PROCEDURE
Corewell Health East - Emergency Issue of Blood Products - Blood Bank

This Procedure is Applicable to the following Corewell Health sites:
*Sites:, Corewell Health Beaumont Grosse Pointe Hospital, Corewell Health Beaumont Troy Hospital, Corewell Health Dearborn Hospital, Corewell Health Farmington Hills Hospital, Corewell Health Taylor Hospital, Corewell Health Trenton Hospital, Corewell Health Wayne Hospital, Corewell Health William Beaumont University Hospital (Royal Oak)

Applicability Limited to: N/A

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Functional Area: Clinical Operations, Laboratory

Lab Department Area: Lab - Blood Bank

1. Principle
This procedure will provide the Blood Bank staff with policies and instructions for preparing and dispensing blood and blood components in an emergency, before required compatibility testing is complete.
When blood is needed in an emergency, the patient's physician must weigh the risks of transfusing blood components before the required compatibility testing is completed with the risks of delaying transfusion. Such a delay may deprive the patient of oxygen-carrying capacity.

2. Responsibility
Personnel listed below who have completed the competency requirements will perform this testing and complete these tasks as specified in the procedure.
A. Blood Bank
B. Registered Nurse
C. Runner
D. Physician

3. Contents

Entities will reference associated Documentation contained within this document as applicable
Printouts of this document may be out of date and should be considered uncontrolled.

L. Unborn and Soon-to-be-Born Neonates
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U. Incompatible Post Issue Crossmatch
V. Post-Issue Crossmatch for Neonate

4. Definitions

A. BBIS: Blood Bank Information System
B. HIS: Hospital Information System
C. Current sample: A sample that meets specimen requirement guidelines listed below and was collected no more than 3 days before the current date. For example, if a sample is drawn on Monday (day 0), then the sample remains "current" all day Monday, Tuesday, Wednesday, and Thursday as long as all patient identifiers continue to match those on the specimen.
D. Emergency issue: An urgent need for transfusion in which the attending physician determines that blood components must be dispensed/transfused prior to completion of required compatibility testing.
E. CRYO: Abbreviation for Cryoprecipitate.
F. Dispense: Process of issuing blood products for transfusion.
G. ERS: Hospital event reporting system (RL Datix) where clinical and operational processes impacting patient care and general safety concerns are reported.
H. Plasma: Refers to any type of plasma product, including liquid plasma and thawed plasma.
I. ABO-identical: A component that is of the identical ABO blood group of the recipient.
J. ABO-plasma compatible: Refers to platelet, plasma, or cryoprecipitate components that do not contain ABO antibodies corresponding to the recipient's ABO antigens.
K. ABO-compatible RBCs: Donor RBCs that lack the ABO antigens corresponding to the recipient's ABO antibodies.
L. Rh-identical component: A component that is of the identical Rh of the recipient.
M. Rh-compatible component: A blood component of the following specificity:
    1. For an Rh-negative recipient, the component is Rh-negative.
    2. For an Rh-positive recipient, the component is either Rh-positive or Rh-negative.
N. Massive transfusion: The administration of 8-10 RBC units within a 24-hour period, or the acute administration of 4-5 RBC units within a one-hour period to an adult patient.
O. Trauma massive transfusion: The acute administration of 4-5 red cell units within one hour.
P. Compatibility testing: Testing that must be completed prior to dispense in non-emergency situations. Includes sample labeling requirements, ABO and Rh testing, antibody screening, possible antibody investigations and crossmatching
Q. Standard Blood Bank cooler: A temperature-monitored cooler used for inpatients that:
    1. Has been validated for the transport of blood components.
    2. Is intended for the transport of 1 - 6 blood components which require refrigeration.
R. Massive transfusion cooler: A large, temperature-monitored cooler that:
    1. Is intended for use during a massive transfusion protocol for the transport of up to 6 units of RBCs and 6 units of plasma.
    2. Is intended for transport of up to 14 units of plasma during a therapeutic plasma exchange.
    3. Has been validated for the transport of blood components.
    4. Use of which is further described in Providing Blood Components for Massive Transfusion procedure.
S. Complete ABO/Rh typing: ABO/Rh typing that includes both a forward and a reverse typing. Note that a neonatal typing is not considered a complete ABO/Rh type because a reverse typing is not

performed. Refer to Transfusion Medicine policy, Corewell Health East - Forward Typing Determination Of Neonatal ABO and Rh - All Beaumont Hospitals.

T. Neonates: Patients less than 4 months old.
U. Valid blood type: An ABO/Rh interpretation for which no discrepancies remain unresolved.
V. Post-issue crossmatch: Serologic compatibility testing of donor unit and recipient after the unit has been issued in an emergent situation.

5. Specimen

A. A specimen is not required to initially dispense components under the Emergency Issue Protocol. However, the specimen should be collected as soon as possible. A specimen that is collected prior to transfusion helps avoid blood typing discrepancies and wastage of universal blood products.
B. Specimens must meet the requirements of Transfusion Medicine policy, Corewell Health East - Triaging And Identifying Acceptable Samples For Testing- Blood Bank - All Beaumont Hospitals.

6. Procedure

A. Information Needed for Release of Emergency Issue of Blood Products
   1. Required
      a. Patient MRN
      b. Patient Name
      c. Product(s) requested or specify pediatric or adult MTP
   2. Preferred
      a. Patient Wristband number (required for ABO Group-specific blood products)
      b. Initiating Physician (See Authorization / Signature section below)
      c. Caller Name and Phone Number
      d. Patient Location
   3. Note: The patient's wristband number is preferred but not required to release emergency issue blood product(s). If the patient's wristband number is not available, blood bank will proceed as if the patient ABO blood group is not on file according to the applicable attached chart: 33726-1 *Emergency Issue RBC Selection* and/or 33726-2 *Emergency Issue FFP, Platelet, and Cryo Selection*.

B. Notification to the Blood Bank of a Request for Uncrossmatched Blood Components
   1. The following are acceptable means of notifying the Blood Bank of a request for emergency issue components:
      a. Advance phone notification to the blood bank. (Preferred method, will allow additional time for Blood Bank to prepare the request while runner is en route.)
         1) Provide Blood Bank staff with as much of the information listed above as possible in a timely manner.
         2) Blood Bank staff will begin to prepare and dispense the component(s) while the runner is en route to the Blood Bank.
            Note: a blood dispense form presented by the runner with the required patient identifiers is required to release the blood.
      b. Presenting the Blood Component Pickup Tag (X23480) and/or Electronic Dispense form for blood in person.
      c. The caregiver may place an order in the HIS for Uncrossmatched RBC and/or Uncrossmatched Plasma products.

      Note: Option b and c are not preferred as both methods are less efficient since the Blood Bank will have no advance notice of the request to allow time to begin preparation of the products.

C. Written Documentation of Phone Request
   1. Upon phone notification for Emergency Blood Products, blood bank will document the information obtained on any of the following:
      a. Blood Bank Communication for Massive Transfusion or Emergency Issue Form (Whitlock - F-421R00)

b. 33726-4 *Printable BB MTP-EI Communication Form*
c. Printed HIS order request

D. Paper Request Provided by Runner
1. In order to receive blood products, the runner must present the required information listed above. This information should be provided on one of the following:
a. Blood Component Pickup Tag (X23480)
b. Electronic Dispense form from HIS

E. Authorization / Signature for Emergency Issue Blood Components
1. Authorization for emergency issue of blood components is required with a signature on any of the following:
a. Designated section on the Blood Component Pickup Tag (X23480) or the Electronic Dispense form generated from Epic.
b. Electronic signature in the Epic uncrossmatched blood product order or another source for capturing electronic signature (e.g. DocuSign).
2. Verbal orders for blood are acceptable, provided that a signature is obtained; preferably within 24 hours of the verbal order.
3. The signature must be from the physician (MD or DO) caring for the patient and records maintained per:
a. CLIA Regulation CFR 606.160.(3)(v) Emergency release of blood, including signature of requesting physician obtained before or after release.
b. FDA requirement - 21 cfr. 606.151 (e) Procedures to expedite transfusion in life-threatening emergencies. Records of all such incidents shall be maintained, including complete documentation justifying the emergency action, which shall be signed by a physician.
4. Attachment 33726-3 *Request for Emergency Issue Signature* may be used to help obtain signatures.

F. Extenuating Circumstances / Unable to Provide Required Information
1. Extenuating circumstances may prevent the patient's caregivers from presenting the required information to the Blood Bank. In this case, the Blood Bank shall never refuse to dispense components or unduly delay an emergency transfusion when the required information cannot be obtained
2. The technologist will weigh the amount of time needed to obtain the required information, versus the patient's need for an immediate transfusion. After weighing these factors, the technologist will proceed as described below:
a. Obtain the required information.
1) If the runner presents with only a patient label, the runner can affix the label to a Blood Component Pickup Tag present in the Blood Bank.
2) The runner may complete a Blood Component Pickup tag with the patient's name and medical record number if that information is available. The runner may also call to the patient's location to acquire the required information
- OR -
b. Immediately dispense products using downtime procedure.
1) Refer to site-specific Blood Bank Downtime Procedure.
c. Any time that the patient's caregivers do not provide the required information, a hospital ERS or an internal variance report shall be completed.

G. Plasma Inventory
1. In anticipation of an activation of the massive transfusion protocol or an emergency issue event, the Blood Bank may have an available inventory of thawed plasma.
2. The Blood Bank may maintain an inventory of group A liquid plasma that may be used if the emergency issue request is for a massive transfusion. Refer to your site-specific procedure for Providing Blood Components for Massive Transfusion for additional information.

H. ABO and Rh Requirements for Components Dispensed under the Emergency Issue Protocol
1. Red Blood Cells:

a. If a confirmed blood type has been completed on a current specimen, then type-specific blood may be emergency issued.
b. If a specimen is not yet available or time does not permit completing the blood type, then O negative packed cells will be issued to female patients less than 50 years old and male patients less than 15 years of age without previous history of being Rh(D) Positive. O positive packed cells will be issued to all other patients.
c. Refer to attachment: 33726-1 *Emergency Issue RBC Selection* for additional guidelines relating to inventory concerns, degree of completion of compatibility testing, etc.

Note: Emergency issue of Rh-positive RBCs to females under 50 may require a supervisor level override. Refer to Transfusion Medicine procedure SafeTrace (Blood Bank) Application.

2. Plasma Products:
   a. If a confirmed blood type has been completed on a current specimen and time allows based on inventory availability, then ABO-compatible plasma may be issued to the patient.
   b. If a specimen is not yet available or time does not permit completing the blood type:
      1) Group A plasma is preferred when patient historical blood type is unknown, group A, or group O.
      2) Group AB plasma is preferred if patient historical blood type is known to be Group B or AB.
   c. If the emergency issue plasma request is for an adult massive transfusion protocol, group A liquid plasma may be used in place of thawed plasma. Refer to site specific Providing Blood Components for Massive Transfusion policies. Note the following:
      1) Liquid plasma should not be used for pediatric MTP (patients less than 15 years of age).
      2) No more than 6 liquid plasma should be given to a patient within a 24 hour period, unless directed by the Blood Bank Medical Director.
      3) For patients that are historically or suspected to be group B or AB and thawed AB plasma is not available, reach out to the Blood Bank MD for further direction.

   Refer to attachment 33726-2 *Emergency Issue Platelets, Plasma, and Cryoprecipitate Selection* for specific guidelines based on inventory availability, age and sex of the patient, etc.
3. Platelet or cryoprecipitate products:
   a. Age specific and inventory concern guidelines found in attachment 33726-2 *Emergency Issue Platelets, Plasma, and Cryoprecipitate Selection* are followed.
      1) If there is a confirmed blood type from the current admission available, tag any appropriate ABO-plasma compatible units, if available.
      2) If there is no current blood type available any ABO units may be dispensed (Group O is least preferred).
         a) For pediatric patients, issue group AB, if available.
      3) Rh-negative platelets, if available, must be used for women less than 50 years of age and males less than 15 years of age.

I. Rh-positive Blood Products to Rh-negative Patients
1. The Blood Bank will attempt to dispense RBC and platelet components that are Rh compatible.
2. Rh-positive red blood cells may be issued to Rh-negative patients (females over 50 and males over 15) in situations where a substantial amount of blood is expected to be used and Rh-negative blood compatible with the patient's type is not available or is in limited supply. In the judgment of the Blood Bank medical directors, further use of Rh-negative blood would jeopardize the availability of such blood to patients at greater risk of Rh sensitization (such as females of childbearing potential).
3. If RBC or platelet components that are not Rh compatible are dispensed, then the technologist must submit an internal variance for follow up.

4. If a platelet component that is not Rh-compatible must be dispensed to a female patient 50 years or younger with childbearing potential, or a male 15 years old or younger, then the technologist shall also:
    a. Suggest the use of Rh Immune Globulin by contacting the patient's caregiver. Note: 1 dose of Rh Immune Globulin will cover 7 units of Rh-positive pheresis or pooled platelet products or 14 days, whichever comes first.
    b. Add a Patient Profile Note in the BBIS to document the communication.
5. Any questions from physicians or nursing concerning use of Rh-positive blood on known Rh-negative patients should be referred to the Blood Bank director or pathologist on call.

J. Special Requirements and Antigen Negative Requirements
1. The Blood Bank will attempt to supply components that meet patients' special requirements / antigen negative requirements.
2. The first priority, however, will be to dispense components expeditiously; it may not always be possible to dispense components that meet the patient's special requirements / antigen negative requirements.
3. If unable to meet the patient's special / antigen negative requirements, the Blood Bank will attempt to notify the requesting physician, if appropriate; this shall be documented in a variance. For example:
    a. A request for emergency issue RBCs is received for a patient with clinically significant antibodies. Antigen negative RBCs are unavailable. The Blood Bank notifies the requesting physician, and RBCs that are not tested for the applicable antigen are dispensed.
    b. A request for emergency issue RBCs is received for a patient with a special message for irradiated components. The Blood Bank may dispense non-irradiated RBCs if irradiated RBCs are unavailable.

K. Emergency Issue Policies Specific to Unborn / Soon-to-be-Delivered Neonates
1. Refer to site-specific Blood Bank Downtime procedure.
2. Unborn fetuses are typically not assigned an MRN until the time of delivery. If blood products are needed for the baby before birth, the products are issued using downtime Blood Product tags (P-Tags) assigned to the mother, stating the name on the P-Tag as "Baby of" then mother's name and mother's MRN. After the birth, once a name and MRN have been assigned, all data must be recouped in the BBIS as described in Transfusion Medicine procedure, SafeTrace (Blood Bank) Application.

L. Use of Coolers
1. If more than one refrigerated component is dispensed at the same time under the emergency issue protocol, the products requiring refrigeration will be dispensed in coolers. The site-specific Transfusion Medicine Transporting Blood Components in a Cooler procedure applies.

M. Saving Segments from Dispensed Emergency Issued RBC products
1. For RBCs, two segments from each dispensed unit are removed and saved with the donor unit number attached to the segments. These segments will be used to perform post issue crossmatches.
    a. Refer to Transfusion Medicine policy; Corewell Health East - Serologic Crossmatching of Red Blood Cells - All Beaumont Hospitals.

N. Issue of Emergency Blood Components in BBIS
1. Access the BBIS and verify the patient history.
    a. Review the patient At-A-Glance bar to determine:
        1) The status of any current specimen/compatibility testing
        2) Special transfusion requirements for the patient
        3) Antibody history
        4) Patient notes
2. Using the Emergency Issue function in the BBIS, scan requested components of the appropriate ABO and Rh based on guidelines above and generate product transfusion tags (P-Tags). Refer to Transfusion Medicine Policy, SafeTrace (Blood Bank) Application.

3. Attach applicable Transfusion Labels from the P-Tags to the component(s).
    a. Both Transfusion Labels from the P-Tag should be attached to the component, one of the labels may be affixed to a manilla tag. The remaining must be left attached to the original paper to be available to affix to downtime emergency issue documentation, if needed.
4. Attach an Emergency Blood or Uncrossmatched Tag/Label to the component to signify that compatibility testing was not completed at the time of dispense. The following may be used for this purpose:
    a. Emergency Blood Tag (Whitlock – 191)
    b. 33726-5 *Printable Emergency Blood Tag*

O. Patient Unavailable in BBIS or BBIS down
1. If the patient chart is not available in the BBIS or the BBIS is down immediately dispense the products using the site-specific Downtime Emergency Issue Procedure.

P. Release of Products to the Runner
1. The runner picking up blood should arrive with a completed Blood Component Pickup Tag (X23480) or an electronic generated dispense form from the HIS as described above.
    a. If the runner presents with only a patient label or no information, Blood Bank staff may provide the runner with a Blood Component Pickup Tag (X23480) and request the runner to complete the required information. If time permits the runner should call the patient's RN to acquire any missing information.
    b. If wristband information is missing or in disagreement with current specimen, investigate if time permits.
    c. If there is no time to obtain or confirm wristband number, proceed to issue products as if there is no ABO group on file for the patient (historical Rh guidelines may still be followed).
2. Document the pickup tag with the date/time and the identification of the technologist dispensing the units.
3. Confirm whether the form has been signed by the individual authorizing the emergency issue. If the form is not signed:
    a. If time allows, make a copy of the form and send the original with the runner for signature.
    b. Set aside for follow-up.
4. Complete the dispense process with clerical checks as described in Transfusion Medicine procedure, Corewell Health East - Dispensing Blood Products - All Beaumont Hospitals.
5. Staple the following together and place in site-specific storage area:
    a. P-Tag(s) from products issued
    b. Blood/Component Pick up Slip
    c. Additional paper documentation used or provided, (e.g. Blood Bank Communication for Massive Transfusion or Emergency Issue Form).
6. Hand out unit(s).

Q. Compatibility Testing
1. As soon as possible after specimen receipt, complete blood type and antibody screen testing and perform the post-issue crossmatch as described below.
2. If an ABO incompatibility is detected at any stage of the testing, immediately notify the patient’s physician and the Blood Bank Medical Director (or other Blood Bank pathologist or fellow on call).

R. Post-Issue Crossmatch - Refer to Transfusion Medicine procedure, Corewell Health East - Serologic Crossmatching of Red Blood Cells - All Beaumont Hospitals.
1. Post-issue crossmatches must be performed as soon as possible upon receipt of the specimen.
2. The Blood Bank is required to document the completion of compatibility testing for RBC units that were uncrossmatched at the time of issue and transfused to the patient as described below.
    a. Patient with no history or current indication of unexpected antibodies:

1) Immediate spin crossmatch must be performed for the first 12 RBC units issued and transfused.

b. Patient with historical or current unexpected antibody(ies):
1) Immediate spin crossmatch must be performed for the first 12 RBC units issued and transfused.
2) Gel crossmatch (or applicable AHG crossmatch) must be performed on every RBC that is emergency issued, if possible.

3. All post-issue crossmatches are documented in the BBIS as described in the Blood Bank Transfusion Medicine policy, SafeTrace (Blood Bank) Application.
4. Note: Post-issue crossmatches should not be ordered in the BBIS until there is a valid specimen in hand.

S. Unable to Obtain a Sample
1. If a blood bank sample is not received for compatibility testing (e.g., patient expired), then the compatibility testing/post-issue crossmatch may be performed using a CBC sample, if available. If a sample cannot be obtained, then post issue crossmatches should not be ordered and an internal variance should be submitted.

T. Incompatible Post-Issue Crossmatches
1. Incompatible crossmatches are investigated as described in Transfusion Medicine policy, Corewell Health East - Investigation of Incompatible Crossmatches - All Beaumont Hospitals.
2. If an incompatibility is discovered on completion of a post-issue crossmatch, the clinician treating the patient must be notified as soon as possible.
3. The Blood Bank Medical Director, Blood Bank pathologist, or Blood Bank fellow should be consulted immediately if the cause of an incompatible post-issue crossmatch cannot be determined.
4. Submit an internal variance.

U. Post-Issue Crossmatches for Neonates
1. Post-issue crossmatches are not required for patients less than 4 months old unless there is history of maternal or neonatal antibodies.
2. If there are no maternal/neonatal antibodies, then a serologic crossmatch is not required post-issue. The NEO (Neonatal Assignment) crossmatch should be selected and resulted for the crossmatch order that reflexes in the BBIS.
3. If there are maternal or neonatal antibodies, an AHG crossmatch is performed as described in Transfusion Medicine procedure, Corewell Health East - Newborn Compatibility Testing Guidelines - Blood Bank - Dearborn, Farmington Hills, Royal Oak, Troy.

7. Revisions

Corewell Health reserves the right to alter, amend, modify or eliminate this document at any time without prior written notice.

8. References

AABB, Technical Manual, current edition

9. Procedure Development and Approval

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10. Keywords

Not Set