

Massive Transfusion Protocol - Adult

Purpose

To provide staff with a system of rapidly delivering blood components from the Blood Bank to the patient's bedside when the Massive Transfusion Protocol (MTP) has been activated

MTP is initiated for - massive bleeding AND shock or coagulopathy

Scope

The MTP is initiated by a Medical Officer. The MTP is a complex set of concurrent processes which require effective leadership within a functioning multidisciplinary team

The process may involve any of the following staff groups:

- Medical Staff
- Nursing Staff / Midwives
- Anaesthetic Technicians
- Operating Theatre Assistants (OTA's)
- Hospital Aides
- Orderlies
- New Zealand Blood Services Staff

1. Procedure

1. Use the Adult MTP Checklist to correctly initiate and activate the Massive Transfusion Protocol. Make sure you tell the switchboard and Blood Bank exactly where the MTP patient is located.

2. **INITIATE the MTP.** Phone 777 and state "This is an MTP, my location is..." See the MTP Checklist.

The call will:

- Page an Orderly who will go directly to Blood Bank to collect an MTP box/blood and deliver it to the patient location.

Theatres: An OTA will collect MTP box/blood from Blood Bank and deliver it to the relevant Waipapa (including IR hybrid theatres), Women's and Parkside Theatres between 0700 - 2300hrs. The OTA will continue to run between Theatres and Blood Bank until the MTP is ceased.

From 2230 - 0700hrs an Orderly will deliver MTP boxes/blood to Theatres. Orderlies will deliver blood to the relevant theatre door rather than the theatre holding bay, to reduce delays.

OTA's covering Theatres 38-42 will carry a dedicated MTP cell phone (021354378) and will be notified by the switchboard when an MTP is initiated from theatre suites. You do not need to call them directly unless there is a problem.

Birthing Suite, ED & ICU: Runners/Hospital Orderlies will deliver MTP boxes/blood to the relevant clinical area.

- Page the relevant Associate Charge Nurse Manager - Theatres, ICU, ED or Birthing Suite Coordinator. The Duty Anaesthetist will also be paged.

- For other areas the Clinical Emergency Team will be activated.
 - Page Blood Bank staff who will prepare to receive an activation call and call in extra laboratory staff if required.
3. **ACTIVATE the MTP.** Call Blood Bank 80310 and say, "I am activating the MTP".
- Provide Blood Bank with required information as per [MTP-Adult Checklist and Flowchart.pdf](#) ref: 2401534 including the name of the nominated Guardian who will take responsibility for the blood components and MTP boxes.
 - Clarify if Blood Bank have a valid pre-transfusion (group and screen) sample result for the patient - if not send a EDTA (pink tube) patient blood sample to Blood Bank immediately. Emergency blood can be issued until testing is complete.
 - Complete a QMR022A form with the number of emergency issue red blood cell components required to sustain treatment for 20 minutes (usually 1-3 units) AND
 - Complete a QMR022A and QMR022B form requesting issue of MTP Box 1.
 - **Fax ALL THREE forms** at once to Blood Bank (80159 or pre-programmed).
4. Blood Bank staff will then prepare the blood. Each MTP box will be labelled with the -
- Number of the box ie. MTP box 1
 - Patient's full name
 - NHI number
 - Time the units were packed into the MTP box
 - The name of the identified Guardian and location for delivery
- Blood Bank staff will complete checks 1 and 2 on the QMR022A/QMR022B forms and return these with the emergency blood and blood components in the MTP box. This form is then used clinically, for transfusion administration checks and documentation to complete the 'Record of transfusion'.
5. Once the MTP box/blood is delivered, the MTP box/blood becomes the responsibility of the nominated Guardian whose role is to monitor return and expiry timings, and to oversee transfusion administration and documentation. The Guardian should request regular patient updates from the Clinical Lead to review the patient haemodynamic status and on-going blood requirements. This information needs to be communicated to Blood Bank staff and can be used to modify MTP box contents to specific patient needs or make the call to pause/cease the MTP.
6. Send the Orderly/OTA back to Blood Bank to collect the next box.
7. Remove the QMR022A & QMR022B forms from the MTP Box and check that the patient ID on the outside of the Box matches that on the forms.
8. Select and remove one blood component unit at a time. Remaining blood should be left in the MTP box until needed. Two staff members confirm the details on the patient's ID bracelet match the details on the QMR022A/B form (Check 4). Adhere to the procedure 2403050 [Blood-and-Blood-Products-Policy.docx](#) .

9. **When bleeding is controlled - inform Blood Bank immediately.** Communicate with Blood Bank staff that the MTP has ceased and return any MTP boxes together with unused blood components to Blood Bank immediately with an Orderly or Runner.

2. Procedural considerations

Guardian of the MTP Boxes

The Guardian is the nominated person responsible for overseeing the safe management of the MTP Boxes and massive transfusion of blood components. This must be a suitably qualified health professional, normally an IV Certified Registered Nurse/ Anaesthetic Technician, or Medical Officer.

Exception: In the Operating Theatre, MTP boxes may be delivered to the Theatre Coordinator who will pass the boxes over to the Guardian. The Theatre Coordinator may not hold an IV Certificate.

Forms

Blood and Blood Products cannot be issued from Blood Bank without completed QMR022A/B forms clearly identifying the patient and location eg. "A3" or "A3 PCU", ED Resus1. These forms allow for blood to be issued from Blood Bank and clinically provide a Record of Transfusion.

Fax QMR022A/ QMR022B forms to Blood Bank (80159 or pre-programmed)

- **Emergency Issue Blood:** Complete a QMR022A identifying "Emergency Blood" and the number of units required. This form will be returned with the emergency blood.

Note: Only trained Emergency Department staff can access the critical O negative red blood cells from the Waipapa Blood Fridge. [See Emergency Blood Fridge: O negative Blood Issuing](#)
Ref: 2407869

- **MTP Box 1:** A second QMR022A form is required for issue of red blood cells in MTP box 1 - write **MTP BOX 1** on this QMR022A form. On a QMR022B form write **MTP BOX 1** for issue of plasma components. These forms will be returned for clinical use with the MTP box/blood components.
- Ensure the 'requested by' box has been signed on all three forms

It is not necessary to send more forms for further MTP boxes. Blood Bank will make a copy of the original forms and record MTP Box 2, 3, 4 etc. for further issues.

All forms with any original administration signatures or compatibility (swing) labels must be retained in the patient records as the Record of Transfusion.

Contact Blood Bank directly for any changes needed to the quantities or mix of components in each box.

Return of stock

Return unused blood components to Blood Bank within 30 minutes of issue if not required so blood can be returned to Blood Bank stock.

Time constraints

MTP boxes do not contain ice or coolant. All issued blood and components must be transfused within 4 hours of issuing or returned to the Blood Bank.

Changing patient location

The Massive Transfusion Protocol is designed so that the MTP box can move with the patient e.g. Emergency Department to Radiology to Operating Theatre to ICU or Ward.

The MTP box must always be handed to a suitably qualified health professional. When a patient changes location and a new MTP Guardian is appointed, a handover should be provided including the type and number of units remaining in the box, the time these units expire and any recent communication with Blood Bank staff. Any units identified as unnecessary should be returned to Blood Bank at this time, if not already done so.

Blood Bank must be notified if the patient's location changes and/or the Guardian of the MTP box changes as soon as possible by the new Guardian.

Communication with Blood Bank

Initiation of the MTP requires frequent communication with Blood Bank because as one box is issued, staff will begin preparing (thawing components) for the next MTP box. Information on the patient's condition and the rate that boxes are required will influence the eventual wastage of blood components.

The Transfusion Medicine Specialist (TMS) on call will be notified by the Blood Bank when MTP box 4 is issued, or earlier if requested. Blood Bank can provide the contact details of the TMS.

When MTP Box 2 is issued the MTP Clinical Lead will be contacted by Blood Bank for a progress report.

Example of Label on MTP Box

Patient Name: <input type="text"/>	Box number: <input type="text"/>	1. MTP box alarm clock rings: If alarm rings = return contents to Blood Bank by runner within 10-minutes to stop waste* Ask medical team leader to assess: ? Do we need these blood / components? ? TxA given yet? <i>(* return within 30 minutes of issue time – If in doubt: return newest units first, i.e. last box to arrive)</i>	2. Communicate with Blood Bank Call on 80310 – to inform of: ✓ Pause or cease preparation of next box ✓ Units being returned ✓ Transfer of patient – give new location ✓ Change of guardian name
Patient NHI: <input type="text"/>	Issued at: <input type="text"/> : <input type="text"/> h		
Patient location: <input type="text"/>			
Guardian name: <input type="text"/>			
Ref:	Authoriser:		Issue Date:

Supporting material

[Massive Transfusion Protocol MTP Checklist and Checklist](#) Ref: 2401534

Request for Blood Components or Blood Products form (NZBS 111F159)

QMR022A – Resuspended Red Cells Transfusion Sheet ref: 2401690 Oracle 264562

QMR022B – Blood Components / Blood Products Transfusion Sheet ref: 2403338 Oracle 264589

Blood Policy – Blood Components Ref: 2408293

Blood Policy - Pre-transfusion Ref: 2408295

Emergency Blood Fridge: O negative Blood Issuing Ref: 2407869