patient to identify themselves, name and date of birth.

If the patient is unconscious or a paediatric patient a secondary RN/MO or relative must confirm the 3 points of identity of recipient.

6. Visually inspect cryoprecipitate, if there are any concerns, it should be returned to the pathology department. **Unusual colour or turbidity can suggest bacterial contamination**
7. Prime line with Cryoprecipitate or Normal saline utilising a **Blood Transfusion Administration set with a (170-200 micron) filter**. Mix thoroughly by inversion only.
8. Commence infusion STAT. **Transfuse over 5 -10 minutes or as the patient's fluid status allows, may** be given faster in an emergency. Neonatal and paediatric transfusion rates as per order.
9. ***Notify and return Cryoprecipitate to the Transfusion Department if it cannot be commenced within 30 minutes.***
10. Closely observe the patient for the first 15 minutes of the transfusion, as this is when transfusion reactions are likely to occur.

**Note** Observations may be taken more frequently according to patient's condition and/or as requested by the medical officer

11. At the completion of the transfusion, flush line with normal saline.
12. Disconnect administration set from patient
13. Store used blood bags with administration set attached (double bagged with labels facing out) in ward fridge for 24 hours as per pathology Guidelines.

### **CONCURRENT FLUIDS**

The only fluids that can be given concurrently through the same IV device as a red cell transfusion are:

- normal saline.
- 4% Albumin.
- plasma protein fractions or
- ABO - compatible plasma.

### **INCOMPATIBLE FLUIDS**

Electrolyte and colloid solutions containing calcium (eg; Haemacel™/Gelofusine™) shall never be given with blood cell components collected in an anticoagulant containing citrate as they may cause clotting of the infusion line.

5% dextrose in water or hypotonic sodium solutions may cause red cells to haemolyse. Other solutions shall not be given with red cells unless there is sufficient data to ensure compatibility.

### **MEDICATIONS**

Medication shall not be added to the blood bag or the transfusion line. If drugs need to be administered via the same IV line as a transfusion - the transfusion shall be stopped and the line flushed with normal saline. Administer the drug, then flush the line with normal saline before restarting the transfusion. This manoeuvre should not result in the transfusion of red cells exceeding 4 hours.

Co-administration of morphine, pethidine and/or ketamine diluted in normal saline [as for patient controlled analgesia or continuous side arm infusion] via a non reflux valve has been shown not to adversely affect red cells

**Note Refer to Red Cell transfusion reactions for possible reactions with Cryoprecipitate and Management.**

### **References**

NHMRC and ASBT Clinical Practice Guidelines on the use of Blood Components (red blood cells, platelets, fresh frozen plasma, cryoprecipitate). (2001)

Australian Red Cross Blood Service – Victoria, Circular of Information –an extension of blood

component labels 2006.

### **FRACTIONATED PRODUCTS**

**BIOSTATE** - Mix2Vial (Factor VIII concentrate)  
**Prothrombinex-HT** (Factor II, IX and X concentrate)  
**MonoFIX-VF** (Purified factor IX)

#### **Purpose**

To administer Fractionated Plasma Products by

- correctly identifying patient's who require **Fractionated Plasma** products prior to administration
- safely administering the correct product, including **Fractionated Plasma** product description and indications.

#### **Scope**

Guidelines for Registered Nurses and Medical officers.  
(Enrolled Nurses can participate with identity and blood product detail checks with 1 RN)

### **Biostate – Mix2Vial**

#### **Product Description**

A human blood concentrate containing factor VIII, prepared from pooled plasma from voluntary donors. Two viral inactivation steps to inactivate viruses HIV and hepatitis B&C, but total safety from viral contamination cannot be absolutely

#### **Indications**

The treatment and prophylaxis of bleeding associated with factor VIII deficiency due to Haemophilia A. and Von Willebrand's disease.

#### **Preparation and Administration**

**Biostate -Mix2Vial** - Using the supplied, specially designed Mix2Vial system, reconstitute with sterile 'water for injection' as per product insert.

**DO NOT USE if gel or clots form in preparation** or there is loss of vacuum when reconstituting.

Through the preparation device draw up into large syringes, can then be given through a 21G Butterfly or any IV line by slow push approximately over 5 minutes or as tolerated by patient. All

unused portions should be discarded.

**Record Batch number on Blood Product IV Order Form.**

### Dose

- **Von Willebrand's Disease:** The usual dose of Factor VIII is 100-units/10 kg body weight, repeated every 24 hours.
- **Haemophilia A:** Dose depends on the clinical indication and is calculated as follows:

$$\text{Dose (units)} = \frac{\text{Desired Increase in Factor VIII level (\%)} \times \text{weight (kg)}}{2}$$

- Doses should be repeated 12 hourly as necessary (24 hourly may suffice for mild bleeds).  
Doses may need to be varied according to individual responses as determined by Factor VIII level tests.

### Prothrombinex-HT Mix2Vial

#### Product Description

A human blood concentrate containing factors **II, IX and X**, prepared from pooled plasma from voluntary donors. Heat viral inactivation occurs for HIV, hepatitis B&C. A freeze-dried powder **20ml vial** contains **approx 500IU of factor IX and 550IU of factor II and 600IU factor X**. Contains a small amount of thrombin and Heparin.

#### Preparation and Administration

**Prothrombinex-HT-** Using the supplied, specially designed Mix2Vial system, reconstitute with sterile 'water for injection' as per product insert. **DO NOT USE** if gel or clots form in preparation or there is no vacuum when reconstituting.

Through the preparation device draw up the dissolved Prothrombinex into large syringes, can then be given through a 21G Butterfly or any **IV line by slow push** approximately over 5 minutes or as tolerated by patient.

All unused portions should be discarded.

The rate **should not exceed 10 ml/minute**. Administration should take place **within an hour of reconstitution**.

For detailed instructions, see the package insert.

**Record Batch number in patient history**

**As per, Clinical Haematologists orders.**

### **Complications/Reactions**

#### **Specific for Prothrombinex-HT**

**Thrombosis or DIC:** contains activated clotting factors and may induce thrombosis in susceptible subjects: Anti thrombin III and Heparin have been added to the products to lessen this possibility but caution should be taken when using this product in patients with liver cell failure.

**Heparin induced thrombocytopenia:** Prothrombinex HT and MonoFIX-VF both contain small amounts of heparin. This may be sufficient to contribute to Heparin associated thrombocytopenia where a history of this exists.

### **MonoFIX-VF Mix2Vial**

#### **Product Description**

- Purified form of **factor IX**, two-step viral inactivation. Each vial contains a freeze -dried powder with approximately **500IU of factor IX**.

#### **Preparation and Administration**

Using the supplied, specially designed **Mix2Vial** system, reconstitute with sterile 'water for injection' as per product insert.

**DO NOT USE** if gel or clots form in preparation or there is no vacuum when reconstituting.

Through the preparation device draw up into large syringes, can then be given through a 21G Butterfly or any **IV line by slow push** approximately over 5 minutes or **as tolerated by patient**. All unused portions should be discarded.

**Record Batch number in patient history**

### **Complications/Reactions**

- **Allergic reactions** are unusual and generally mild and can be prevented or alleviated by hydrocortisone 50 - 100 mg and Phenergan 12.5 - 25 mg IV (adult doses), as ordered by Medical Officer.
- **Transmission of viral infection**, especially Hepatitis C, remains a potential if minor risk despite donor screening and heat inactivation.

**Note** Patients with Haemophilia B or Haemophilia A with inhibitor are generally under the care of a consultant haematologist or paediatrician, who should be consulted.

### **References**

Circular Information, March 2006, Australian Red Cross Blood Service Victoria.

CSL Bioplasma product information Biostate® –Human Coagulation Factor VIII, August 2002

CSL Bioplasma product information Prothrombinex-HT- August 2002

CSL Bioplasma product information MonoFIX-VF, August 2002

National Warfarin Consensus Guidelines.

**Human Rh (D) Immunoglobulin (Anti-D)**

**Purpose**

**Post natal Anti D**

To prevent allo-immunisation in Rh (D) Negative persons by Rh (D) Positive red cells within 48 hrs, and up to 72hrs, of delivery or procedure such as external cephalic version.-

**Ante natal prophylaxis and management of negative blood group women.**

Prophylactic Rh D immunoglobulin (Anti-D) is given to women with Rh D negative blood so that they do not become isoimmunised to Rh D positive red blood cells. Isoimmunisation can occur if foetal red blood cells cross into the maternal circulation during birth or during the pregnancy.

There are two Rh D immunoglobulin products available in Australia: **250 IU Rh D**  
**625 IU Rh D**

**Scope**

**Guidelines for Registered Nurses, Midwives and Medical Officers.**

(Enrolled Nurses can participate with identity and blood product detail checks with 1 RN)

**Dosage:**

**The recommended of Rh (D) Immunoglobulin is:**

Strength	Product	
250 IU	Rh D Immunoglobulin	1st trimester (12 weeks) sensitising events (Singleton pregnancy)
625 IU	Rh D Immunoglobulin	1st trimester sensitising events (Multiple pregnancy)
		2nd & 3rd trimester sensitising events (>12 weeks gestation)
		Routine antenatal prophylaxis at 28 weeks
		Routine antenatal prophylaxis at 34 weeks

1ml will protect against immunisation by up to 6 ml of foetal red cells.

- Exact dose will be dependant upon the results of a kleihauer test.
- All Rh D negative women delivering an Rh D positive infant within 72 hours of birth.
- All Rh D negative women with an Rh D positive infant should have an estimate of feto-maternal haemorrhage (FMH test) to determine the need for additional doses of anti-D.
- Advice regarding administration of additional doses for women with a greater than 6 ml FMH can be obtained from the Haematologist on-call.

## **Midwifery Guidelines**

### **First Trimester (up to and including Week 12 of gestation)**

- A dose of 250 IU (50ug) Rh D immunoglobulin should be offered to every Rh D negative woman with no pre-existing Anti-D to ensure adequate protection against immunisation for the following indications:
  - Miscarriage
  - Termination of pregnancy
  - Ectopic pregnancy
  - Chorionic villus sampling
  - Twin pregnancy usually needs a dose of 625IU
- A dose of 250 IU (50ug) Rh D immunoglobulin (Mini Dose) is sufficient to prevent immunisation by FMH of 2.5 ml of foetal red cells (5ml whole blood).

### **Beyond the First Trimester (after Week 12 of gestation)**

- A dose of 625 IU (125ug) Rh D immunoglobulin should be offered to every Rh D negative woman with no preformed Anti-D antibodies to ensure adequate protection against immunisation for the following indications:
  - Genetic studies (amniocentesis and cordocentesis ).
  - Abdominal trauma considered sufficient to cause FMH.
  - Each occasion of revealed or concealed antepartum haemorrhage (where the patient suffers unexplained uterine pain, the possibility of concealed antepartum haemorrhage should be considered, with the view to immunoprophylaxis).
  - External cephalic version (performed or attempted).
  - Recurrent bleeds.

### **Antenatal Prophylaxis (at 28 and 34 weeks of gestation)**

- At 28 and 34 weeks gestation universal prophylaxis with Rh D immunoglobulins to Rh D negative women with no preformed Anti-D antibodies is generally regarded as best practice. The dose given should be 625 IU (125ug). Antibody status checked prior to prophylactic doses.

### **Request**

A Transfusion Medicine Request form is required that includes indications for use and the number of weeks gestation.

### **Equipment**

- Anti-D
- 3ml Syringe
- Interlink Vial access
- 23G needle
- Alco wipe
- Gloves
- Patient's consent

### **Administration Procedure**

1. Collect Anti-D from Pathology. An Issue form is supplied with Anti-D  
When collecting product from Pathology.
2. Patient ID check 3 points of identity by 2 registered nursing/midwifery staff
3. Checklist
  - Mothers blood group
  - Baby's blood group if postpartum
  - Amount of Anti-D
  - Drug Order
  - Human Anti-D Antibody Product Administration Form.
  - Issue Form
  - Check for preformed antibodies prior to 28/40 prophylactic dose
4. Give Anti-D
5. Put on gloves
6. Prepare skin with alcohol wipe
7. Administer as deep slow intramuscular injection
8. Observe injection site
9. Document in patient history.

10. Record Batch number on Human Anti-D Antibody Product Administration Form

As per package insert – deep intramuscular injection

Except in cases where anti-D is given for platelet transfusion

**Rh (D) Negative patients should receive 250 I.U. prophylactic anti-D Immunoglobulin when receiving Rh (D) Positive platelets if they fall into the following categories:**

i) Women of child-bearing age. (<50)

ii) Men <25 years of age.

Anti-D should be given subcutaneously to patients with low platelet counts to decrease the risk of haematoma. Anti-D need only be given on a weekly basis.

**If a dose of more than 5ml is required, it is recommended to administer it in divided doses at different sites.**

## **Human Albumen 4% & 20%**

### **Description:**

Albumen is prepared from pooled human plasma obtained from voluntary donors. Albumen is heated at 60° C for 10 hours and incubated at low pH to inactivate viruses. The composition of Albumen is as follows:

Human Albumin	40g/Litre, 200g/Litre
Sodium	140 mmol/Litre
Chloride	128mmol/Litre
Octanoate	6.4 mmol/Litre

### **Contraindications**

Albumen 4% must not be used if there is a history of allergy to this product. Albumin is contraindicated in patients with cardiac failure.

### **Purpose**

To safely administer Albumin 4% & 20% to patients by;  
correctly collecting Albumin issued from Transfusion Department in Pathology and document correctly.

- correctly identifying patients and products prior to administration
- safely administering albumin, including product description and indications.
- safely managing transfusion reactions.

### **Scope**

These guidelines apply to Registered Nurses and Medical officers.

(Enrolled Nurses, Ward Aides and Attendants can collect product only as per institutions policy.)

### **Equipment Requirements**

- Blood Transfusion IV Order chart with patient details
- Blood Product (albumin)
- Transfusion Issue Form (from Pathology)
- Patient with patent IV access
- Correct blood administration set, with 170 - 200 micron filter
- Infusion pump as required

### **Administration Procedure**

**No transfusion is to be administered without documented consent, including indication for transfusion.**

1. Undertake baseline observations temperature, pulse, blood pressure and respirations. Document Observations on a Blood Product Observation Chart.
2. Check I.V site for infection and patency.
3. Collect equipment required for transfusion
4. Collect Albumin
5. Re-check all identity and bottle label details prior to transfusion of albumin. This must be done by two (2) people (2 RN's or 1 RN and 1, Medical Officer, 1RN and 1 EN), at the bedside before connecting the bottle to the intravenous line.

The product is an almost colourless, yellow or pale green solution that is normally clear or slightly opalescent. The solution should not be used if it appears turbid by transmitted light. Return to the Transfusion Department in Pathology **STAT**.

Identify Patient by checking against bottle label, issue form, Blood Product I.V. Order form and the patient's identity.

If able ask patient to identify themselves, name and date of birth.

If the patient is unconscious or a paediatric patient a secondary RN/MO or relative must confirm the 3 points of identity of recipient.

6. Prime line with Albumin utilising a **Blood Administration set with a (170-200 micron) filter.**
7. Commence infusion **STAT. Transfuse as per order prescribed on I.V. Blood Product Order form.**
9. Closely observe the patient for the first 15 minutes of the transfusion, as this is when transfusion reactions are likely to occur.

- **The patient should have baseline observations temperature, heart rate, rate, and blood pressure and then a set of observations at completion.**
- **Note:** Observations may be taken more frequently according to patient's condition and/or as requested by the medical officer

10. At the completion of the transfusion, flush line with normal saline.
12. Disconnect administration set from patient
13. **Record batch number by peeling off second label** containing batch number details from the Albumin bottle and **applying to Batch No. column, on Blood Product IV Order form.**

## **HUMAN INTRAVENOUS IMMUNOGLOBULIN INFUSIONS (IVIG)**

### **General IVIG Administration Recommendations**

- ❑ Always refer to the package product information or IVIG Administration Forms before using any IVIG product.
- ❑ Calculate the expected administration time when booking out-patient infusions.
- ❑ Avoid starting the infusion overnight in non urgent situations (check urgency with treating doctor).
- ❑ Use of a volumetric infusion pump is recommended.
- ❑ Before commencing the infusion ensure that:
  - ❑ Informed consent has been obtained & documented as per hospital policy for blood product
  - ❑ The patient is adequately hydrated.
  - ❑ **Adrenaline, oxygen and resuscitation equipment are available and in working order.**
  - ❑ Premedications, if required, are administered.
  - ❑ Allow product to reach room temperature
- ❑ Do not use if product is turbid or cloudy, or contains any sediment or particles. Contact the Hospital Transfusion Service.
- ❑ IVIg must be administered separately from other IV fluids or medications the patient is receiving.
- ❑ **If an adverse event occurs, stop the infusion immediately and consult the treating doctor.** Report adverse events to Haematology Department. For minor reactions the infusion can often be restarted cautiously at a slower rate after the patient has improved clinically.
- ❑ Adverse events must be reported to both the ARCBS and the manufacturer of the product. This is usually done through the Haematology Department.
- ❑ UN-USED bottles should be returned to the Haematology Department. **NEVER store** in ward areas/domestic fridges (because of temperature variations & need for strict stock control of a precious product).
- ❑ Any transfusion report or stickers with batch details **MUST** be permanently filed in the patient's case notes.
- ❑ IVIG products contain no antimicrobial. It must be used immediately after opening or reconstitution. Any remaining contents must be discarded (inform Haematology Department if this occurs).
- ❑ **Blood glucose determination in diabetic patients:** Glucose monitoring systems (test strips) utilising the glucose dehydrogenase pyrroloquinone (GDH-PQQ) or the glucose-dye-oxidoreductase method will report falsely elevated glucose readings in the presence of maltose. Intragam and Octagam contain maltose.  
To reduce the risk of inappropriate administration of insulin due to falsely elevated glucose readings, the following precautions should be taken when patients are receiving maltose containing products:
  1. Review the product insert of the glucose monitoring system/test strips or contact the glucose monitoring system manufacturer to determine which glucose determination method is used.

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2. Only use those systems that use the glucose oxidase or hexokinase or glucose dehydrogenase–

NAD (GDH-NAD) method of glucose determination.

- **If > 8 weeks since last infusion treat as first infusion.**

**ONLY USE IVIG for the named patient it was issued for. The treating medical officer prescribes a specific IVIG product based on guidelines adopted by the State/Territory IVIG User Group and individual patient factors.**

**PAEDIATRIC patients:** IVIg products suitable are Intragam®P and Octagam®. Infusion rates are based on body weight and therefore different to the standard rates outlined for adults.

References: CSL Bioplasma® Intragam® P Product Information, CSL Bioplasma® Sandoglobulin® Product Information and Octagam Administration Guidelines by Octapharma Australia Pty Ltd

## **Intragam P**

### **Product Description**

**INTRAGAM P is produced by CSL Bioplasma**, which contains normal immunoglobulin (human) that has been purified by electrophoresis. At least **98%** of the protein is **immunoglobulin G**. It has a concentration of **6-gm/100 ml** and is available in **50 ml (3g), 200 ml (12 g)**.

### **Indications**

To ensure demands can be met from the **limited supply**, IVIG is issued in accordance with guidelines released in 2000 by a Working party of the Australian Health Ministers' Advisory Council (AHMAC) Blood and Blood Products Committee<sup>14</sup> (it is expected new guidelines will be issued in 2006).

### **Purpose**

To deliver safely Human Intravenous Immunoglobulin to patients by;

- correctly identifying patient's who require Human Intravenous Immunoglobulin product prior to administration
- safely administering Human Intravenous Immunoglobulin, including product description and indications.

### **Scope**

Guidelines for Registered Nurses and Medical officers.

(Enrolled Nurses can participate with identity and blood product detail checks with 1 RN)

### **Procedure**

All **Human Intravenous Immunoglobulin infusions** are available through the **Transfusion Department in Pathology**, which holds a small stock. Contact the Senior Scientist in Transfusion or Clinical Haematologist to order IVIG.

### **Dosage**

Issued and Authorized Dosage may be less due to an ongoing national shortage of this product.

### **Administration**

- For complete instructions, refer to Human Intravenous Administration chart for Intragam P.

**TRANSFUSION OF BLOOD AND BLOOD COMPONENTS**

- Intravenous Immunoglobulin is administered through an IMED or similar infusion pump. It is administered undiluted, directly from the bottle; a blood administration set can be used however is not necessary.

**Rate of Infusion**

**Refer to: Intragam P. Human Immunoglobulin Administration Chart**

- Commence infusion at **1ml /minute (60ml/hr) for first 15 minutes**
- Gradually **increase to maximum 3-4ml/minute (240ml/hr) over the next 15 minutes**
- Continue at **240ml/hr until completed (or as tolerated by patient)**
- **Note: Infusion for neonates and paediatrics needs to be reduced refer to HW3**

**Observations**

- **Pulse, blood pressure, respiratory rate, and temperature** are to be taken **prior to the commencement** of the infusion.
- Then at **5 and 10 minutes after commencement. Observe closely for the**

**First 15 minutes of blood transfusion, hypotension and anaphylaxis can occur during this time,**

**Then**

- **Every 60 minutes** until the infusion is **completed.**

**Adverse Reactions**

Reactions to intravenous immunoglobulin tend to be **related to the infusion rate** and are most likely to occur **during the first hour of the infusion.**

**Anaphylaxis** can occur, but is rare, if occurs this **denotes a Medical emergency** – notify **Code Blue.**

Sometimes a premedication may be ordered prior to commencement of infusion.

<b>Signs and Symptoms</b>	<b>Management</b>	<b>Delayed Reactions</b>
<ul style="list-style-type: none"> <li>• Abdominal pain</li> <li>• Headache</li> <li>• Chest-tightness</li> <li>• Facial flushing or pallor</li> <li>• Feeling hot</li> <li>• Dyspnoea</li> <li>• Non-urticarial skin rash</li> <li>• Itching</li> <li>• Hypotension</li> <li>• Nausea and vomiting</li> </ul>	<ul style="list-style-type: none"> <li>• The infusion should be stopped temporarily</li> <li>• <b>Once the patient improves clinically</b></li> <li>• Cautiously recommence at a slower rate.</li> <li>• Notify the RMO</li> </ul>	<ul style="list-style-type: none"> <li>• Nausea</li> <li>• Vomiting</li> <li>• Chest pain</li> <li>• Rigor</li> <li>• Aching legs</li> </ul> <p><b>These reactions may occur once infusion completed and normally within 24 hours –Notify RMO</b></p>

## **References**

Australian Red Cross Blood Service – Victoria, Circular of Information –an extension of blood component labels 2003.

Australian Red Cross Blood Service- Transfusion Medicine Manual 2003. Blood Transfusion and clinical use of Blood in Australia.

## **Octagam**

**CSL Bioplasma product information Intragam P, July 2000.**

## **Product Description**

Octagam contains human normal immunoglobulin (Ig) with a broad spectrum of antibodies against infectious agents. Also contains a sugar, maltose (100mg/ml), and may contain low levels of IgA (100 microgram/ml).

## **Indications**

To ensure demands can be met from the **limited supply**, Intragam P/Octagam is issued in accordance with guidelines released in 2000 by a Working party of the Australian Health Ministers' Advisory Council (AHMAC) Blood and Blood Products Committee<sup>14</sup>. Octagam is supplied for Category 1 indications as follows:

## **Purpose**

To facilitate the safe delivery of Human Intravenous Immunoglobulin (Octagam) to patients by;

- correctly identifying patient's who require Human Intravenous Immunoglobulin (Octagam) product prior to administration
- safely administering Human Intravenous Immunoglobulin (Octagam), including product description and indications.

## **Scope**

Guidelines for Registered Nurses and Medical officers.

(Enrolled Nurses can participate with identity and blood product detail checks with 1 RN)

## **Procedure**

### **Issue**

**Octagam is produced by Octapharma, all intravenous Octagam infusions are available through the Transfusion Department in Pathology, which holds a small stock. Human Intravenous Immunoglobulin (Octagam) requires authorization by the duty medical officer of the Australian Red Cross Blood Service (ARCBS). Refer to the Senior Scientist in Transfusion Department or Clinical Haematologist when ordering IVIG.**

### **Dosage**

Issued and Authorized Dosage may be less due to an ongoing national shortage of this product.

### **Administration**

1. Human Intravenous Immunoglobulin (Octagam) is administered through a volumetric or similar infusion pump. It is administered undiluted, directly from the bottle; a blood transfusion giving set should be used
2. Refer to Human Intravenous Immunoglobulin (Octagam) Administration form for administration and procedure details.
3. For complete instructions, refer to the package insert.

### **Rate of Infusion**

Refer to Human Intravenous Immunoglobulin Administration (Octagam) Chart.

### **ADMINISTRATION CHART**

**Octagam is recommended to be infused at a rate of 1mL/kg/hr for the first 30 minutes; if tolerated increase the rate to 2mL/kg/hr for the next 30 minutes. If it is tolerated after this time the rate can be increased to 4mL/kg/hr for 30 minutes. Thereafter, the infusion can be maintained at a rate up to but not exceeding 5mL/kg/hr/480mL/hr. These rates are for the complete dose, NOT per individual bottle.**

**If batch numbers change during the patient's prescribed dose, stay at the same pump rate for an extra 30 minutes to ensure no reaction occurs to the different batch number**

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Weight Kg	Initial rate 1ml/kg/hr for first 30 min Pump rate (ml/hr)	Increase to 2ml/kg/hr for next 30 min Pump rate (ml/hr)	Increase to 4ml/kg/hr for next 30 min Pump rate (ml/hr)	May then increase to a maximum rate of 5ml/kg/hr Pump rate (ml/hr)
40	40	80	160	200
45	45	90	180	225
50	50	100	200	250
55	55	110	220	275
60	60	120	240	300
65	65	130	260	325
70	70	140	280	350
75	75	150	300	375
80	80	160	320	400
85	85	170	340	425
90	90	180	360	450
95	95	190	380	475
100	100	200	400	500
105	105	210	420	525
110	110	220	440	550
115	115	230	460	575
120	120	240	480	600
125	125	250	500	625
130	130	260	520	650
135	135	270	540	675
140	140	280	560	700

### Observations

1. **Record pulse, blood pressure, respiratory rate, and temperature** are to be taken **prior to the commencement** of the infusion
2. **15 minutes** post commencement
3. **30 minutes** post commencement for **1 hour**
4. **Hourly** until the infusion is **completed**.
5. **Hypotension and anaphylaxis can occur**

**ADVERSE REACTIONS**

Reactions to intravenous immunoglobulin tend to be **related to the infusion rate** and are most likely to occur **during the first hour of the infusion.**

<b>Delayed Reactions</b>	<b>Management</b>
<ul style="list-style-type: none"> <li>• Chest pain</li> <li>• Nausea</li> <li>• Vomiting</li> <li>• Rigor</li> <li>• Aching legs</li> </ul> <p><b>These reactions may occur once infusion completed and normally within 24 hours – Notify Medical Officer</b></p>	<ul style="list-style-type: none"> <li>• The infusion should be stopped temporarily</li> <li>• <b>Once the patient improves clinically</b></li> <li>• Cautiously recommence at a slower rate.</li> <li>• Notify the Medical Officer</li> </ul>

**Anaphylaxis** can occur, but is rare, if occurs this **denotes a Medical Emergency** – notify **Code Blue.**

Sometimes premedication may be ordered prior to commencement of infusion.

Reference: Octapharma Product Information Sheet 2005.  
References: CSL Bioplasma Blood Product Information Booklet.

## **SPECIAL REQUIREMENTS**

### **Leucocyte Depletion Filters**

**Note: The Australian Red Cross Blood Service is phasing in 100% leucocyte depleted Red Cells in all States and Territories. By the end of 2009, it is hoped that all red cells will be 100% leucocyte depleted.**

**It is important that staff are aware of where to find this information on the label on a unit of blood, as a leucocyte depletion filter will still be required at the bedside for a red cell transfusion, if not stated leucocyte depleted on the label.**

### **Purpose**

- To facilitate the safe delivery of bedside leucocyte filtered blood products to patients
- To reduce potential adverse effects of leucocytes in blood products.
- To correctly identify patient's who require leucocyte depleted product prior to administration
- To safely administer bedside leucocyte filtered blood products, including product and equipment description and indications.

### **Scope**

This policy and procedure applies to Registered Nurses and Medical officers.

**Use of blood components that are leucocyte depleted at the bedside may cause unexpected severe hypotension in some recipients, particularly those on ACE inhibitor medication**

### **Potential Adverse Effects of Leucocytes in Blood products are:**

- **Alloimmunisation** formation of antibodies to HLA, leucocyte and platelet antigens. This can contribute to refractoriness of platelet transfusion and can also contribute to bone marrow transplant non-engraftment.
- **Febrile Non-hemolytic Transfusion Reactions**
- **Transfusion associated Graft versus Host disease-** can be caused by leucocytes in product but can only be alleviated by irradiation (**refer to Irradiation Policy**)
- **Transfusion Related Acute Lung Injury (TRALI)**
- **Possible Immunomodulation**
- **Infection Transmission**
  - CMV Cytomegalovirus
  - EBV Epstein Barr Virus
  - HTL VI Human T Cell Lymphotropic Virus Type 1

Leucocyte depletion of blood products at the bedside can be achieved by using appropriate Leucocyte depletion filters as supplied by individual hospitals.

Pre-storage leucodepleted red cells are available by pre order from the ARCBS.

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### TRANSFUSION OF BLOOD AND BLOOD COMPONENTS

All Platelets are pre-storage Leucocyte depleted.

Leucocyte depletion **filters are effective in reducing the number of leucocytes** from blood product.

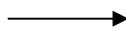
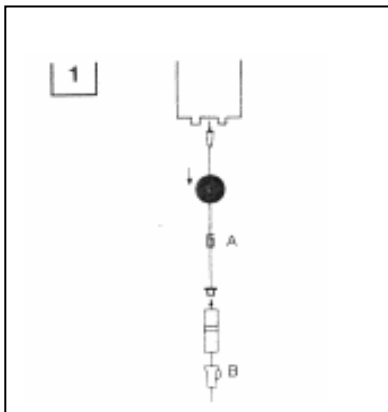
Pre storage Leucocyte depletion has an advantage to bedside Leucocyte depletion as it ensures all patients receive Leucocyte depleted product.

**Note** The **drip chamber should never be squeezed**, and the filter **should not be flushed with Normal saline during or after use**, remove filter and flush the line. Refer to product information sheet included with filter set.

**For administration of product refer to appropriate product Information Sheet.**

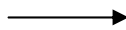
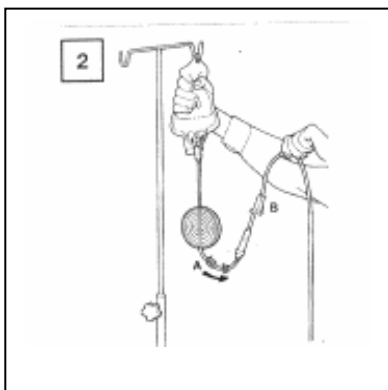
**WASH HANDS – WEAR GLOVES WHEN PRIMING FILTER.**

#### Pall Leucocyte Filter Instructions



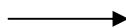
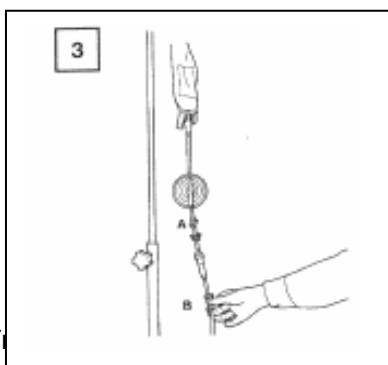
#### 1. Preparation of set and blood bag.

- Agitate blood bag and hang on drip stand.
- Attach administration set to universal outlet socket of filler.
- Verify filter Clamp A is open, locate administration set Clamp B directly down stream of drip chamber and close completely.
- Insert filter, set spike into blood bag using a twisting motion



#### 2. To prime filter and drip chamber.

- Tilt drip chamber to position shown.
- Squeeze blood bag and open set Clamp B to prime filter. Maintain pressure on blood bag until filter covered and blood enters drip chamber.
- Close set Clamp B.



#### 3. To transfuse blood

- Return drip chamber to hang vertically, as shown.
- Prime the administration line and connect tubing to patient
- Open clamp B and regulate rate of Transfusion.

This product is not currently used at the N.W.R.H (see instructions for Terumo Leucocyte depletion filter)

### Terumo Leucocyte Filter Instructions

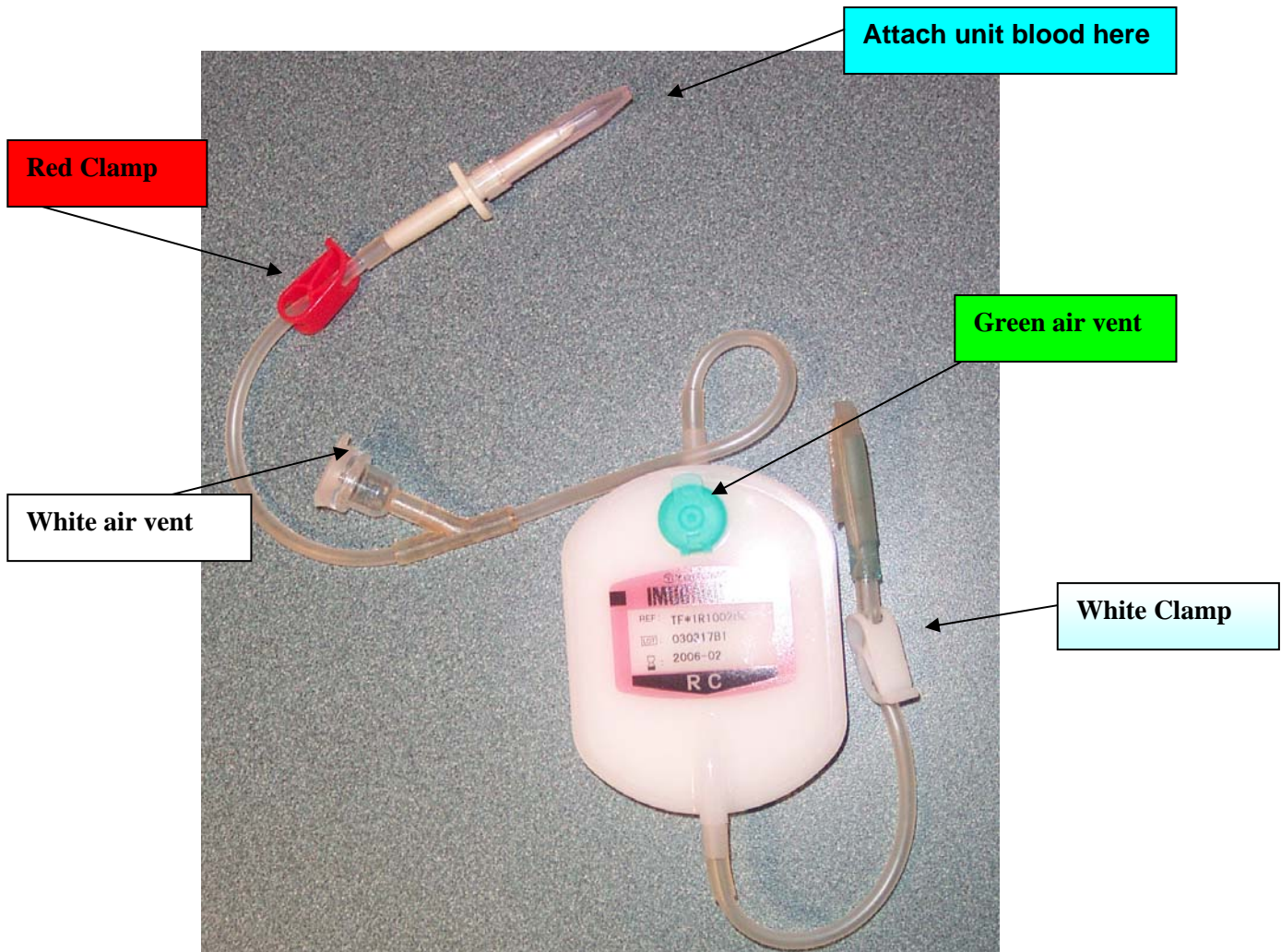
**\*Before priming filter ensure RED and WHITE clamps are closed.**

#### **Priming Filter:**

- (a) Attached blood bag to filter
- (b) Open red clamp
- (c) Open green air vent.

The blood will then fill the back of the filter first, then will fill front of filter. Once full, close green air vent.

- (d) Open white clamp prime remaining section of filter line.



## NORTH and NORTH WEST REGION

### TRANSFUSION OF BLOOD AND BLOOD COMPONENTS

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#### **TO EMPTY FILTER ONCE BLOOD HAS FINISHED:**

- (a) Close Red Clamp
- (b) Open White Air Vent and blood will empty from back of filter
- (c) Then open Green Air Vent and blood will empty from front of filter and proceed down past the white clamp.

You can then remove empty unit and filter and attach flush or if on pump flush with other line

**DO NOT AT ANY TIME FLUSH SPECIAL FILTER WITH NORMAL SALINE. ONLY RED CELLS GO THROUGH THIS FILTER.**

#### **References**

- Australian Red Cross Blood Service – Victoria, Circular of Information –an extension of blood component labels 2006.
- Australian Red Cross Transfusion Medicine Manual 2003. Blood Transfusion and Clinical use of Blood in Australia.

## **Irradiation of Blood Products**

### **Purpose**

To minimise the risk of transfusion associated graft versus host disease (TA-GVHD) in susceptible individuals.

To identify correctly patients who require irradiated products prior to administration of blood product.

**Transfusion associated graft versus host (TA-GVHD)** disease occurs when **viable T-lymphocytes** contained in blood components (Red cell products and platelets) are **not rejected** by the recipient's immune system, engraft and **attack recipient host tissues**.

**Inactivation of lymphocytes** in blood and blood products can be **achieved by** a suitable dose of **gamma irradiation**. Cellular products such as red cell and platelets should be irradiated by ARCBS with a **dose of 25Gy** with **no part receiving >than 50Gy**. **Red cells** can be irradiated up to 14 days following collection, and then **expire 14 days later**. **Platelets** can be irradiated at any stage of their 5 day life **expiry is 5 days from date of collection**. Paediatric packs are irradiated when ordered from the Red Cross.

**Note Gamma Irradiation** of red cells **increases extra cellular potassium**, caution with rate and volume with neonates transfusion or intrauterine transfusions when product stored >24hours from irradiation.

For **administration of product refer to appropriate product policy**.

**Note:** Irradiation does not affect viral transmission and **is not a substitute** for **CMV negative or leucodepleted products**. (Refer to leucocyte depletion policy)

### **References**

ANZSBT: Guidelines for Gamma Irradiation of Blood Components, 2003

Australian Red Cross Blood Service – Victoria, Circular of Information –an extension of blood component labels 2006.

### **Blood Warmers**

#### **Indications for use**

For transfusions greater than flow rates of >50ml/kg/hour in adults, > 15ml/kg/hour in children, and for exchange in infants.

Blood warmers if required should be used as per the manufacturer's instructions and subject to regular maintenance regular maintenance and safety checking prior to use.

A sticker indicating a date not less than one year ago will indicate this.

### **Jehovah Witness**

Generally this group do not accept transfusions of blood and blood components. Consent or refusal of transfusion must be clearly documented in patient's notes.

For further information, **refer to Jehovah Witness information on hospital intranet site.**

### **Exchange Transfusion**

Neonatal exchange transfusion will require the medical officer to contact the Royal Hobart Hospital NNICU/Paediatric. This can be a highly complex area, refer to Consultant and Haematologist for planning management.

Procedure available from NNICU, RHH.

### **CHANGING THE BLOOD GIVING SET**

One standard blood administration set may be used to administer 2-4 units of red cells or 8-10 in an emergency situation, provided the flow rate remains adequate and the set is changed at least every 8 hours.

However if flow rate is impeded or subsequent transfusions are delayed, the administration set needs to be changed at the completion of each red cell transfusion. This is due to the risk of bacterial contamination.

### **VOLUMETRIC INFUSION PUMPS**

Current literature finds no evidence that peristaltic pumps cause red cell damage. Blood can be transfused through a Volumetric infusion pump and/or gravity fed, using the appropriate blood giving set for the method with a standard blood (170-200 um) filter.

(I.e. Grazeby volumetric infusion pumps require a McGaw product compatible transfusion giving set (170-200 um) filter)

### **SYRINGE DRIVERS**

A syringe infusion pump is recommended for neonate and paediatric transfusions, where the transfused volume is less than 60 ml.

**Note** This blood **must still be filtered (170-200 micron filter)**, either while being aspirated into the syringe or with a suitable in line filter fitted to the syringe.

(a 170-200 micron Baxter paediatric blood giving set, with 3 way tap is available)

For leucocyte filtering refer to leucocyte depleting policy as well as Irradiation requirements.

**NORTH and NORTH WEST REGION**

**TRANSFUSION OF BLOOD AND BLOOD COMPONENTS**

**Clinical Indicators**

**All Launceston General Hospital Clinical Staff compliant with the policy**

Blood Transfusion Nurse and Dept. of Haematology responsible for:

- a) monitoring and evaluation of the policy
- b) development and revision of the policy

**Unit Manager or Department Heads are accountable for compliance with the policy.**

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**Performance Indicators:** Blood Transfusion Nurse will be responsible for evaluating the level of efficiency/effectiveness through annual audits in administration and observations and following up and reporting to EIMS and STIR any occurrence of a transfusion incident.

**Review Date:** Dec 2011

**Developed By:** Dr Michael Beamish, Dr A Khalafallah, Clinical Haematologists, Dawn Richardson, Leeanne Turner, Blood Transfusion Nurse North & North West Blood Transfusion Team Pathology Department LGH

**Stakeholders:** Launceston General Hospital, CEO Primary Health Care, North

**AUTHORISED BY CHIEF EXECUTIVE OFFICER**

.....  
**Dr John Kirwan**

.....  
**Date**