Beaumont Laboratory
Royal Oak

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DOWNTIME EMERGENCY ISSUE

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Introduction

If the Blood Bank is unable to rapidly issue blood via the standard Emergency Issue or Massive Transfusion Protocol for any reason (i.e. power outage, computer issues, etc.) the Blood Bank will physically dispense blood components using this downtime procedure. Red Blood Cells (RBCs) collected from group O, Rh negative donors (O negative), considered to be universal donors, will be used when RBCs are needed urgently. Thawed plasma collected from group AB donors, considered to be universal donors, will be used when plasma is needed urgently. The Blood Bank will keep the following supply of O negative RBCs and AB thawed plasma ready for immediate issue:

- 3 4 O negative units in the Downtime Emergency Issue Box, intended for adult or pediatric transfusion.
- 3 AB thawed plasma units in the Downtime Emergency Issue Box, intended for adult, pediatric or neonatal transfusion.
- 1 O negative standard neonatal RBC unit, plus syringes, in the Downtime Emergency Issue Bucket, intended for neonatal transfusion.

The O negative RBCs will be prepared in advance with an attached, partially completed crossmatch tag (F-1566, *Record of Transfusion*); see *Advance Preparation of O Negative Units for the Downtime Emergency Issue Protocol*. This will allow the Blood Bank to rapidly document the patient's information at the time of dispense, as described in *Procedure to Physically Dispense O Negative RBCs for the Downtime Emergency Issue Protocol*.

Purpose

The purpose of this document is to provide the Blood Bank staff with policies and procedures for dispensing components before a patient's compatibility testing is complete, without the use of the Blood Bank computer.

The policies and procedures in this document shall be applied only in the following situations:

- When the Blood Bank computer is unavailable, for any reason, and components are requested in an emergency (i.e., required compatibility testing is incomplete; see *Table 404-1, Non-Emergency Required Compatibility Testing and Sample Labeling Requirements*).
- At the Blood Bank's discretion, when the Blood Bank determines that taking the time required to dispense components in the Blood Bank computer would be detrimental to the patient.
- When there is an emergency issue request for neonate or unborn fetus.

Policies

As the downtime emergency issue protocol contains elements of both an emergency issue event and a computer downtime, parts of the following Standard Operating Procedures (SOPs) are applicable:

- P120, *Manual Operations*
- P404, *Emergency Issue*

Applicable Policies from P120, *Manual Operations*

- A crossmatch tag (F-1566, *Record of Transfusion*) must be documented and affixed to all components dispensed during a computer downtime. For additional information, refer to P225, *Tagging Blood Components*.
- When the Blood Bank computer system's functionality is restored, all data that was documented on downtime forms must be recouped into the system.
- For all components issued during the computer downtime, the unit's face label will be photocopied. The patient's name and MRN will be documented to this copy using a HIS label (if available), or by handwriting this information (if a HIS label is not available).
- This copy will be stapled to the dispense form (F-1565, *Request for Emergency Dispense of Uncrossmatched Blood Products*) and to F-1566, *Record of Transfusion*.

Applicable Policies from P404, *Emergency Issue*

- Required information:
    - The Blood Bank requires the patient's name, MRN, wristband number, the product number and kind of components requested.
- Requirement for written documentation of the required information:
    - In order to dispense components, the runner must present **written** documentation of the patient's name, MRN, wristband number, and number and kind of components requested. The *Request for Emergency Dispense of Uncrossmatched Blood Products* (F-1565) is usually used for this purpose.
    - All attempts will be made to obtain the required written information; i.e. the runner can complete F-1565 or F-1564 if they have the patient's name, medical record number, and wristband number. The runner may also call to the patient's location to acquire the required information.
- Notification to the Blood Bank of a request for uncrossmatched blood components:
    - The following are acceptable means of notifying the Blood Bank of a request for emergency issue components:
        - Advance notice by a phone call to the Blood Bank. The Blood Bank staff will obtain the required information and will document the information on F-421, *Blood Bank Communication for Massive Transfusion or Emergency Issue*. The Blood Bank will attempt to prepare and dispense the component(s) while the runner is en route to the Blood Bank. Note that even if such communication occurs, the requirement for written documentation of the required information still applies. The technologist should attempt to document form F-421, *Blood Bank Communication for Massive Transfusion or Emergency Issue* as completely as possible under the circumstances. Copies of this form are located next to every workstation throughout the Blood Bank.

        - Presenting F-1565, *Request for Emergency Dispense of Uncrossmatched Blood Products*. This method is less time effective, as the Blood Bank will have no advance notice of the request.
- Authorization / signature for emergency issue blood components:
    - The clinician's authorization for emergency issue of blood components must be documented by a written signature on F-1565, *Request for Emergency Dispense of Uncrossmatched Blood Products*. This form may be signed before or after the incident; the signature is not required at the time of issue. The authorization may be from any of the patient's clinicians (e.g., a surgeon, anesthesiologist, physician's assistant, certified registered nurse anesthetist, resident, fellow, etc.).
- Documentation of the communication log:
    - All emergency issue and massive transfusion cases should be documented by the Blood Bank on F-008c, *Communications and Daily Blood Bank Rounds Log* after the occurrence when time permits. These cases will be reviewed at the next daily rounds by the Medical Director or designee and manager or designee.
- 3 Group AB FFP Thawed at all Times:
    - The Blood Bank will keep a thawed plasma inventory that consists of 3 group AB, 3 group A and 3 group O.
- Transfusion of Components that are not Rh Compatible:
    - The Blood Bank will attempt to dispense RBC and platelet components that are Rh compatible. However, if RBC or platelet components that are not Rh compatible must be dispensed, then the patient's physician must be notified after the event if the patient is
        - a female 50 years old or younger, or
        - a male 18 years old or younger.
    - In this case, then the technologist shall:
        - Submit an electronic variance form.
        - Suggest the use of WinRho or Rh Immune Globulin by contacting the patient's caregiver.
- Use of Coolers:
    - In many cases, components dispensed under the emergency issue protocol will be dispensed in coolers. The policies of P403, *Transporting Blood Components in a Cooler* apply during an emergency issue event.
- Post-Issue Crossmatching:
    - An appropriate post-issue crossmatch must be performed on RBCs dispensed under this emergency issue protocol. For additional information, refer to P117, *Crossmatching Red Blood Cells Post-Issue.*

Polices for the Emergency Issue of products for Neonates and Unborn Fetuses

The prepared downtime emergency issue bucket will be used when an emergency issue RBC unit is requested for a neonate or unborn fetus. Standard downtime procedures apply to the emergency request of blood components for neonates or unborn fetuses.

Babies who are not yet born are typically not assigned a MRN (Medical Record Number) until the time of delivery. If blood products are needed for the baby before the birth, the products are issued using downtime crossmatch tags to the mother, stating the name on the crossmatch tag as "Baby of" then mother's name. After the birth and after a MRN has been assigned, all data must be recouped in the Blood Bank computer system as described in the

Triage CDM / *Recouping Data from a Downtime Emergency Issue to a Baby who was not yet Assigned a MRN*.

No Aliquots of Pediatric / Neonatal Units
During a downtime emergency issue, components will not be aliquoted in bags or syringes. The patient's caregivers will determine the volume to infuse from the entire component. If RBCs are requested for a neonate, an empty 30 cc and/or 60 cc syringe will be dispensed with the O negative RBC unit. If additional syringes are deemed necessary by the patient's caregivers and the unit is still within 4 hours of the issuing time, it is acceptable to send up additional syringes.

Appropriate ABO/Rh of Components Dispensed Under the Downtime Emergency Issue Protocol
- RBCs must be group O, Rh negative.
- Plasma must be group AB.
- The appropriate ABO/Rh of cryoprecipitate and platelets is indicated in P404, *Emergency Issue*. This information is readily available as a Job Aid (Tables 404-2 and 404-3) at the triage workstation.

Initiation of the Downtime Emergency Issue Protocol
The Blood Bank technologist, and not the patient's caregiver, has the discretion to initiate this protocol. In making this decision, the technologist may assess the following information:
- information provided by the patient's caregiver,
- the availability of the Blood Bank computer,
- the degree of required compatibility testing that is incomplete. Refer to Table 404-1, *Non-Emergency Compatibility Testing and Sample Labeling Requirements.*

Expiration Dates of the Units Used for the Downtime Emergency Issue Protocol
- On a daily basis, the afternoon shift will verify that the 3 4 O negative units in the *Downtime Emergency Issue Box* do not expire within the next 7 days, and will replace these units if they do expire within 7 days.
- On a weekly basis, the day shift will replace the O negative standard neonatal RBC unit for the *Downtime Emergency Bucket*. The freshest available unit will be irradiated and then placed in this bucket. Refer to P515, *Policies for the Selection of Blood Components for Neonatal Transfusions* for additional information. The preparation of this unit is documented on F-302, *Daily Temperature and Quality Control Record*.
- Refer to *Advance Preparation of O Negative Units for the Downtime Emergency Issue Protocol*.

Dispensing O Negative RBCs for the Downtime Emergency Issue Protocol to Multiple Neonates at Once
- If multiple downtime emergency issue neonate O negative units are needed at the same time (i.e. for twins), additional neonate O negative units must be acquired and prepared as described in the *Procedure* of this policy.
- Each neonate must have a separate unit of RBCs with an individual F-1566, *Record of Transfusion* attached.
- The F-1566, *Record of Transfusion* for each neonate's RBC should include an additional identifier (e.g. "Baby A" or "Baby B") to differentiate the intended recipients.

Definitions

- **ABO-identical component:** A component that is of the identical ABO blood group as the recipient.

- **ABO-plasma-compatible:** A component that does not contain ABO antibodies corresponding to the recipient's ABO antigens; refers to platelets, plasma, or cryoprecipitate.

- **BBCDM:** Blood Bank Computer Documentation Manual.

- **Rh compatible component:** A component of the following specificity:
  - For an Rh negative recipient, the component is Rh negative.
  - For an Rh positive recipient, the component is either Rh positive or Rh negative.
  - For a recipient with an Rh type that is undetermined for any reason, the component is Rh negative.
  - Refers to RBCs and Platelets.

- **Rh identical component:** A component that is of the identical Rh type as the recipient.
- **Standard Neonatal RBC Unit:** A RBC unit intended for neonatal transfusion meeting the following minimal requirements:
  - Group O
  - Rh compatible with the neonate (must be Rh negative for the *Downtime Emergency Issue* protocol)
  - Leukocyte Reduced
  - CMV negative
  - Hemoglobin S (sickle cell) negative
  - Irradiated
  - Fresh: see the policy *Expiration Dates of the Units Used for the Downtime Emergency Issue Protocol*

- **Universal Donor:** A donor who is group O, Rh negative, whose RBCs can be transfused to most blood types.

Equipment

- Cooler with ice and thermometer
- Downtime Emergency Issue Box
- Downtime Emergency Issue Bucket

Computer Related

The following flows from the BBCDM may be used:

- RC.BB.CDM.TR.401 - *Emergency Issue*
- RC.BB.CDM.TR.403 – *Post-Issue Crossmatch*
- RC.BB.CDM.TR.405 - *Recouping Data from a Downtime Emergency Issue to a Baby who was not yet Assigned a MRN*
- RC.BB.CDM.TR.511 - *Edit Product Status*

Forms

- F-008c, *Communications and Daily Blood Bank Rounds Log*
- F-191, *Emergency Blood* tag
- F-302, *Daily Temperature and Quality Control Record*
- F-421, *Blood Bank Communication for Massive Transfusion or Emergency Issue*
- F-1566, *Record of Transfusio*n, a.k.a. crossmatch tag
- F-1565, *Request for Emergency Dispense of Uncrossmatched Blood Products*

Procedure

Advance Preparation of O Negative Units for the Downtime Emergency Issue Protocol

Prepare the supply of O negative RBC units for the Downtime Emergency Issue Box and the Downtime Emergency Issue Bucket, as directed in the steps below. Make sure that the unit to be used for the neonatal Downtime Emergency Issue Bucket is weighed and the weight is recorded in the computer and on F-1566 *Record of Transfusion*.

1. Verify that the expiration dates of the units in the Downtime Emergency Issue Box and the Downtime Emergency Issue Bucket are acceptable. If the expiration date is unacceptable, then:
   a. Return the unit to available inventory or discard the unit, as appropriate, and
   b. Replace the unit by repeating the following steps.

   See the policy *Expiration Dates of the Units used for the Downtime Emergency Issue Protocol*. If necessary, see Triage CDM / *Edit Unit Status*.

2. For each unit, document the donor unit number, donor blood type, component product code, and component description on a blank crossmatch tag. Initial the "Tagged by:" section of the tag and attach the tag to the unit. Prepare a second pink crossmatch tag with the same information for each unit. This pink copy will be retained by the Blood Bank.
   The donor unit number, donor blood type, and component product code should be documented on the plastic blood product tag in addition to the paper section of the crossmatch tag.

   The patient's name, MRN, and wristband number will be completed at the time of dispense.

3. For the neonatal unit, ensure that the weight of the unit is documented on the crossmatch tag and is also documented in the computer.

   See P221, *Weighing Blood Products*.

4. Remove two segments from each unit. Label them with a unit number sticker from the back of the unit and place them into a Ziploc bag.

5. Make a copy of the face label of each unit. Place the pink crossmatch tags and face label copies into the pocket of the Ziploc bag containing the segments, return the Ziploc bag to the Downtime Emergency Issue Box.

6. Tag each unit with an *Emergency Blood* tag (F-191).

7. Place the unit in the appropriate container, either the Downtime Emergency Issue Box or the Downtime Emergency Issue Bucket.

The Downtime Emergency Issue Box is located in the XM refrigerator, on the right hand bottom shelf. The Downtime Emergency Issue Bucket is located in the walk-in refrigerator on the rack which the neonatal units are located.

Procedure to Physically Dispense O Negative RBCs for the Downtime Emergency Issue Protocol

1. The protocol is initiated at the Blood Bank technologist's discretion.
   See the policy *Initiation of the Downtime Emergency Issue Protocol.*

2. Depending on the patient's age,
   a. If the patient is greater than 4 months old, then select the necessary O negative units from the Downtime Emergency Issue Box.
   b. If the patient is less than 4 months old, select the necessary O negative unit from the Downtime Emergency Issue Bucket. (This bucket contains 1 standard neonatal unit and neonatal syringes.)

3. Transcribe the following patient information onto F-1566, *Record of Transfusion* that was attached to the unit:
   a. **Patient name** (documented twice, on the paper section and the plastic product tag section of the *Record of Transfusion*)
   b. **Patient's MRN** (documented twice, on the paper section and the plastic product tag section of the *Record of Transfusion*)
   c. **Patient's wristband number** (only documented on the paper section of the *Record of Transfusion*)
   d. **Patient's blood type** (only if the ABO/Rh has been performed on the current sample; i.e. the antibody screen is not complete; documented twice, on the paper section and the plastic product tag section of the *Record of Transfusion*).

   The *Record of Transfusion* should have been attached to the unit and partially documented. This step may be performed as soon as a phone call is received using the information of F-421, *Blood Bank Communication for Massive Transfusion or Emergency Issue*, or when the runner arrives at the Blood Bank if no phone call is received.

4. Visually inspect the units, verifying that the Quality Control standards are met. Initial next to the "Inspected/Issued by:" section of the tag.
   See the *Quality Control* section of P401, *Dispensing Blood Components.* Do not dispense components that do not meet these standards.

5. In the spaces provided on F-1566, *Record of Transfusion*, document the employee number of the person to whom the component was issued, the cooler or tube station used, the date and time issued (time stamp), and the operating room (OR; if applicable) in which the unit is being issued to.

6. Transcribe or photocopy all the documented information from steps 3 – 5 onto the pink copy of the crossmatch tag. This should be done immediately if time permits, or recouped following the issue of the unit using the information from F-1565, *Request for Emergency Dispense of Uncrossmatched Blood Products*.

7. Retain the Ziploc bag containing the unit segments, the pink copy of the crossmatch tag, and the copies of the face labels of the units.

8. Give the unit(s) to the runner. If a neonatal unit is dispensed, remember to also give syringes (usually a 30 cc and a 60 cc syringe).
   If applicable, refer to P403, *Transporting Blood Components in a Cooler.*

9. Obtain a specimen and complete compatibility testing as soon as possible, if the patient does not have a current sample.

10. Once the computer is available, update the computer record as follows:
    a. Register the patient in the Blood Bank computer, if necessary.
    b. Perform the Emergency Issue function in the computer, using the pink copies of the crossmatch tags and the copies of the unit face labels.

    Refer to Triage CDM / *Emergency Issue.* For a neonate, refer to Triage CDM / *Recouping Data from a Downtime Emergency Issue to a Baby who was not yet Assigned a MRN.*

11. Perform the appropriate post-issue crossmatches on all issued units, using the segments in the Ziploc bag.
    Refer to P117, *Crossmatching Red Blood Cells Post-Issue* and Triage CDM / *Post-Issue Crossmatches*.

12. When time permits, replace the unit(s) in the bucket or box, as described in A*dvanced Preparation of O Negative Units for the Downtime Emergency Issue Protocol.*

References

AABB, *Technical Manual*, current edition.
AABB, *Standards for Blood Banks and Transfusion Services*, current edition.

Authorized Reviewers

Chief, Pathology and Laboratory Medicine
Medical Director and/or Designee, Blood Bank
Manager/Supervisor and/or Designee, Blood Bank

Downtime Emergency Issue

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