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Blood Transfusion-Standards and Administration, 699.21.00

Document Type: Policy

SUPERSEDES: 4/09, 6/6/07, 11/04 Deleted 8/04 655.1050 And 650.1201combined Policies 655.1050 And 650.1201 New Policy # 699.21 (Title Change Also)

SCOPE:

All Kadlec Regional Medical Center caregivers who have received training in the administration of blood and blood products. This includes RN's, Perfusionists or Anesthesia caregivers administering blood products to inpatients and outpatients.

PURPOSE:

To outline policy for administration of blood and blood products in a safe and efficient manner based on regulatory requirements from the AABB (American Association of Blood Banks), CAP (College of American Pathologists) and TJC (The Joint Commission).

DEFINITIONS:

Transfusionist: Trained person administering, documenting, and monitoring the patient during Blood Product Transfusion: RN, Perfusionists, or LIP.

Transfusion Assistant: Person responsible for assisting with verifying appropriate orders, product and patient ID regarding Blood Product administration (RN or LIP).

Blood Products derived from whole blood: Packed Red Blood Cells (PRBC), Fresh Frozen Plasma (FFP), Platelets (PLTS), Cryoprecipitate (Cryo), Factor concentrates, Factor VIII, Factor IX.

PARQ: Procedures, Alternatives, Risk and Questions: This requires a conversation by the LIP with the patient or POA to discuss proposed procedure, alternatives to the procedure, risk involved, and to answer any questions for the purpose of obtaining informed consent.

EMR: Electronic Medical Record.

QRR: Quality Review Report.

BTT: Blood Transfusion Tag. Tag attached to the blood product. Contains blood product and patient identifiers.

STANDARD:

AABB-American Association of Blood Banks, CAP-College of American Pathologists, Lippincott Prodcedures, Blood & Blood Product Transfusion, American Red Cross.

Minimum skill level: Registered Nurse, Anesthesia Provider, and Perfusionists trained in the identification of transfusion recipients and blood components and annual education related to the recognition and reporting of adverse transfusion events.

RESOURCES:

Kadlec Blood Bank

Lippincott Procedures

American Red Cross: redcross.org

Krames Patient Education-When You Need a Blood Transfusion (Adult) http://www.kramesondemand.com/Healthsheet.aspx?id=40011&ContentTypeId=3

Krames Patient Education-When Your Child Needs a Blood Transfusion http://www.kramesondemand.com/Healthsheet.aspx?id=89289&ContentTypeId=3

POLICY

Standards of Blood Management:

1. Un-crossmatched blood:

A. Available within 10-20 minutes, not including transport time.

B. Must be specifically ordered by LIP for emergent cases only.

C. If patient type is unknown, Type O will be made available. The type and crossmatch will be completed so that any additional units may be crossmatched as needed. Type specific if ABO on file for admission.

D. The LIP takes responsibility for the un-crossmatched transfusion and must sign the order in the EMR. During downtime, if the order is not entered into the EMR, downtime procedures will be followed.

2. STAT Crossmatch: Availability-1 hour after sample received by the lab. A patient with a positive antibody screen will require additional time for antibody identification.

3. Routine Crossmatch: Availability-2 to 4 hours after sample received by the lab.

4. Blood Bank specimens should always be legibly labeled in the presence of the patient at the time of collection. The appropriate information must come from the patient's hospital Identification Band; information should never be copied from the requisition.

A. If the patient is to receive red cell blood products within the next 72 hours, the patient needs to be banded with a Blood Bank ID Typenex Band. Patients only receiving plasma or platelet products are not banded with the Blood Bank ID Typenex Band.

B. On each tube drawn for the Blood Bank, the following information is required from the patient's hospital Identification Band:

1. Patient's first and last name
2. Middle initial if patient is registered with a middle name
3. Date of birth

5. PRBC's, leukodepleted packed cells, and thawed plasma must maintain a storage temperature of 1-10 degrees Celsius. Keep blood products in insulated containers to maintain temperature control for approximately 12 hours in Blood Bank cooler.

6. Temperature indicators are applied to some blood products delivered in a cooler. Note stability and reading on indicator. Return any units that have indicators registering a solid RED dot. This denotes temperature of product is not adequately maintained. **DO NOT HANG/INFUSE.**

7. Platelets and thawed cryoprecipitate are stored at room temperature, 20-24 degrees Celsius. Do not place on ice or refrigerate. If cooled, product must be returned to be wasted.

8. All unused blood products must be returned promptly to prevent wastage.

9. Return blood products for disposal (unused, spiked, or partially used). Complete QRR if full or partial blood product must be wasted.

10. Nursing staff should use blood exposure preventions and personal protective equipment as appropriate during spiking, connecting, and disconnecting any blood product or devices.

11. Blood components shall be traceable from collection to final disposition in EMR.

12. In the event that a patient receiving an active blood or blood product transfusion gets admitted from an outlying facility, all nursing units will continue the transfusion and include the following documentation in the EMR:

A. Nursing Progress Note: unit type, unit number, unit expiration date

B. Vital signs will be included in Nursing Progress Note on arrival, hourly, and upon completion of unit

EQUIPMENT:

- Blood or blood product
- Sterile normal saline for IV infusion
- Electronic infusion device
- Vital sign monitoring equipment
- Appropriate blood infusion tubing set (see attached table)
- Bedside computer with barcode scanner (preferred)

CONSENTING:

1. Consent is required for all of the following blood products: Red Blood Cells, Fresh Frozen Plasma, Convalescent Plasma, Platelets, Cryoprecipitate, Clotting Factor Concentrates, and Granulocytes.

2. Verify LIP discussion of Informed Consent for Blood Transfusion (PARQ) with the patient and the date of conversation. This is documented by the LIP as an Informed or Emergent Consent order under blood administration in the EMR or in the LIP notes.

3. The nurse witnesses the signature of the patient or POA for Informed Consent on the Consent To Transfusion of Blood Products form. Consent is valid for the duration of admission or until the patient revokes consent.

4. A signed surgical consent authorizing blood and blood products to be used during surgery is valid during surgery. The post-operative hospitalization requires a new blood consent form if there is a new clinical problem or a change in the risks and benefits of the treatment.

5. If unable to obtain consent, the reason must be documented in the patient chart.

6. If the patient refuses blood transfusions please contact the Bloodless Medicine Department.

CONFIRM	
Steps:	*Additional Considerations:*
Confirm the practitioner's order. Check for special instructions.	
Explain the procedure and reason for administration of blood or blood component to patient.	Printable blood transfusion education is available in Krames: 1. When You Need a Blood Transfusion (Adult) http://www.kramesondemand.com/Healthsheet.aspx?id=40011&ContentTypeId=3 2. When Your Child Needs a Blood Transfusion (Pediatric) http://www.kramesondemand.com/Healthsheet.aspx?id=89289&ContentTypeId=3
Explain the signs and symptoms of a transfusion reaction and importance of notifying the nurse.	
Obtain written informed consent from patient and place in patient chart.	

PREPARE	
Steps:	*Additional Considerations:*
Confirm or establish patent vascular access.	**Do not remove blood or blood product from the blood bank until a patent IV is established.** • Acceptable access requires a minimum 20g peripheral IV line (18g is preferred) or a central venous access device. Blood and components may never be administered through a pulmonary artery.
Obtain electronic infusion pump and blood warmer if indicated.	• Infusion pump is not required for blood products to be run as rapidly as patient will tolerate (i.e. platelets). • Indications for blood warmer include rapid or massive transfusion, exchange transfusion, or potent cold agglutinins and requires a provider order.
Prime appropriate tubing with normal saline and initiate infusion at TKO rate to maintain IV patency.	If y-site blood tubing is required, prime one side with normal saline. Remember to cover filter completely to avoid lysis of blood components. If blood component tubing required, prime new primary tubing with normal saline. “TKO” rate is 30mL/hr.
Place patient sticker and fill out Blood Retrieval Card completely.	If possible, sticker from patient band should be used to avoid transcription errors.
Administer any ordered pre-medications.	Oral pre-medications should be administered 30 minutes prior to blood or blood component administration. Intravenous pre-medications should be administered immediately prior to blood or blood component administration.
Obtain and document baseline vital signs.	

RETRIEVE	
Steps:	*Additional Considerations:*
The nurse or other qualified collector carries the completed Blood Retrieval Card to the Blood Bank.	Any trained KRMC staff may serve as a collector for blood or blood components.
The Blood Bank technologist selects the appropriate product by matching the information on the product tag to the Blood Retrieval Card.	Patient name and date of birth will be compared. No blood will be released without a completed blood retrieval card.
The technologist will inspect the product for leaks, abnormal color, clots, excessive air or bubbling, and unusual odor prior to releasing the product.	

The collector, using the white chart copy, and the technologist, using the pink tag copy and unit label will verify the following information: • Patient Name • Date of Birth • Unit Number • ABO and Rh Type • Expiration Date • Blood Bank ID Band Number • Component Type • Crossmatch Compatibility if applicable	Additional information, such as antibodies, or Exceptional Transfusion comments on the tag should also be read by the technologist.
The collector and technologist will confirm the blood or blood component is at the proper temperature using the temperature sticker on the unit.	Blood products will not be taken from the Blood Bank if the temperature indication sticker has darkened in the center.
The collector and technologist will sign the transfusion form to verify the above checks.	
Collector will return the unit to the patient bedside without delay. Collector must carry product in a sealed container. Blood and blood components require transportation by staff trained in safety precautions.	Blood products are transported for one individual patient. Transfusion should be initiated within 30 minutes of retrieval and completed within 4 hours. If transfusion is delayed, to the point these parameters cannot be met, the product should be immediately returned to the Blood Bank. If the product temperature indication sticker has darkened, following the start of the transfusion, the transfusion may be continued given the previously mentioned administration time line can be met. In the event the product temperature indication sticker has darkened, prior to the initiation of the transfusion, the product should be returned to the Blood Bank and not infused.

VERIFY	
Steps:	*Additional Considerations:*
The transfusionist (primary RN/LIP) will sign into the EMR, open the blood administration flowsheet, and release the correct product.	
The transfusionist and transfusion assistant (2nd RN/LIP) will verify the correct patient and product by scanning the patient's wristband.	The transfusionist and transfusion assistant have equal responsibility in all aspects of the verification process/safety check.

The transfusionist scans the unit ID and product code when prompted by the EMR.	
Complete a two-person verification of the following information with the transfusionist comparing the information on the ID bands and component bag to the transfusion assistant's data on the transfusion tag: • Patient blood bank ID and ID bands are attached to patient's wrist or ankle. • Patient's Full Name • Date of Birth • Blood Component Type • Unit Number • ABO Rh Type • Expiration Date • Compatibility (see attached ABO Compatibility Chart) • Blood Bank ID Number (only required for whole blood or PRBCs) The tranfusionist will enter the starting rate in the rate field and press enter.	Do not administer if inaccurate information. Report discrepancy to the blood bank.
If all information is correct, the transfusionist charts the baseline vital signs and clicks accept in the administration window.	
The transfusion assistant cosigns the administration in the dual sign-off window.	

ADMINISTER	
Steps: Obtaine baseline vital signs prior to the administration of any blood product.	*Additional Considerations:*
For Whole Blood, PRBC's, Leukodepleted PRBC's, and WBC's: • Use the SmartSite Blood Infusion Set • Clamp both branches of the Y tubing infusion set. • Prime tubing with normal saline. • Spike the blood component and open associated clamp. • When product is close, but has not yet reached patient in the administration tubing, set the rate to 120mL/hr.	• The SmartSite Blood Infusion Set comes in a bag and is also called Y-tubing. It has two bag puncture spikes: one for the blood product and one for the priming solution.
For Fresh Frozen Plasma and Cryoprecipitate: • Use the SmartSite Blood Infusion Set • Clamp both branches of the Y tubing infusion set. • Prime tubing with normal saline. • Spike the blood component and open associated clamp. • When product is close, but has not yet reached patient in the administration tubing, set the rate to 200mL/hr.	• The SmartSite Blood Infusion Set comes in a bag and is also called Y-tubing. It has two bag puncture spikes: one for the blood product and one for the priming solution.

For Platelets, Platelet Pheresis, and Clotting Factors: • Use the Blood Component Recipient Set With Standard Blood Filter and Luer Adapter • Spike the bag and prime the tubing using caution to avoid unnecessary exposure to blood products. • Connect directly to the saline lock or connect to the TKO infusion at the access port closest to the patient and under the electronic pump. • Infuse as rapidly as the patient will tolerate or "wide open".	• This tubing comes in a box with a 170 to 260 micron filter.
Remain with the patient and monitor closely for the first 15 minutes for signs of a transfusion reaction.	Signs and symptoms of major incompatibility or severe allergic reaction usually appear before the first 50mL of the unit has been transfused and include but are not limited to: 1. Rash 2. Wheezing 3. Difficulty Breathing 4. Chest Tightness 5. Flank Pain 6. Hypotension 7. Increased Heart Rate 8. Fever (temperature increase of 2ºF or 1ºC) 9. Chills 10. Shaking 11. Nausea and Vomiting 12. Headache See attached Transfusion Reaction Reference Chart
Obtain vital signs 15 minutes after the start of the transfusion and then every hour thereafter until the transfusion is complete.	
Before leaving the patient, instruct to report any signs of transfusion reaction or other unusual symptoms.	
At the completion of the transfusion, obtain a final set of vital signs.	
If you have more units to give, you may need to change the tubing.	Tubing must be changed every four hours or every 2 units, whichever comes first.
Empty bags and tubing must be disposed of in a regulated medical waste container.	*Policy # 44.65.00*

TRANSFUSION REACTION:
The transfusionist is responsible for acting upon, reporting, and documenting a transfusion reaction.

1. Stop transfusion.

2. Maintain IV site access and infuse new bag of saline.

3. Notify LIP.

4. Notify Blood Bank.

5. Return bag to Blood Bank for reaction investigation.

6. Complete the Report of Transfusions Reaction Form and return to Blood Bank with the suspected blood product.

7. Lab personnel will order a Transfusion Reaction work up.

EXCEPTIONAL TRANSFUSION:

Exceptional Transfusions include but are not limited to:

- Patient has a positive DAT (IgG and/or C3) warm autoantibody or drug induced
- Incompletely crossmatched
- Unit is less than fully crossmatch compatible
- Patient sample not properly identified
- Patient has positive direct coombs
- Patient has unidentified antibody(ies) that may or may not be clinically significant
- No typing sera available to type donor red cells for antigen to which patient possesses antibody

If an exceptional transfusion circumstance is identified by the Blood Bank:

- Blood Bank staff will notify the RN and request provider notification. The Blood Bank cannot release the blood product until the order to give is verified by the RN.
- Blood Bank staff will fax the Exceptional Transfusion form to the nursing unit.
- RN will notify the provider of the exceptional transfusion circumstance and request order to transfuse or hold blood product.
- Provider will sign the form if they are available.
- RN will document provider notification in the designated section of the Physician Notification of Exceptional Transfusion.
- RN will inform the patient that the blood product is identified as an exceptional transfusion and the provider has ordered to give. If the patient has questions or concerns with proceeding, the physician/pathologist will be notified with a request for additional discussion of risks/benefits with the patient.
- Exceptional Transfusion form will be returned to the Blood Bank with or without a provider signature when the units are retrieved. If the provider signature is not obtained, Blood Bank staff will coordinate obtaining the signature from the provider.

EMERGENCY BLOOD RELEASE:

An Emergency Blood Release for Urgent Need is considered an Exceptional Transfusion.

When the physician has ordered two units of leukodepleted red cells for transfusion regardless of crossmatch status, it will be deemed an Urgent Need and the following steps will be completed in addition to the Exceptional Transfusion protocol.

Steps:	*Additional Considerations:*
Nursing staff notifies blood bank of an Urgent Need by phone. • Nursing will identify patient and patient's location. • Blood bank will issue the red cells immediately.	An Urgent Need is considered an Exceptional Transfusion and the policy for Exceptional Transfusion will be followed in this case.

References:

AABB. (2012). *Primer of blood administration.* Bethesda, MD: AABB.

ABO Reference: https://www.utmb.edu/bloodbank/blood-bank-transfusion-services/component-therapy/blood-component-abo-compatibility-chart

Lippincott Procedures. Blood and blood product transfusion. Revised August 16, 2019, https://procedures.lww.com/lnp/view.do?pld=3868074&hits=transfuse,blood,product,transfusing,transfusion,products,transfused,transfusions&a=false&ad=false

Standard 62. Transfusion therapy. Infusion therapy standards of practice. (2016). *Journal of Infusion Nursing, 39,* S135-S137.

Transfusion Medicine Reviews, 2012-07-01, Volume 26, Issue 3, Pages 209-223.e3, Copyright 2012.

Vassallo, R., et al. (2013). "A compendium of transfusion practice guidelines (2nd ed.)"

www.ncbi.nlm.nih.gov/pmc/article/PMC5257198/

Attachments

- ABO Compatibility Chart.docx
- Administration of Blood and Blood Components.pdf
- Report Of Transfusion Reaction Form.doc
- Transfusion Reaction Reference.docx

Approval Signatures

Approver	Date
Kirk Harper: CNO	11/2020
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Applicability

WA - Kadlec Regional Medical Center