## ORDERING BLOOD PRODUCTS

### 3 PATHWAYS

<table>
<thead>
<tr>
<th>TYPE</th>
<th>TURNAROUND TIME</th>
<th>ORDER</th>
<th>CLINICAL GUIDELINES</th>
<th>PRODUCT</th>
<th>DELIVERY SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROUTINE</td>
<td>&lt; 30 minutes if no antibodies</td>
<td>EPIC</td>
<td>✓ HEMODYNAMICALLY STABLE PATIENT</td>
<td>AS ORDERED</td>
<td>TUBE SYSTEM</td>
</tr>
</tbody>
</table>
| FASTBLOOD     | < 15 minutes    | CALL 4-2012 To ACTIVATE FastBlood 4+2  
“One and done” ⇒  No need to deactivate | ✓ URGENT NEED  
✓ ESTIMATED / PREDICTED ACUTE BLOOD LOSS > 750 mL  
✓ HEART RATE > 100 bpm  
✓ SYSTOLIC BP < 100 mm Hg  
✓ ABC TRAUMA SCORE 0 OR 1 | 4 RBC  
2 FFP  
NOT RECURRENT ONE AND DONE | ALL IN ONE COOLER  
Delivered by Transportation |
| MTP           | < 15 minutes to first cooler | CALL 4-2012 To ACTIVATE MTP  
CALL 4-2012 To DEACTIVATE MTP | ✓ EMERGENT NEED  
✓ ESTIMATED / PREDICTED ACUTE BLOOD LOSS > 1500 mL  
✓ HEART RATE > 120 bpm  
✓ SYSTOLIC BP < 90 mm Hg  
✓ ABC TRAUMA SCORE 2 OR GREATER | 1st COOLER  
4 RBC  
2 FFP | ALL IN ONE COOLER  
Delivered by Transportation  
2nd and SUBSEQUENT COOLERS  
6 RBC  
4 FFP  
1 PLT  
1 CRYO  
• RED CELLS – in one cooler  
• FFP – in other cooler  
• PLT – IN HAND (not in cooler)  
• CRYO – about every other round – IN HAND (not in cooler)  
○ Cryo is stored frozen, so it must be thawed before it is ready |

**ACTIVATE MTP** – Initiates the MTP
Blood Bank will begin to process blood products for MTP

**DEACTIVATE MTP** – Stops the MTP Process
Blood Bank stops processing products for MTP

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**Call Center 4-2012 to Activate FASTBLOOD 4+2 or MTP**
Give the Call Center the following information:
✓ Patient Name
✓ Age (under or over 12 yrs)
✓ Medical Record #
✓ Ordering doctor – PIC #
✓ Location of Patient

**Activating an MTP / FB4+2 indicates an emergent / urgent need:** Upon activation, Blood Bank staff stops working on routine patients and focus exclusively on getting blood out to the MTP / FB4+2 patient. **PLEASE USE WISELY.**
FIRST COOLER – SAME AS Fast Blood 4+2
SECOND AND SUBSEQUENT COOLERS
6 RBC
4 FFP
1 PLT
1 CRYO (about every OTHER cooler; not pictured)

• RED CELLS – in one cooler
• FFP – in other cooler
• PLT - IN HAND (not in cooler)

4 RBC
2 FFP
NOT RECURRENT

• Ice **packs** on both sides
• Ice **bags** on top

Blood Tubing/Filters on top of all

• Ice **packs** on both sides
• Ice **bags** on top of blood products
• Blood Tubing/Filters on top of all
Ordering Blood and Blood Products:

Matching blood products for your patient’s transfusion needs

Authors:
James Gorham, MD PhD
Terry Libby, RN, TSO
August 2017
ORDERING BLOOD/BLOOD PRODUCTS

3 PATHWAYS

• Routine - Epic
• FastBlood 4+2
• Massive Transfusion Protocol (MTP) – Replaces “Blood Alert”
Routine - Epic

Ordering through Epic is the best way to order blood for the vast majority of patients.

Use this pathway for:

✓ Stable patients
✓ Routine ordering of blood products
  • Hemodynamically stable
  • Not actively bleeding
Benefits of Routine Ordering through Epic

- Specific components can be ordered based on patient need
- Blood can be ordered for a specific time
- Blood is fully cross-matched to your individual patient
- Most efficient utilization of limited resources
- Best choice for stable patients
For which patients should you consider activating FastBlood 4+2?

**Urgent need - Your patient exhibits:**

- Estimated/predicted acute blood loss > **750 mL**
- Heart rate > **100 bpm**
- Systolic BP < **100 mm Hg**
- Trauma: **ABC score of 0 or 1**
Remember:
These are **Guidelines**

**Guidelines do not supersede your clinical judgment**
To ACTIVATE FastBlood 4+2

Call the Call Center 4-2012

✔ Call 4-2012 to ACTIVATE FastBlood

✔ Provide the Call Center with:
  ✔ Patient Location
  ✔ Ordering Physician- PIC #
  ✔ Patient Name
  ✔ Medical Record Number
FastBlood 4+2

When a FastBlood is activated the Blood Bank / Transfusion Medicine Service will prepare and send one cooler with:

- 4 Units Red Blood Cells (RBC)
- 2 Units Fresh Frozen Plasma (FFP)

- Will not be recurrent

- FastBlood 4+2 = One and Done
For which patients should you consider activating the MTP?

**Emergent need for the hemorrhaging patient**

- Estimated/predicted acute blood loss \( > 1500 \text{ mL} \)
- Heart rate \( > 120 \text{ bpm} \)
- Systolic BP \( < 90 \text{ mm Hg} \)
- Trauma: ABC score of 2 or greater
What is the ABC score for trauma patients? How can the ABC score be used to help me decide between FastBlood 4+2 versus MTP?

<table>
<thead>
<tr>
<th>Criteria:</th>
<th>If YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED Systolic BP ≤ 90?</td>
<td>+1</td>
</tr>
<tr>
<td>ED HR ≥ 120?</td>
<td>+1</td>
</tr>
<tr>
<td>Positive FAST Exam?</td>
<td>+1</td>
</tr>
<tr>
<td>Penetrating Trauma?</td>
<td>+1</td>
</tr>
</tbody>
</table>

If the score is:
- 2 or more → MTP
- 0 or 1 → FastBlood 4+2
Trauma patients
On line tool
https://www.mdcalc.com/abc-score-massive-transfusion
Remember:
These are **Guidelines**

Guidelines do not supersede your clinical judgment
New Terminology
FastBlood and MTP

ACTIVATE
BEGINS FastBlood and MTP

DEACTIVATE
ENDS MTP
TO ACTIVATE MTP

Call the Call Center 4-2012

✓ Call 4-2012 to ACTIVATE MTP
✓ Provide the Call Center with:
  ✓ Patient Location
  ✓ Ordering Physician – PIC #
  ✓ Patient Name
  ✓ Medical Record Number
  ✓ If patient <12 yrs old, Age and Weight
Blood Bank Response to MTP Activation

What happens in the Blood Bank when the MTP is activated?

- MTP signifies to the Blood Bank Techs that there is a hemorrhaging patient who is in a life threatening situation and in need of emergent blood products

- **Blood Bank Techs** turn their full attention exclusively to getting the first and subsequent coolers ready to go to transportation for delivery to the bedside

- Preparing multiple products is given the highest priority by Blood Bank Techs using their full resources

- **This intensity** of blood product preparation in the Blood Bank **will continue until MTP is Deactivated**
MTP
Product Volume and Delivery

<table>
<thead>
<tr>
<th>FIRST COOLER</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 RBC</td>
</tr>
<tr>
<td>2 FFP</td>
</tr>
<tr>
<td>All in One Cooler</td>
</tr>
</tbody>
</table>

- Delivered In Hand, not in Cooler
- ~ every other cooler
- 1 CRYO
- Stored Frozen, so it must be thawed (~15 minutes)
- Delivered In Hand, not in Cooler
- Sent with or after 2nd Cooler
- ~ every other Cooler
## MTP Product Volume and Delivery

<table>
<thead>
<tr>
<th>FIRST COOLER</th>
<th>SECOND and SUBSEQUENT COOLERS</th>
</tr>
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<tbody>
<tr>
<td>4 RBC</td>
<td>6 RBC</td>
</tr>
<tr>
<td>2 FFP</td>
<td>4 FFP</td>
</tr>
<tr>
<td>All in One Cooler</td>
<td>1 PLT</td>
</tr>
<tr>
<td></td>
<td>• Delivered In Hand, <em>not</em> in Cooler</td>
</tr>
<tr>
<td></td>
<td>• ~ second cooler and thereafter</td>
</tr>
<tr>
<td></td>
<td>1 CRYO</td>
</tr>
<tr>
<td></td>
<td>• Stored Frozen, so it must be thawed (~15 minutes)</td>
</tr>
<tr>
<td></td>
<td>• Delivered In Hand, <em>not</em> in Cooler</td>
</tr>
<tr>
<td></td>
<td>• ~ by about the third round</td>
</tr>
</tbody>
</table>
Delivery of Coolers by Transportation

Coolers Will Be Delivered to Patient Location by Transportation

- **Fast Blood 4+2**
  - Transportation:
    - Reports to Blood Bank
    - Picks up One Fast Blood 4+2 Cooler
    - Delivers One Cooler to Patient Location
    - Task is Done and Resumes Regular Work
Coolers will be Delivered to Patient Location by Transportation

- **MTP/ Blood Alert**
  - Transportation:
    - Reports to Blood Bank
    - Picks up First Cooler (same as Fast Blood 4+2)
    - Delivers the First Cooler to Patient Location
    - Returns to Blood Bank
    - Picks up Second Round of Coolers 6-4-1
    - Delivers Second Round of Coolers to Location
    - Continues to go Back and Forth from Blood Bank to Current Patient Location Delivering Subsequent Rounds 6-4-1
    - Continues this Task Until the MTP is Deactivated
Change in Patient Location

• During the course of an MTP patient’s location can change
  – Patient may move from one area to another for appropriate level of care
    • For example ED, IR, OR, CT, ICU

• **Call 4-2012 to update the call center as to patient’s location**

  • The Call Center then Sends out an Updated Text Message with Patient’s New Location
  • This will Ensure that Transportation Delivers the Coolers to the Appropriate Patient Location
Signing for the Coolers
Fast Blood 4+2 and MTP

Transportation will Deliver Cooler(s) to the Patient Location Indicated on the Text Page and Request a Signature on the Activation Form

- Staff Receiving the Cooler(s) Will Sign to Accept Upon Arrival For Fast Blood and MTP
- In Addition for MTP Only:
  Clinical Team Checks Off Frequency of Coolers Based on Patients Needs
  - Q 15 Min, Q 30 Min, HOLD, DEACTIVATE
Signing for the Coolers
Fast Blood 4+2

FAST BLOOD
ACTIVATION FORM

Date: ___________________ Age: 0 – 11 years □
Patient Name: ___________________ 12+ years □
Medical Record Number: ___________________ (Read back for accuracy)
Requesting Doctor’s Name: ___________________ PIC: ___________________
Location for Delivery – Floor & Rm #: ___________________ (Read back for accuracy)
Blood Bank Fax: 982-0140 Blood Bank Phone: 924-2273
Read to requesting doctor: You will only receive one cooler of blood products.

BLOOD BANK STAFF MEMBER RELEASING BLOOD: (Print) ___________________
TRANS笼罩: (Print) ___________________
UNIT STAFF MEMBER ACCEPTING BLOOD DELIVERY: (Print) ___________________

TRANSPORTATION INSTRUCTIONS BELOW

An elevator key can be borrowed from Blood Bank (it’s hanging in the window)
# Massive Transfusion Protocol (MTP) / Blood Alert Activation Form

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Patient Name</td>
<td></td>
</tr>
<tr>
<td>Medical Record Number</td>
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</tr>
<tr>
<td>Blood Bank Fax - 982-0140</td>
<td></td>
</tr>
<tr>
<td>Blood Bank Phone – 924-2273</td>
<td></td>
</tr>
<tr>
<td>BLOOD BANK STAFF MEMBER RELEASING BLOOD</td>
<td>(Print)</td>
</tr>
<tr>
<td>TRANSPORTER</td>
<td>(Print)</td>
</tr>
<tr>
<td>UNIT STAFF MEMBER ACCEPTING BLOOD DELIVERY</td>
<td>(Print)</td>
</tr>
</tbody>
</table>

### TRANSPORTATION INSTRUCTIONS BELOW

An elevator key can be borrowed from Blood Bank (it’s hanging in the window).

1. When you arrive at the location say “Here is the blood for _______.“ (Read medical record number from above). Whoever takes the blood from you must sign the form. If the patient has moved to a different area, find out where and go to that area. If OR is the location, go to the control desk. If no one is at the control desk, page 1371 (OR charge nurse).

2. Have the nurse ask the activating physician to indicate the current need for additional blood products:
   - Q15 – additional coolers every 15 minutes
   - Q30 – additional coolers every 30 minutes
   - Hold – will call the blood bank for additional blood products
   - Cancel – call 4-2012 to cancel the Blood Alert
What do I get? FB vs MTP?

Clinical Team Activates **MTP** you will get:
- Round 1: 4 RBCs and 2 FFP (4+2)
- Round 2 and Subsequent Coolers:
  - 6 RBCs, 4 FFP, 1 Platelet (platelet in hand outside the cooler)
  - Cryo sent with second round (in hand outside the cooler)
  - 6-4-1 will be **recurring** until Deactivation

Clinical Team Activates **Fast Blood** you will get:
- One cooler 4 RBCs, 2 FFP, 4+2
- **Not recurring**- One and done

Clinical Team Activates **Fast blood 4+2 then Activates MTP on the same patient**:
- Round 1 **and** subsequent coolers of MTP:
  - 6 RBCs, 4 FFP, 1 Platelet 6-4-1. Cryo to follow
Deactivating the MTP

Once blood products are no longer required

- Notify the Call Center 4-2012 to **Deactivate** the MTP
- Blood Bank will stop processing blood products
- Place a request in Epic for Transportation of Equipment
- Transportation will pick up and deliver any remaining coolers back to blood bank
Expected Turn Around Times

• Routine – Typically under 30 minutes*
  • If there are no RBC antibodies and no component modifications
  • Provided the blood bank has a Type and Screen sample (valid for 72 hours)
  • Type and Screen samples expire at 0700 on the 3rd day after collection

• FastBlood 4+2 – Typically 15 minutes

• MTP – Typically 15 minutes for first cooler
Summary

- Use **Routine- Epic** ordering for *non-urgent* stable not actively bleeding patients

- Use **FastBlood 4+2** for *urgent* need for an actively bleeding unstable patient

- Use **MTP** for *emergent* need for a hemorrhaging unstable patient
Questions?
Contact

• Dr. James Gorham
  – Medical Director, Blood Bank and Transfusion Medicine Services

• Tom Brady
  – Blood Bank Manager

• Terry Libby RN
  – Transfusion Safety Officer