Blood and Blood Products Policy

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Purpose

Pre transfusion compatibility. Before any prescription for a blood component or some blood products can be issued the patient's blood group needs to be determined, then the details are registered into the New Zealand Blood Service (NZBS) electronic blood management system.

To ensure the right patient is identified using the correct procedure.
To ensure the Group & Screen (G&S) is correct, and the right blood component is issued.

Scope/Audience

- Registered Medical Practitioners
• Registered Nurse Practitioners
• Registered Midwives
• Registered Nurses where local policy permits
• IV technicians

Associated documents
Request for Blood Bank Tests & Blood Components or Products form (NZBS 111F018)

Procedure

Complete the Request for Blood Bank Tests & Blood Components or Products form (111F018)

• the information required includes Patient's full given names (not initials or preferred names)
• patient's date of birth, NHI number, ward and hospital consultant
• sticky labels are permitted on this form
• tests required
• number and type of blood components that may be required, including any special requirements such as irradiated or fresh components
• indication for transfusion and the patient's diagnosis
• relevant patient history regarding recent transfusion or pregnancy and antibodies. Should this section be left incomplete or 'do not know', it must be assumed that these events occurred
• printed name (legible) and signature of the requesting practitioner

Collection of blood sample

• a 6 mL (EDTA) pink top tube is required for any test performed by Blood Bank
• only one patient must be bled at a time
• only one staff member is responsible for completing the whole of this procedure
• correct identification of the patient is based on asking the patient to state their surname, given name and date of birth when judged capable of giving an accurate, reliable response. Inpatients and day patients must wear an identification wristband. Outpatients should provide proof of identity.
• check that the details on the patient’s identification wristband match those on the request form and the patient’s response.
• handwrite the patient’s full name, date of birth and/or NHI on the blood sample tube at the patient’s side
• sticky labels are NOT permitted on samples for Blood Bank
• the person taking the blood sample signs, dates and adds the time to both the form and the sample. Details on both form and sample tube must be identical
• complete the declaration on the form

Procedural Considerations

• avoid taking the sample from the limb with an IV infusion
• urgent requests: If the need for blood is urgent, telephone Blood Bank (80310) to alert them of the need and the imminent arrival of the sample request
• sample labelling discrepancy: If a form/sample is received by Blood Bank that does not meet the identified requirements, the person who took the sample will be contacted to come to Blood Bank to correct the required information. If this person is not available, or the in the case of a major discrepancy, the sample will be discarded and Blood Bank will request a repeat sample

Sample Validity

<table>
<thead>
<tr>
<th>Details stated on the ‘Request for Blood Component/Product’ form (111FO18)</th>
<th>Sample validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transfusion of red cell or platelet component within last 3 months.</td>
<td></td>
</tr>
<tr>
<td>• Pregnant or has been pregnant within the last 3 months.</td>
<td></td>
</tr>
<tr>
<td>• Request form does not clearly exclude the above.</td>
<td>72 hours</td>
</tr>
<tr>
<td>• No history of transfusion, current pregnancy or pregnancy within the last 3 months.</td>
<td>7 days</td>
</tr>
<tr>
<td>• No history of transfusion, current pregnancy or pregnancy within the last 3 months</td>
<td></td>
</tr>
<tr>
<td>• AND the date and the time of the elective procedure are stated on the request form.</td>
<td>21 days</td>
</tr>
<tr>
<td>• The 21 day option is ideal for pre admission clinics. This option must be clearly indicated on the request form.</td>
<td>21 days</td>
</tr>
</tbody>
</table>
References

Australian and New Zealand Society of Blood Transfusion Ltd. (ANZSBT). 2011. (2nd ed.). Guidelines for the Administration of Blood Products *

Note: Title of the guidelines has changed from Components to Products to reinforce that policy and procedures for administration apply to both fractionated products and blood components. (p.7).
**NZBS form 111F018**

**REQUEST FOR BLOOD BANK TESTS & BLOOD COMPONENTS OR PRODUCTS**

<table>
<thead>
<tr>
<th>Step 1. Patient Details</th>
<th>Complete steps 1-4 in full</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family name</td>
<td>DOB</td>
</tr>
<tr>
<td>Given names</td>
<td></td>
</tr>
<tr>
<td>If a NEONATAL Specimen</td>
<td></td>
</tr>
<tr>
<td>please also provide:</td>
<td></td>
</tr>
<tr>
<td>Mother's Name</td>
<td>Mother's NHN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2. Indication for Transfusion and Relevant History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis/Indication for Transfusion</td>
</tr>
<tr>
<td>Relevant History: this determines specimen validity period.</td>
</tr>
<tr>
<td>- Validity: 7 days for Group A, B, AB, O, RhD positive.</td>
</tr>
<tr>
<td>- Validity: 3 months for Group O, RhD negative.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3. Blood Bank Test and Component / Product Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the request is URGENT, please phone Blood Bank</td>
</tr>
<tr>
<td>Group &amp; Antibody Screen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 4. Specimen Collector Declaration</th>
</tr>
</thead>
<tbody>
<tr>
<td>The patient details on the specimen tube MUST be hand-written by the collector.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE OF COLLECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Name:</td>
</tr>
<tr>
<td>Mandatory:</td>
</tr>
<tr>
<td>Must be signed in box 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THIS SECTION FOR LABORATORY USE ONLY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname:</td>
</tr>
<tr>
<td>First name(s):</td>
</tr>
<tr>
<td>Anti-A</td>
</tr>
<tr>
<td>Anti-B</td>
</tr>
<tr>
<td>Anti-C</td>
</tr>
<tr>
<td>Anti-D</td>
</tr>
<tr>
<td>Rh positive</td>
</tr>
<tr>
<td>Rh negative</td>
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<tr>
<td>AI</td>
</tr>
<tr>
<td>At cells</td>
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<tr>
<td>S cells</td>
</tr>
<tr>
<td>Blood Group:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Sign:</td>
</tr>
<tr>
<td>Historical Information:</td>
</tr>
<tr>
<td>Antibody(s):</td>
</tr>
<tr>
<td>Multi-site record:</td>
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<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
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<td>Last transfusion:</td>
</tr>
<tr>
<td>Pre-test check by:</td>
</tr>
<tr>
<td>Sample validity:</td>
</tr>
<tr>
<td>Second group required?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
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<table>
<thead>
<tr>
<th>Poly IgG</th>
<th>C5b-9</th>
<th>O</th>
<th>Comments &amp; Transfusion Protocols:</th>
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<td>Date:</td>
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<td>Sign:</td>
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<table>
<thead>
<tr>
<th>Donation number</th>
<th>Product</th>
<th>Group</th>
<th>Expiry</th>
<th>ABO type</th>
<th>RhD</th>
<th>Date</th>
<th>Sign</th>
<th>Issue</th>
<th>Date</th>
<th>Time</th>
<th>Sign</th>
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The latest version of this document is available on the CDHB intranet/website only.

Printed copies may not reflect the most recent updates.
Informed Consent for Transfusion

Purpose
To ensure that the patient has understood the risks, benefits, costs and alternatives, and has provided written consent prior to the procedure of transfusion of blood components and/or fractionated products.
To the patient has been provided written and verbal information as part of the consenting process.

Scope
- Medical Officers
- Registered Nurse Practitioners
- Midwives for Anti D Immunoglobulin

Associated Documents
- Agreement to Treatment (QMR002A)
- Informed Consent for Anti-D (WHD9652)
- NZBS leaflets ‘Your Guide to Transfusion’. All available from Blood Bank and in bulk from CDHB Hospital Stores
- Fresh Blood Components (111I011)
- Albumex®4 and Albumex®20 (111I012)
- Anti-D Immunoglobulin (111I004)
- Blood Coagulation Factor Concentrates (111I014)
- Intravenous Immunoglobulin Intragam® P (111I010)
- Normal / Hepatitis B /Tetanus/Zoster Immunoglobulin (111I 013)
- DHB Policy
- Informed Consent – Clinical Policies and Procedures

Procedure
- Consent (with the exception of an emergency) must be obtained prior to ordering any blood components/fractionated products from Blood Bank.
- All competent patients must receive sufficient information regarding transfusion to give informed consent and sign the relevant consent form, either:
• Agreement to Treatment (QMR002A) at the 'Blood or Blood Product Transfusion' section
• WHD9652 Informed Consent for Anti-D.
• Patients should be informed of the indication for the transfusion, the risks and benefits involved and the right to refuse the transfusion. An appropriate patient information leaflet supplied by NZBS should be given to the patient to aid in this consent process.
• In an emergency situation or for non-competent patients a condensed consent process may be required. The Agreement to Treatment form (QMR002A) is completed at the 'Decision to treat by attending Medical Practitioner' section.

Procedural Considerations

• Consent validity. Patients consenting to blood components/fractionated products do so for the course of their treatment e.g. this may be for a period of years for a haematology patient. However, if a blood component/fractionated product is required for an unrelated condition, a new consent is required.
• Refusal of Blood Transfusion. Patients, who do not wish to have blood components and some fractionated products, should be treated according to the patient's own beliefs. An individual management plan should be agreed upon by the patient and Senior Medical Officer(s) responsible for providing care for the patient prior to treatment commencing.
• Jehovah's Witnesses. The Hospital Liaison Officer is available to support both the patients and the staff within the current legal framework.

Hospital Liaison Officer: Mark Proctor, Mobile 027 435 3237
Reference: CDHB Consent Policy

Prescriptions for Blood Components / Fractionated Products

Purpose

Blood component and fractionated products are classified as prescription medicines.

To provide accurate, clear instructions.
Scope

- Medical Officers
- Registered Nurse Practitioner within their prescribing scope of practice
- Midwives for Anti D Immunoglobulin

Associated Documents

- IV Fluid Prescription Chart QMR004B
- Drug Treatment Sheet QMR004
- Chemotherapy Medication Chart C260070
- Blood/Blood Product Transfusion Record C260051

Procedure

A prescription for a blood component / fractionated product is prepared by the medical officer using an IV Fluid Prescription Chart QMR004B, or a Drug Treatment Sheet QMR0004 if the product is administered intramuscularly.

The prescription must specify

- The blood component / fractionated product to be administered including any special requirements e.g. irradiation.
- Route to be administered.
- Quantity to be given ( e.g. units, mL, grams)
- Duration of the transfusion (hours or parts of a hour)
- Special instructions e.g. premedication or diuretic
- Each item signed and dated (not one signature and brackets)

Procedural Considerations

CDHB transfusion guidelines are compliant with both the Australia and New Zealand (ANZSBT) Inc. and New Zealand Blood Service (NZBS) recommendations. Decision to transfuse should be based on the NHMRC ‘Patient Blood Management Guidelines.’

Refer to the Blood Resource Website on the CDHB intranet/ Fluid and Medication Manual (Volume 12)/ Blood and Blood Products section for specific component/fractionated product, transfusion, and storage, equipment and administration guidance.

Alternatively the Transfusion Medicine Handbook is available from Blood Bank or electronically www.nzblood.co.nz/clinical.

Document the rationale for the transfusion in the patient’s clinical notes.
References

The Medicine Act 1981, Medicines Regulations 1984
Medicines (Designated Prescriber: Nurse Practitioners) Regulations 2005
National Health & Medical Research Council ‘Patient Blood Management Guidelines 2010
Nursing Council of New Zealand: Competencies for the nurse practitioner scope of practice: December 2012

Issuing Procedure

Purpose

To ensure the right blood component / fractionated product is issued to the right patient
To ensure the appropriate blood component or fractionated product has been selected for transfusion to the intended recipient
Keeping accurate sequential records that provide a transparent audit trail.
To check that the blood component / fractionated product is safe to use.

Scope

- IV Certificated Registered Nurses
- IV Certificated Registered Midwives
- IV Certificated Registered Nurse Practitioners
- Anaesthetic Technicians
- Medical Officers
- Authorised Laboratory Staff

Associated Documents

- QMR022A ‘Resuspended Red Cells Transfusion Sheet’ for blood only.
- QMR022B ‘Blood Components/Blood Products’ for the remaining fresh blood components and all fractionated blood products
Procedure

This procedure depends upon the location and whether there is a NZBS Blood Bank or blood refrigerator from which to collect blood components / fractionated products.

Some checks are performed by NZBS Blood Bank staff, whereas in other locations authorised personnel are responsible for all stages of the procedure.

Issuing Forms

- QMR022A ‘Resuspended Red Cells Transfusion Sheet’ for blood only.
- QMR022B ‘Blood Components/Blood Products’ for the remaining fresh blood components and all blood products

The transfusion should start within 30 minutes of issue from Blood Bank.

Before requesting the blood component/ fractionated product, ensure that the:

- prescription is charted
- consent is obtained
- the patient has a patent vascular access if this is the method of administration
- an infusion device or fluid warmer is available if clinically indicated

An authorised person completes either the QMR022A or QMR022B form after checking the prescription.

Details required include

- Full ID label or handwritten details from the Agreement to Treatment form (QMR0002).
- Requested by
- Patient’s present location for the delivery of the component. E.g. OT 16, X-Ray
- The patient’s blood group, followed by the signature of the person transcribing this information. (If this information is not already on the QMR022A/QMR022B, it can be found on Health Connect South, or the NZBS Group and Screen Report in the patient’s notes or by contacting Blood Bank.)
At the Blood Bank or Blood Fridge

At the Christchurch Hospital site, blood components/fractionated products can be issued to and delivered by a:

- Registered Nurses
- Registered Midwives
- Registered Nurse Practitioners
- Anaesthetic Technicians
- Medical Officers
- Enrolled Nurses
- Hospital Aides or Orderlies

The Lamson tube system is also used for requesting and issuing blood components/fractionated products.

In Hospitals that have a ‘Blood Fridge’ there are procedural instructions beside the Blood Fridge. Additional paperwork is required so that Blood Bank is informed that the blood or fractionated blood product has been removed from supplied stock.

The following personnel are authorised to perform the procedure of issuing blood or blood products:

- IV Certificated Registered Nurses
- IV Certificated Registered Midwives
- IV Certificated Registered Nurse Practitioners
- Anaesthetic Technicians
- Medical Officers
- Authorised Laboratory Staff

- To avoid confusion and possible administration error, only one unit of a blood component is issued at a time per patient.
- Patient identity and blood group details.
- Check the patient’s identification details on the blood bag and bag label against the details on the transfusion sheet (QMR022A or QMR022B).

Check

- Patient’s full name
- Date of birth
- NHI number
- Blood group
• Sign in the appropriate boxes on the QMR022A / QMR022B form

• Check blood component bag or fractionated product unit(s). Check the blood component bag or fractionated product unit(s) for colour, consistency, and expiry date. Plasma will have an expiry date and time label to check. Also inspect for leaks. Notify Blood Bank if concerned. Sign in the appropriate box on the QMR022A form

• Complete the form. Enter the blood component unit/ fractionated product number, date and time of issue as required on the QMR022A/QMR022B form.

Procedural Considerations

Note: Original forms should be sent to Blood Bank.

This is to avoid duplication of records. If a request for issue is faxed to Blood Bank, the issued blood component/ fractionated product will be returned to the requesting area with the faxed form. This faxed form now supersedes the original form. Any information, checks or signatures MUST NOT be transcribed onto the original.

Blood Components. This is the term used for separated cellular elements such as: Resuspended Red Cells, Cryoprecipitate, Platelet (pool or apheresis) and Fresh Frozen Plasma.

Figure 1: NZBS Component Compatibility Label
Fractionated Blood Products

This is the term used for plasma derived fractionated blood products and equivalent recombinant products. They are manufactured in a highly regulated environment. Products are frequently upgraded with the incorporation of new safety or purification steps.

Reference: NZBS. Distribution and Supply of Plasma Derived Fractionated Blood Products & Recombinant Products in New Zealand. (160P002)

This refers to plasma derived fractionated products such as:

- Albumex 20% or 4%
- Antithrombin III (Thrombotrol-VF)
- C1 Esterase Inhibitor (Berinert)
- Factor VIII (Biostate)
- Factor IX (MonoFIX-VF)
- Factors II, IX & X (Prothrombinex-VF)
- Immunoglobulin (eg Hepatitis B, Anti-D, Tetanus or Zoster)
- Intravenous Immunoglobulin (Intragam P)
- Subcutaneous Immunoglobulin (Evogam)

Figure 2: NZBS Product Label
Administration of Blood Components and Fractionated Products

Purpose
To ensure that the correct patient receives the correct blood component/ fractionated product at the correct time at the correct rate and the prescribed dose.
To monitor the patient closely to detect a potential adverse reaction.

Scope
- Registered Nurses
- Registered Midwives
- Registered Nurse Practitioners
- Anaesthetic Technicians
- Medical Officers
- Enrolled Nurses where local policy permits

Associated documents
- Transfusion Sheet either QMR022A or QMR022B
- Prescription chart QMR004B or QMR004
- Fluid Balance Chart C000887 or appropriate to unit
- Adult Observation Chart C280010
- Child Observation Charts C280011A to E
- Patient Identification Policy – Clinical policies and procedures
- Roles and Responsibilities Policy – Fluid & Medication
- Fluid and Medication Checking Procedure – Fluid & Medication
- Basic Infection Prevention and Control Principles Related to Fluid and Medication Therapy – Fluid & Medication

Procedure - Double Independent Checking at the Patient’s Side
Two authorised personnel are involved with all the stages of this procedure, one of whom should be the nurse caring for the patient and who will be responsible for monitoring the patient from the commencement to the finish of the transfused unit bag or product.
(Fluid and Medication Checking Procedure – Fluid & Medication)

Check consent. Check that there is a valid completed consent form. Both staff sign the ‘Check 3: ‘Consent’ box on the QMR022A/QMR022B form.
Adhere to infection control principles (Basic Infection Prevention and Control Principles Related to Fluid and Medication Therapy: Volume 12).

Check specific instructions regarding the blood administration e.g. fluid warmer. Blood Bank will indicate if a blood warmer is to be used.

Prepare equipment. Ensure that the tubing is primed.

Explain the procedure to the patient where appropriate.

Check patient identification. No Wristband – No Transfusion
At the patient’s side, ask the patient to state their full name and date of birth. Confirm the patient’s identity wristband details, (the identity wristband must be clearly readable), including family and given names in full, NHI number and date of birth against the:

- Transfusion sheet either QMR022A or QMR022B
- IV Fluid Prescription Chart (QMR004B) or Drug Treatment Sheet (QMR004)
- Blood component/ fractionated product label

Both staff sign ‘Check 4: Patient ID’ box on the QMR022A/QMR022B form.

Check prescription.
Check the blood component/ fractionated product with the IV Prescription Chart (QMR004B) or the Drug Treatment Sheet (QMR004).

- Check for correct:
  - Blood component / fractionated product, e.g. resuspended red cells
  - special requirements, e.g. irradiated
  - quantity
  - rate of infusion

  Enter unit number or batch number together with date and time beside the prescription. Both checkers sign the document.
Check the blood component/ fractionated blood product label against either the:

- Resuspended Red Cells Transfusion sheet (QMR022A)
- Blood Components / Blood Product Transfusion Sheet (QMR022B)

Check:
- patient’s full name, NHI number and date of birth
- ABO group and Rh type (check compatibility tables below)
- batch number/unit number
- expiry date on the bag/unit
- colour and consistency of the blood component/fractionated product
- Both staff sign ‘Check 5’ on either the QMR022A or QMR022B
- Any discrepancies noted during the administration checking process must be reported to Blood Bank immediately before proceeding with the transfusion. Blood Bank will advise on action.

Baseline observations
Temperature, pulse, respiration rate and blood pressure, are taken. Document on the appropriate observation chart (e.g. C280010). This applies to all blood components and fractionated products.

Blood Component
Mix by gently rotating the bag before administration.

Fractionated Product
Refer to product inserts for instructions.

Administration
Follow procedures as for administration of IV Fluids or intramuscular injection. Procedural considerations that support safe transfusion practice can be found at the end of this section.

Document time
The transfusion started on the QMR022A or QMR022B and the prescription, to ensure that the transfusion will finish within the recommended timeframe – time begins from time of issue from Blood Bank.
Commence

The transfusion at a reduced rate for the first 15 minutes. Stay with the patient and monitor closely during this period to detect early signs of reaction or incompatibility to the blood component or fractionated product.

Patient monitoring

Record temperature, pulse, blood pressure and respiratory rate (in addition to pulse oximetry) as follows for each component or product being transfused:

- 15 minutes from commencing the transfusion
- 30 minutes from commencement
- then at hourly intervals
- and when the transfusion is completed
- more frequently if the patient’s condition gives cause for concern

Document the transfusion

Document on the fluid balance chart (C000887) and in the patient’s clinical notes. Document the patient’s response, any signs or symptoms outside normal limits that occurred, and actions taken.

Transfusion completed

The top section of the label remains attached to the blood component / fractionated product during the transfusion to enable confirmation that the transfusion is to the correct patient. On completion of the transfusion, remove the top section of the blood component/blood product label and attach to the back of either the QMR022A or QMR022B. Record the time the transfusion was completed in the space provided on the QMR022A or QMR022B and sign.

Used blood bags

Are disposed of in the yellow bio-hazard waste bag. Clinical areas may apply a local policy, keeping blood bags for 24 hours in case a reaction occurs.

Procedural Considerations

Safe Transfusion Practice depends upon the following recommendations.
Overnight transfusion
Overnight transfusions should only occur as essential transfusions in emergency or high dependency / intensive care areas.
All routine transfusions should be completed by 22:00 hours.

Assessing the patient
Clinicians should document the rationale for the transfusion in the patient's clinical notes. The patient should be reassessed after each unit of resuspended red cells to avoid inappropriate transfusions. E.g. check the patient’s haemoglobin and symptoms.
Reference: CDHB Hospital Transfusion Committee Campaign: “Why transfuse two when one will do?” (2013).

Time constraints
A transfusion of fresh blood components must be commenced within 30 minutes of issue. If more than 30 minutes have elapsed and the blood component is still required by the patient, contact Blood Bank for advice. Notify Blood Bank if the blood component, which is no longer required, has been kept at room temperature for longer than 30 minutes.
All blood components/ fractionated products must be infused within four hours of issue. Follow fractionated product reconstitution and storage guidelines for infusion times.

Storage
Blood components must only be stored in an actual blood fridge.
Platelets should never be refrigerated.

Giving sets and filters
Blood Components. All ‘fresh’ blood components (re-suspended red cells, fresh frozen plasma, platelets and cryoprecipitate) are leucodepleted during processing and only require a blood giving set with a 170-200 micron filter.
One administration set may be used for the administration of 2-4 units of red blood cells provided the flow rate remains adequate. In a massive transfusion situation, 8-10 units may be transfused before the set is changed providing that the set is changed every 8 hours.
Due to the risk of bacterial contamination, administration sets should be changed on completion of the red cell transfusion or every 8 hours.

Platelets should only be administered through a new blood giving set.

Fractionated Blood products do not require a blood giving set with filter. Refer to product insert with the fractionated product; usually filters are supplied if required.

**Compatible intravenous solutions**

A multi lumen access device is safe for the continuous co administration of other therapeutic solutions. In all other circumstances:

Use only 0.9% sodium chloride for injection

Do Not Use:

- 5% Dextrose solution (may induce haemolysis)
- Lactated Ringer's (contains calcium ions, which may induce clot formation in the blood bag and/or administration set).

**Priming the line**

A blood giving set can be primed with normal saline.

**Flushing the line: Blood Components**

Normal saline can be used to flush the IV line after the transfusion has been completed. It is not necessary to flush the IV line in between units however if a delay is expected a 0.9% sodium chloride 100ml bag can be used if there is a delay between receiving units.

**Flushing the line: Fractionated Products**

Refer to the Peripheral Intravenous Therapy Policy (Volume 12) for flushing instructions post infusion

**Medications**

- Do not add any medications to any blood component/fractionated products
- Opioids may be administered simultaneously using a dedicated PCA pump

**Discarding Blood that has been Primed Through a Giving Set**
Once the bag has been spiked and if the blood has not passed through the cannula then it is not regarded as transfused. Inform Blood Bank so that the electronic blood management system records can be amended. The clinical area should discard the blood bag into a yellow bio-hazard waste bag. The unit is regarded as transfused even if a few mL of blood has passed through the cannula.

**Pumps**

Approved electromechanical infusion devices may be used for transfusions. Pumps should not be necessary for platelet or fresh frozen plasma transfusions due to the rate that they are transfused.

**Fluid warmers**

Only in certain circumstances, such as massive or exchange transfusion or when a patient has significant cold reactive antibodies (‘cold agglutinins’), will a fluid warmer be required when administrating blood components. Only an approved monitored warming system must be used. Blood Bank will indicate if the use of a fluid warmer is required.

**Compatibility**

Re-suspended red cell and platelet units

<table>
<thead>
<tr>
<th>Recipient group</th>
<th>Compatible donor group</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A, O</td>
</tr>
<tr>
<td>B</td>
<td>B, O</td>
</tr>
<tr>
<td>AB</td>
<td>A, B, AB, O</td>
</tr>
<tr>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Fresh Frozen Plasma

<table>
<thead>
<tr>
<th>Recipient group</th>
<th>Compatible donor group</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A, AB</td>
</tr>
<tr>
<td>B</td>
<td>B, AB</td>
</tr>
<tr>
<td>AB</td>
<td>AB</td>
</tr>
<tr>
<td>O</td>
<td>O, A, B, AB</td>
</tr>
</tbody>
</table>

**Special Circumstances**

Emergency O negative blood is issued when a valid Group and Screen is not available and the patient requires a blood transfusion.
urgently. Emergency O negative blood is issued on the receipt of a QMR022A form. Patient details are required which includes those unknown patients who have been allocated a temporary NHI number and name. A group and screen is still required as soon as practicable.

Verbal Prescriptions
In some circumstances in Theatre or Emergency Department, a blood component/fractionated product may be prescribed verbally in which case the transfusion must be in the presence and direct supervision of the prescribing Medical Officer. In these circumstances, the QMR004B/QMR004 must be completed by the prescribing Medical Officer retrospectively.

References
ANZSBT. (2011). Guidelines for the Administration of Blood Products. (2nd ed.).
NZBS Blood Transfusion Therapy-Blood Component & Blood Product Administration (Poster NZBCL121)

Adverse Transfusion Reactions

Purpose
To provide advice and guidance on the clinical management of an adverse transfusion reaction to either a blood component or a fractionated product.
To ensure that reporting of adverse blood component transfusion reactions are forwarded to the national Haemovigilance scheme and reviewed by the Hospital Transfusion Committee.

Scope
- Registered Nurses
- Registered Midwives
- Registered Nurse Practitioners
- Medical Officers

Associated Documents
Transfusion – related adverse reaction notification form
NZBS111F009
Transfusion Related Adverse Event Notification Form
NZBS111F042

Notification of Suspected Adverse Reaction to a Fractionated Blood Product form NZBS111F003

Procedure - Adverse reaction to a blood component

- Complete the NZBS form ‘Notification and Investigation of Adverse Transfusion Reaction Form’ (NZBS 111F009 see below).
- The reverse side of this form (NZBS 111F009 see below) offers guidelines on the clinical management of all adverse reactions to blood components including appropriate blood tests based on the signs and symptoms presenting during the adverse event.
- Return the blood bag with infusion line to Blood Bank together with the required specimens to conduct an investigation.
- Transfusion-Related Adverse Event Notification Form” (NZBS 111F042) should be held in the clinical area but are also available from Blood Bank. The follow-up will be completed by the Transfusion Nurse Specialist or the Transfusion Medicine Specialist.

Adverse Reaction to a Fractionated Blood Product

In the unusual event of an adverse reaction to a blood product notify Blood Bank immediately. The Notification of Suspected Adverse Reaction to a Fractionated Blood Product form (111F003) can be obtained from Blood Bank.

Procedural Considerations - Blood Bank will:

- Recheck the blood group of the patient and the unit
- Complete a DAT and re-cross match
- Re screen for red cell antibodies
- And, when appropriate, arrange for specialised microbiological cultures
Special methods are required to obtain microbiological samples from a unit, if sepsis is suspected.
- If a patient reacts to more than one unit, or has a severe reaction, it is essential that investigations are performed promptly. Blood Bank may provide modified blood after appropriate investigations.
- For any severe transfusion reaction and any special transfusion requirements, contact the Transfusion Medicine Specialist /
Haematologist immediately. Blood Bank will contact the Consultant on call.

Reference

http://www.nzblood.co.nz/Clinical-information/Transfusion-medicine/Adverse-reaction-reporting-and-management

Blood Resource Website: CDHB, Fluid and Management Policies and Procedures
## Transfusion related adverse reaction notification form

### Transfusion -related Adverse Reaction Notification Form

**Patient Details**

<table>
<thead>
<tr>
<th>Patient NH: DOB: Gender: Surname: Given Names:</th>
<th>Hospital: Ward: Consultant:</th>
</tr>
</thead>
</table>

**Transfusion Details & Clinical History**

<table>
<thead>
<tr>
<th>Date of transfusion</th>
<th>Time transfusion started</th>
<th>am / pm</th>
<th>Time adverse reaction noticed</th>
<th>Volume transfused</th>
<th>mL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reaction occurred during/following: (please circle)</th>
<th>Red Cells</th>
<th>Platelets</th>
<th>Fresh Frozen Plasma</th>
<th>Cryoprecipitate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Please contact Blood Bank for advice. A Fractionated Product Reaction form is required.

<table>
<thead>
<tr>
<th>Donation number(s) of unit(s) transfused.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient’s diagnosis &amp; other relevant medical/surgical history.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Will further blood component support be required in the next 24 hours?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Signs and Symptoms**

<table>
<thead>
<tr>
<th>Observations prior to transfusion:</th>
<th>Temp:</th>
<th>Pulse:</th>
<th>BP:</th>
<th>RR:</th>
<th>O₂ sat:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations at time of reaction:</td>
<td>Temp:</td>
<td>Pulse:</td>
<td>BP:</td>
<td>RR:</td>
<td>O₂ sat:</td>
</tr>
</tbody>
</table>

Please circle relevant symptoms listed below & provide details:

- **Febrile:** Chills / Rigors / Flushing
- **Allergic:** Urticaria Isolated / Extensive Non-urticarial rash Anaphylaxis
- **Respiratory:** Dyspnoea / Wheeze / Stridor / Pulmonary oedema / Cough / Hypoxaemia
- **Circulatory:** Raised JVP / Hypertension / Arrhythmia / Hypotension
- **Pain:** Chest / Loin / Abdominal / Infusion site / Other:
- **Restlessness / Anxiety**
- **Patient under anaesthesia:** Yes / No / Unknown
- **Red urine:** Yes / No / Unknown
- **Chest X-ray changes:**

Comments/other signs and symptoms::

Please record any investigations undertaken at the bedside: (see overleaf for indications and guidance)

- Unit/infusion set to Blood Bank EDTA to Blood Bank FBC, Film, Coag screen to Haem Other: U&E, haptoglobin, bilirubin, LDH +/- ABGs to Biochem Blood cultures to Micro Ward urinalysis for Hb

Clinical advice is available when adverse transfusion reactions occur. Contact numbers can be obtained via blood bank.

**Reported by:** Date: Contact Number/Pager: 111F00902 09/09

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The latest version of this document is available on the CDHB intranet/website only. Printed copies may not reflect the most recent updates.

Authorised by: EDON & CMO
Page 24 of 36
Issue Date: December 2015
Page 24 of 36
Be reviewed by: December 2018
Immunoglobulin Products

Purpose
To ensure the safe intravenous administration of Intragram P and enable early identification of side effects should they occur

Scope
- Registered Nurses
- Registered Midwives
- Registered Nurse Practitioners
- Medical Officers

Associated documents
- Immunoglobulin Products IntragramP, Privigen, Evogam Patient Information Leaflet
- Approval for immunoglobulin Intragram®P, Privigen® (IVIg) and Evogam®(SClG) (NZBS 111F075 available from Blood Bank)
- IVIG Information
- Blood Component/Blood Product Transfusion Sheet QMR022B
- Fluid Prescription Chart QMR 004B
- Blood/Blood Product Transfusion Record C260051
- Fluid Balance Chart C000887 or appropriate to unit
- Adult Observation Chart C280010
- Child Observation Charts C280011A - E
- Consent Form QMR022A

Procedure
- Referring to the prescription, complete the required details on the Blood Component /Blood Products Sheet QMR022B and send to Blood Bank
- For paediatric areas, Intragram P is only to be administered on a morning or day shift
- Intragram P is to only to be administered using an infusion pump.
- For paediatric areas use a standard paediatric giving set with a butretil to administer Intragram P
- On receipt of the Intragram P allow it to stand for approximately one hour to allow it to reach room temperature before administration
• Follow checks described in the ‘Administration of Blood Component and Fractionated Products’ section. Especially note the batch numbers of the stock issued, check expiry date

• Check the liquid in the vial of Intragam P is clear. Notify Blood Bank if cloudy, contains foreign bodies or sediment

• Monitoring of the patient is identical to that listed in ‘Administration of Blood Component and Blood Products’

• Perform the principles of hand hygiene. Remove the cap on the vial and swab the rubber bung with a chlorhexidine and alcohol swab

• Take care not to shake or agitate the bottle(s). This high protein blood product will easily froth if agitated and will create air bubbles in the IV tubing. Screw the spike of the giving set into the largest indentation in the bung of the vial of Intragam P. (Insert a long filtered airway needle into a small indentation in the bung if this is not incorporated into the IV giving set)

• Two authorised registered nurses are to check that the initial & subsequent titrated dose rates (as prescribed) are entered correctly on the infusion pump

• The rate of the infusion should be as follows:

For Adults

• The infusion is commenced at 1mL/minute and if no reaction after 15 minutes, the rate may be gradually increased at 15 minutes intervals to a maximum of 4mL/minute = 240mL/hr. Subsequent bottles of the same batch number can be infused at the maximum rate tolerated.

For Paediatrics

• Children receiving their first infusion should have the rate commenced at 1 mL/kg/hr for the first 15 minutes. If no adverse reaction occurs during this timeframe the rate can be gradually increased by 1 mL/kg/hr increments at 15 minute intervals as tolerated up to a maximum of 3 to 4 mL/kg/hr. The following table gives an indication of rate for weight.

• There may be some circumstances where Intragam P is required to be administered over a longer period of time than what the below table of rates indicates i.e. where a child may have cardiac compromise such as with Kawasaki’s Disease. In such cases clarify with the prescriber the time the infusion is to be run over if not clear within the prescription provided.

• Guardrails are to be used for the infusion of Intragam P within paediatric in-patient/outpatient areas.
<table>
<thead>
<tr>
<th>Weight</th>
<th>Starting Rate</th>
<th>Next 15 Minutes</th>
<th>Next 15 Minutes</th>
<th>Until finished</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 kg</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>10 kg</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>15 kg</td>
<td>15</td>
<td>30</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>20 kg</td>
<td>20</td>
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<td>60</td>
<td>80</td>
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<td>75</td>
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</tr>
<tr>
<td>30 kg</td>
<td>30</td>
<td>60</td>
<td>90</td>
<td>120</td>
</tr>
<tr>
<td>40 kg</td>
<td>40</td>
<td>80</td>
<td>120</td>
<td>160</td>
</tr>
</tbody>
</table>

For children ≥ 50 kg follow the rate of infusion outlined for adults

The infusion pump volume to be infused is set for no more than two hours to avoid the risk of fluid volume overload.

- When the infusion has been completed, flush the IV line with 30mL Normal Saline 0.9% (refer to the Peripheral Intravenous Therapy Policy, Volume 12). Remove the top section of the label accompanying each bottle and attach to the reverse side of form QMR022B recording the time the bottle was completed. Date and sign
- In the clinical notes, document that the infusion was administered and any observed side effects or adverse reactions
- If any stock of Intragam®P has been unused, return to Blood Bank immediately for safe storage.

**Procedural considerations**

**IMPORTANT**

Intragam®P is a blood product used for specific clinical conditions only. Authorisation from the NZBS Transfusion Medicine Specialist (TMS) is required prior to the issue of Intragam®P for a new user.

The TMS can also offer advice regarding the appropriate dosage based on the patient’s weight and diagnosis. Prior to the commencement of treatment, the Medical Officer is requested to send a blood sample to determine the patient’s blood group. This information is necessary should any adverse reaction arise.
Clinical indications. Intragam®P is a Normal Immunoglobulin produced from human plasma and is suitable as the treatment for a number of recognised conditions.

These include:

- Immunodeficiency syndromes, e.g. Common Variable Immunodeficiency Disorder (CVID), Severe Combined Immunodeficiency (SCID).
- Secondary Immunodeficiency, e.g. AIDS, Chronic lymphatic leukaemia or following bone marrow transplant.
- Autoimmune disorders, e.g. Guillain-Barre Syndrome, Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) and Idiopathic Thrombocytopenic Purpura (ITP).

Prescription Dose. The dose is rounded to the nearest bottle of either 3 grams/50 mLs or 12 grams / 200 mLs Intragam®P.

For Paediatrics: Infusion rates should be calculated and prescribed in mL/kg/hr. The prescription should include the calculation showing the total dose in grams and volume in mLs per hour to be infused.

- Seek advice from the Transfusion Medicine Specialist (TMS) in the instance of:
- Previous adverse reactions to a human immunoglobulin preparation.
- IgA deficiency.
- Pregnancy, discuss treatment with the patient’s midwife/maternity carer.

Side Effects. There are a number of potential side effects related to the administration of Intragam®P. These are usually associated with the rate/volume of the infusion due to the inflammatory mediators present. These include:

- Headache, fever, chills, flushing, pallor, nausea, vomiting, abdominal pain, non-urticarial rash, chest tightness and dyspnoea.

Reducing the rate of the infusion or stopping the infusion briefly for 5-10 minutes before slowly recommencing can provide relief of symptoms.

Some patients complain of side effects up to 24 hours after receiving Intragam®P, e.g. fatigue

Adverse reactions. Hypersensitivity to the Immunoglobulin may occur. Adverse reactions include:
Fluid and Medication
Blood and Blood Products Policy

- urticaria, bronchospasm, hypotension and anaphylaxis.
- In these situations, stop the infusion and seek urgent medical advice. Notify Blood Bank immediately of any adverse reaction.
- Rare adverse reactions are aseptic meningitis and acute renal dysfunction.

Observations/Monitoring
- Baseline TPR/BP (up to one hour prior)
- Always observe the patient closely for the first 15 minutes
- Repeat TPR/BP every 15 minutes for the first hour, twice in the next hour, then hourly for the duration of the infusion.

References
NBA. (2012). Criteria for the clinical use of intravenous immunoglobulin in Australia. (2nd ed.).
NZBS. Intragam®P Datatsheet: 160S001
NZBS 2008 Transfusion Medicine Handbook

Subcutaneous Immunoglobulin (Evogam)

Purpose
To provide awareness that there is a subcutaneous immunoglobulin (Evogam) alternative to the intravenous immunoglobulin IntragamP.

Pre-approval of new patients receiving Evogam® is required by the NZBS TMS. Please see the pre-approval form and Evogam datasheet in the associated documents section for more information on Evogam.

Associated Documents
Approval for Intragam P (IVIg) and Evogam (SCIg) form. (NZBS 111F075 available from Blood Bank)
NZBS: Evogam Datasheet: 160S017

More information:
Evogam is a medication prescribed in specialised areas such as Immunology and Haematology. Staff working in these areas can find comprehensive professional and patient information on the Blood Resource Website.
Mix2Vial System

Purpose
To provide guidelines for the efficient reconstitution and administration of fractionated products which are prepared by using a Mix2Vial system.

At present these blood products are limited to:
- Antithrombin (Thrombotrol-VF)
- C1 Esterase Inhibitor (Berinert)
- Factor VIII (Biostate)
- Factor IX (MonoFIX-VF)
- Factors II, IX & X (Prothrombinex-VF)

Scope
- Registered Nurses
- Registered Midwives
- Registered Nurse Practitioners

Associated documents
Your Guide to Blood Transfusion - Blood Coagulation Factor Concentrates (NZBS leaflet 111I014)
CDHB Fluid and Medication Manual/ Blood and Blood Products
Blood Resource Website

Procedure
- Remove the water for injection vial, the vial of freeze dried product, and the Mix2vial system from the box. Do this for all of the boxes that have been issued. Place the vials on a flat surface in a row, remove the caps and swab with an alcohol swab. Allow 30 seconds for the caps to dry before step 2.
- Remove the paper lid from the Mix2vial. Holding the water vial firmly on a flat surface, push the blue cap straight down into the water vial (blue topped vial). Repeat steps 1 and 2 for multiple vials.
- Holding the vial of water with the Mix2vial attached, invert so that the clear cap is over the vial of product standing on the bench.
Holding the vial of product firmly on a flat surface, push straight down so the clear cap punctures into the product vial. The water will automatically be drawn onto the freeze dried powder.

- Gently rotate the vial so that the powder reconstitutes. Do not shake. Repeat step 3 for the remaining vials.
- Remove the vial of water and the blue cap by twisting away from the bottle.
- Using a large syringe, attach to the clear cap and draw up the solution from the product vial. There is a filter in the clear cap which will remove any particulates.
- Attach the syringes to a syringe driver or administer by a slow push. Multiple vials can be drawn up into one syringe.

Connect the caps into the vials vertically with the vial held securely on a hard, flat surface. The vacuum may fail if inserted at an angle.

DO NOT SHAKE the reconstituted product. Products using a Mix2Vial set are fractionated from plasma. The high protein content means that by shaking the bottle in an attempt to dissolve the powder, a frothy solution will be created. Wait for the bubbles to disperse before drawing up into a syringe.

The product should be at room temperature (20-30°C) before administration.

Choose a syringe or several large syringes to accommodate the total amount of solution.
- Prothrombinex-VF, MonoFIX-VF and Thrombotrol-VF are infused at the rate of 3mL per minute. Use immediately after reconstitution.
- Berinett is infused at 4mL per minute. Use immediately after reconstitution or return to Blood Bank.
- Biostate is infused over a 5 minute period or as tolerated by the patient. Use immediately or within 3 hours of reconstitution.

References

http://www.nzblood.co.nz/Clinical-information/Transfusion-medicine/Health-professionals-medicine-datasheets/Coagulation-factors


Patient Specific Emergency Blood Box

Purpose

To provide staff with a system of obtaining multiple units of issued Emergency O negative or patient specific blood supplied from the Blood Bank and delivered to the patient’s bedside.

Typically used for patients who are experiencing a large haemorrhage and who need blood delivered in quantity because of the risk of exsanguination.

The ‘Patient Specific Emergency Blood Box’ differs from the Massive Transfusion Protocol (MTP) which applies to a situation where the criteria for activation is critical bleeding AND shock or coagulopathy.

Scope

The Patient Specific Emergency Blood Box system can ONLY be initiated by staff in the Emergency Department, the Operating Theatres (Christchurch and Christchurch Women’s), the Intensive Care Unit, the Cardiothoracic Intensive Care Unit of Christchurch Hospital and the Birthing Suite in the Christchurch Women’s Hospital

The process may involve any of the following staff groups:
- Medical Staff
- Nurses/Midwives
- Registered Nurse Practitioners
- Anaesthetic Technicians
Fluid and Medication

Blood and Blood Products Policy

- Orderlies & Hospital Aides (runners)
- New Zealand Blood Services Staff

Associated Documents
QMR022A – Resuspended Red Cells Transfusion Sheet
Request for Blood Components or Blood Products form (NZBS 11F018)

Procedure
- A medical decision is made that multiple units of blood are required immediately for an individual patient.
- Establish that the patient has a valid group and screen blood sample.
- If screening tests have not been completed on the cross match sample, ‘group compatible only blood’ can be issued. If no group and screen blood sample available then ‘emergency O negative’ blood can be issued.
- If requested, upon receipt of the QMR022A form, (Resuspended Red Cells Transfusion Sheet) the Blood Bank can send one unit of blood STAT via the Lamson Tube.
- Telephone Blood Bank on 80310 and request a Patient Specific Emergency Blood Box.
- Inform the Blood Bank of the:
  - Identity and NHI number of the patient requiring the blood and brief information on the patient’s diagnosis and condition
  - Number of units required
  - Name of the staff member(s) who will act as the first Guardian of the Box
  - Confirm how the blood should be sent, i.e. whether a staff member will collect the blood or if it is to be delivered
  - The exact location for the delivery of the box e.g. Theatre 1, Birthing Suite, Theatre 27
  - The Blood Bank will organise delivery of the Box
  - Send a QMR022A form via the Lamson Tube with the Requested by’ column signed and indicating the number of units that are required.

The Box will be labelled by the Blood Bank staff with the:
- Patient’s name
- NHI number

The latest version of this document is available on the CDHB intranet/website only.
Printed copies may not reflect the most recent updates.
• Time the Box was packed
• Latest time by which the transfusion of all units must be completed
• The named Box Guardian(s) and the location of the delivery
• The Blood Bank staff will complete checks 1 and 2 on the QMR022A. The form will be placed in the Box with the blood.

On receipt of the box, the Guardian acknowledges by initialling the label on the outside of the box.

Remove the QMR022A form from the Box and check that the patient ID on the outside of the box matches that on the form.

Adhere to the procedure ‘Administration of Blood Components and Blood Products’

Return the Box as soon as practicable.

Procedural Considerations

• Guardian will be the person who is responsible for overseeing the safe management of the Patient Specific Emergency Blood Box. Normally this will be an IV Certified Registered Nurse / IV Certified Nurse Practitioner, Midwife, Anaesthetic Technician, or Medical Officer.

• Exception: In the Operating Theatre, the Box is to be delivered to the Theatre Coordinator. This person will then hand it over to the staff member who will oversee the management of the blood from the Box. The Theatre Coordinator may not hold an IV Certificate.

• Currently 2-6 units can be issued per box.

• Blood and Blood Products cannot be issued without a completed QMR022A/ QMR022B respectively. Faxed versions of the QMR022A/ QMR022B may create confusion, so original copies of the form are preferred.

• Any unit of blood unused within 30 minutes of issue cannot be reissued, return blood components to Blood Bank promptly if not required.

• The Emergency Box does not contain ice or coolant, therefore the contents of the box must be transfused within the four hours from the time the Box was packed. All unused blood after the four hour time limit is returned to the Blood Bank with the section on the box marked ‘for disposal’ ticked.

• The Patient Specific Blood Box system is designed so that the Box can move with the patient if they change locations, e.g. Emergency Department to Radiology to Operating Theatre to ICU or Ward.
At all times there must be a suitably qualified person identified as the Guardian of the Box. When this person changes, a handover is given and the new person’s name is entered on the outside of the Box. The Box must always be handed to a person.

- Label from ‘Patient specific emergency box’

**Emergency Blood Box**

<table>
<thead>
<tr>
<th>Patient Name:</th>
<th>NHI Number:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Issued:</th>
<th>Date:</th>
<th>Time:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Must be transfused by:</th>
<th>Date:</th>
<th>Time:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>1&lt;sup&gt;st&lt;/sup&gt; Box Guardian:</th>
<th>Sign on receipt:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Box Guardian:</th>
<th>Sign on receipt:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Box Guardian:</th>
<th>Sign on receipt:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td></td>
</tr>
</tbody>
</table>

536L905a01
Measurement or Evaluation

NZBS auditing programme feedback
Canterbury and West Coast IV Clinical Practice Observation Audits
Incident Management System

<table>
<thead>
<tr>
<th>Procedure Owner</th>
<th>CDHB Hospital Transfusion Committee Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure Authoriser</td>
<td>Chief Medical Officer &amp; Executive Director of Nursing</td>
</tr>
<tr>
<td>Date of Authorisation</td>
<td>15 December 2015</td>
</tr>
</tbody>
</table>