Sutter Health
Sutter Roseville Medical Center

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Policy Area:	*Lab - Transfusion Service*
References:	
Applicability:	*Sutter Roseville Medical Center*

Emergency Release, Uncrossmatched, and Massive Transfusion Protocol (MTP) for Adults/ Pediatrics and Neonates

PURPOSE

To supply a process for providing blood products in emergent situations when pre-transfusion testing has not been completed.

DEFINITIONS

Emergency release: Any volume of blood product (RBC, plasma, platelet, cryoprecipitate) issued prior to all pre-transfusion testing being performed

a. Order code **ERUXM** (adult) or **INFUXM** (unborn/neonate) for RBCs
b. Order codes for remaining products are standard order codes (TPLT, TFFP, TCRYP, etc)

Uncrossmatched: Emergency released RBCs issued prior to electronic or serological crossmatch performance

Massive Transfusion Protocol (MTP): response to blood product demands of a rapidly bleeding patient that has the potential to need total blood volume replacement within minutes to hours—8 to 10 units for an adult

PRODUCT SELECTION

Product Requested	Female ≥51 years old or Male	Female ≤50 years old	Unborn/Neonate
RBC	O positive	O negative	• O negative **ONLY** • IRR • CMV negative • ≤7 days from irradiation
Plasma	AB or A (single) A or AB IRR liquid plasma (LIQP) for ***MTP ONLY***		AB
Platelets	Any group (A or AB preferred)		*AB (preferred) or A*
Cryoprecipitate	Any group (pre-pooled units)		

POLICY

General

- Clinicians may request that blood products be issued before pre-transfusion testing is completed when a delay in transfusion may jeopardize life.
- Transfusion Services (TS) will maintain the following pre-prepared packs of blood products for emergency use, complete with temperature indicators affixed and at least two unit number stickers available on each product. Red cell packs must contain a labeled segment for each unit in the pack:
  - 6 pack of O pos RBC (for 1st round of MTP in cooler)
  - 6 pack of O neg RBC (for 1st round of MTP in cooler)
  - 6 pack of O pos RBC (for 2nd round in MTP in cooler)
  - 2 pack of O pos RBC (for two-unit uncrossmatched order)
  - 6 pack of prepared plasma products (fresh frozen AB or A)
- Liquid plasma will be kept in the HaemoBank refrigerator ONLY.
  - LIQP must be tagged with "FOR MTP ONLY" labels
  - LIQP will be left in the HaemoBank refrigerator until the unit(s) expire.
- Type A single fresh frozen plasma may be used in the event that single AB fresh frozen plasma inventory cannot support emergent need. Use AB single plasma first, before switching to type A plasma.
- If a specimen is not yet available, request a properly identified specimen to be drawn immediately.
  - Testing of pre-transfusion specimen must be completed as soon as possible
- An order for emergency release products will be initiated verbally and will be followed up by an Epic order as soon as possible by the clinician or RN acting under the clinician's orders.
  - An order for emergency uncrossmatched blood release, which includes physician justification for the emergency action, must be placed in the hospital electronic health record (EHR-Epic) and electronically signed by the patient's physician, regardless of whether units were transfused or not
  - In the event that the ERUXM or INFUXM order is discontinued in Epic prior to reconciliation in Sunquest (SQ):
    - TS CLS will be responsible for placing the order via SQ with the modifier ";Original order discontinued via Epic prior to reconciliation"
- Emergency release products are to be allocated and delivered within **10 minutes** of verbal order.
- Once an emergency release order is received, continue to keep ahead requested number of units unless/ until order is changed or alternate instructions are given by the clinician/RN.
- All routinely required pre-transfusion testing must be performed prior to issuing type specific RBC and plasma products.
  - Type specific blood products **MUST NOT** be issued on the basis of a single blood type or previous records alone
- Order for emergency released units will supersede historical need for specialty products.
- Patients with **current or historical clinically significant antibodies** will require clinician notification immediately upon discovery. Clinician notification is to be documented as a BBC in the emergency release order accession and consent is to be documented by completion of *Request for Issue of Uncrossmatched Blood* manually.
  - Verbal authorization will serve as a signature until document can be signed
- Type specific blood products are to be labeled as such and given as soon as all routine pre-transfusion testing is completed in order to conserve universal donor inventory.
  - Patient blood type are required to be documented on type specific emergency release tag and issue log upon switching to type specific RBCs or plasma

- Document all pertinent communications surrounding emergency release event as **BBC** in accession and/or on *Uncrossmatched/MTP Call Log.*
- The *Request for Issue of Uncrossmatched Blood* form will be used in lieu of an Epic order during downtime.

Massive Transfusion Protocol (MTP)

- **PRODUCTS**:
  - Initial pack of 6 RBC and 6 single plasma products will be delivered in MaxPlus MTP Cooler, followed by subsequent rounds in 6:6:1 ratio (RBC:plasma:PLT)
    - The 1st round to the Trauma Bay following activation of the Haemobank refrigerator will start with 6:6:1 ratio (RBC:plasma:PLT)
  - Keep ahead of 6:6 ratio for RBCs and single plasma products will be maintained until documented discontinuation of need
  - Cryoprecipitate will be ordered by the clinician on an as-needed basis
  - Up to 4 units of type A or AB irradiated liquid plasma may be used for MTP ONLY
  - Jumbo FFP are **not to be used** during MTP except in instances of complete lack of single plasma products in inventory
  - Do not mix equilibrated plasma with freshly thawed plasma. When thawing products, thaw 6 plasmas at a time to maintain ratio and to avoid mixing of refrigerated and warm plasma
- **DELIVERY**: TS will deliver the first round to all areas.
  - *TS will deliver* all subsequent rounds to the *OR/IR (second floor)* and *L&D* when notified that the next round is needed.
  - *ED, TNI, and ICU* will *pick up* all subsequent rounds from TS
  - All units will notify TS that the next round is needed when there are 2 remaining units of product getting ready to be hung
  - TS will state the next round is ready for pickup **OR** TS will state: # units of RBC and # units of plasma are ready, # units are still pending
  - Runner from floor will bring empty MTP Cooler from the previous round with an Epic patient sticker for the patient in order to collect subsequent round
    - If a partial round is picked up by the runner, TS is responsible for delivering the remaining products for the round and moving the products into the MTP Cooler
- Assess blood product inventory and lab staff availability throughout event and reorder stock or call in support as needed.
  - Preferred levels of universal donor **OR** *type compatible*: 24 RBCs, 24 single FFP, 3 Plt, 4 CRYP
- If MTP is called after all pre-transfusion testing is completed, proceed with pre-arranged emergent RBC and plasma packs as the first round, followed by type compatible/crossmatched units for subsequent rounds.
  - All documentation continues on downtime forms until MTP is discontinued
- Document clinican ordering discontinuation, date, and time as **BBC** in the ERUXM accession when event is complete.
- MTP Cooler may accompany the patient during in-house transfers until the MTP has been discontinued. It is the responsibility of the patient care staff to transport the cooler with the patient, notify TS staff when products are becoming depleted. The nursing unit will be responsible for returning the MTP Cooler to the TS as soon as the MTP has been discontinued.

Unborn/Neonatal

- The general emergency release procedure and policy is to be followed for unborn babies and neonates with the following exceptions:
  - **Labeling of units**: Complete with *mother's MRN* and *"BABY of mother's name"*
    - If mother is not registered, complete tag with as much information as is available
  - **History check**: Check mother's history for clinically significant antibodies
    - If mother has history of clinically significant antibodies, complete clinician notification and sign-off using mother's information
- See *Reporting Results* section for instruction on reporting INFUXM orders.
- If unit was issued to an infant for whom a chart was not created (typically not a live birth), no orders will be received. Upon notification of the non-viability, forward all paperwork to the Transfusion Services Supervisor for follow-up along with note of non-viability and mother's name/MRN.

Compatibility Considerations

IF:	THEN:
Antibody screen is currently AND historically negative	• Perform electronic crossmatches once ABORh and ABORh confirmation are complete
Patient has historical clinically significant antibody and/or currently positive antibody screen	• Perform ABID (as appropriate) • Antigen type units that were issued for corresponding antigen (as appropriate) • AHG crossmatch using reserved segments STAT
Incompatible crossmatch of issued units	• Immediately notify clinician of incompatibility, add **BBC** to document call • Request return of unused, incompatible units • Recommend discontinuation of transfusion of incompatible units • Exchange incompatible units for compatible/ antigen negative units, if available • Notify Pathologist immediately, add **BBC** to document call • AHG crossmatch using reserved segments STAT

Multiple Casualties/Disaster

IF:	THEN:
Multiple patients with prioritized urgency dictated by clinician	Work up patient specimens and issue products according to clinician established priority
Multiple patients, ALL urgent priority	1. Provide universal ERUXM products until able to begin testing 2. Perform all ABORhs and confirmations, switch to type specific 3. Perform all antibody screens 4. Perform all crossmatches

REAGENTS/SUPPLIES/EQUIPMENT

Supplies:	Equipment:
Uncrossmatched/MTP Call Log (call log) RBC and non-RBC emergency release tags Emergency Release Blood Product Issue Log (issue log) Temperature indicators Cooler tags	MaxPlus MTP Cooler MaxPlus RBC/Plasma Cooler

PROCEDURE

Step:	Action:
1.	When call for emergency released products is received, the answering CLS/SLA will document on the designated call log: a. Date and time of call b. Patient information: name, MRN, male/female, over/under 50 years old c. Requesting MD d. Number/type of units requested e. Location to which units are to be delivered

<table>
<tr><td>2.</td><td>Collect number and type of products requested and create an issue log for the event, completing all blank fields possible prior to issue.
<table>
<tr><th>Request</th><th>Selection</th></tr>
<tr><td>MTP</td><td>• 6 pre-tagged universal donor RBC pack appropriate to patient demographics
• 6 pre-thawed emergent plasma pack</td></tr>
<tr><td>2 pack of RBC</td><td>• 2 pre-tagged O positive RBCs if female ≥51 or male
• Prepare 2 O negative RBCs if female ≤50</td></tr>
<tr><td>Other combinations of products</td><td>• Individual units pulled from stock inventory shelves
• For plasma requests: individual FFP pulled from pre-thawed emergent stock, if available</td></tr>
</table></td></tr>
<tr><td>3.</td><td>Label units with emergency release tag appropriate for given situation (if not yet attached) and complete patient name and MRN (Epic or SQ labels preferred).
a. In the event that the urgency of the situation is such that there is no time for the patient information to be recorded on the unit, this step may be omitted as long as universal donor units are issued. In this case, the RN/MD is responsible for completing the patient information after the situation has stabilized.</td></tr>
<tr><td>4.</td><td>Retain at least one labeled segment from each RBC unit issued.</td></tr>
<tr><td>5.</td><td>Perform and document visual inspection of units and pack into MTP Cooler
a. Ensure temperature indicator is properly affixed and activated on each RBC or 1-6ºC equilibrated plasma product being placed into cooler
b. Document MTP Cooler used and time packed on issue log
c. Affix a cooler tag to the handle indicating patient information and cooler return time
d. Place RBCs and plasma standing up in designated compartment of MTP Cooler.</td></tr>
<tr><td>6.</td><td>Deliver MTP Cooler to designated location immediately (performed by SLA unless none available), instructing accepting RN to sign/date/time in appropriate field on issue log and return signed issue log to TS.
• Runner will sign for MTP Cooler when picked-up from TS
• RN will sign for MTP Cooler when delivered by TS to OR/L&D or when partial round is delivered to patient bedside</td></tr>
<tr><td>7.</td><td>As soon as possible, check patient history in SQ to guide further testing needs and unit requirements.</td></tr>
<tr><td>8.</td><td>Continue to replace originally requested number of units until or unless verification is made that products are no longer needed.</td></tr>
<tr><td>9.</td><td>Document time MTP Cooler is returned, and unit recovery/disposition information on issue log upon product return.</td></tr>
<tr><td>10.</td><td>Save emergency release call documentation, Epic Uncrossmatched Blood Release order printout, and all issue logs created during event in designated location once event has been reconciled and reported in SQ.</td></tr>
</table>

REPORTING RESULTS

Step:	Action:
1.	Reporting results should wait until emergency release event is slowed or completed and **all pre-transfusion testing has been resulted.** Note: Allocation and/or issue prior to completion of testing will result in unnecessary QA failures.
2.	If both ERUXM and TS/XM (adult) or INFUXM and INFWU (unborn/neonate) test codes have been ordered, use the table below to determine how to result testing:

IF:	THEN:
Specimen testing was performed/ resulted on TS/XM or INFWU CID *Note: DO NOT enter any additional grids that were resulted on original TS/XM order (including ASSP3) into this accession.*	Into the ERUXM/INFUXM order: 1. Transcribe results from TS/XM/INFWU order ◦ *ABR*: Reactions and interpretation into grid ◦ *AS*: "**POS**" or "**NEG**" ◦ *ABI*: Antibody ID'd, if screen positive 2. *EXX*: **T-1** once resulting is completed 3. *UO*: # units set up/requested during entire MTP/ERUXM event ◦ Example*:* 2 RBC from HaemoBank and 1 MTP Cooler (6 RBC) were issued, 2nd MTP Cooler (6 RBC) was set up and never left TS =14 units total 4. DO NOT allocate units on ERUXM order if specimen was run/resulted using a TS/XM/INFWU label. Allocate all units on TS/XM/INFWU. 5. *HX*: **YH** (hx exists in original TS/XM order) 6. *Add Spec. Test* ◦ **BBCNC**: "Results transcribed from acc#" ◦ **CABR** (credit ABR), **CASC** (credit AS), **CABI** (credit ABI, if screen positive) ◦ **BBC**: "MTP discontinued by Dr. *NAME* at *TIME* on *DATE*" (if MTP)

	All testing was performed under the ERUXM or INFUXM CID	Result under ERUXM or INFUXM order • Discontinue duplicate TS/XM orders. Do not transcribe unnecessarily if testing was completed on emergency accession. • Allocate units to the ERUXM or INFUXM order
	Specimen was never received for ERUXM or INFUXM order (i.e. patient is neonate, expired, or was transferred prior to collection) *Note: QA failures will be generated due to lack of testing. Override using ETC codes in the following step as appropriate.*	1. *ABR*: enter **J** (ND) in reaction grids, **HIDE** as *Interp* 2. *AS*: **HIDE** 3. *EXX*: **T-1** once resulting is completed 4. *UO*: # units set up/requested during entire MTP/ERUXM event 5. *HX*: based on patient history 6. *Add Spec. Test*: a. **CABR** (credit ABR), **CASC** (credit AS) b. **BBC**: Free text explanation for lack of testing/specimen 7. Upon allocation of units, regardless of transfusion status*:* a. *XIS:* **J** (ND) b. *Interp:* **XMER** c. *TS*: **]** (Ok to transfuse)
	Emergent orders placed for *non-RBC products only*	• Result product order per standard procedure • Add **BBC** and result using ETC **REER** (RE: Emergency Release Blood Per Physician Request)
3.	Allocate all units that were physically tagged for the patient during the event under the appropriate accession (see table above) using completed issue logs. • Use override codes **REER** (RE: Emergency Release Blood Per Physician Request) and **REMT** (RE: Massive Transfusion Protocol) as appropriate when QA flags are encountered (i.e. patient is Rh negative and given Rh positive, blood type was not resulted due to lack of specimen, etc.) Note: All units that were allocated to/labeled for the patient must be allocated in SQ regardless of whether or not they were issued.	
4.	Issue using date and time of issue documented on issue log.	

5.	Document product status of returned units in *Unit Recovery* section of issue log as needed. Reconcile disposition of any unused products in *Blood Status Update* (see *Return, Transfer, Discard, and Quarantine of Blood Products and Rhogam using Blood Status Update (BSU)* SOP) based on issue log documentation.
6.	File call log, *Uncrossmatch Blood Release* Epic order printout, and all issue logs created during the event together in the appropriate location.

RELATED DOCUMENTS

Use and Maintenance of MaxPlus MTP Cooler, RBC/Plasma Cooler, Platelet Shipper, and Platelet Pouch

Return, Transfer, Discard, and Quarantine of Blood Products and Rhogam using Blood Status Update (BSU)

All revision dates:

Attachments

Emergency Release Blood Product Issue Log.pdf
Request for Issue of Uncrossmatched Blood.pdf
Uncrossmatched_MTP Call Log.pdf