

Blood and Blood Products Administration

Objectives:

On completing this module, you will be able to:

- Identify blood group systems
- Describe compatibility requirements
- List steps in pick-up process
- Discuss administration procedures
- Describe correct documentation components
- Identify transfusion reaction symptoms

Blood Product Administration

Blood Compatibility

Which blood type can your patient receive?

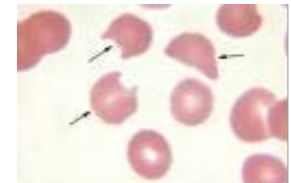
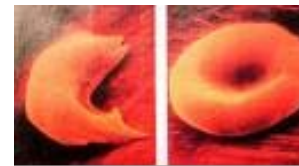
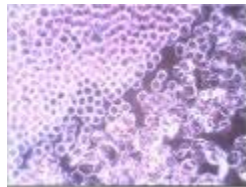
If Your Patient is Type	They Can Receive Pack Red Blood Cells From
A+	A+ A- O+ O-
O+	O+ O-
B+	B+ B- O+ O-
AB+	All Types
A-	A- O-
O-	O-
B-	B- O-
AB-	AB- A- B- O-

When a patient receives the wrong type of blood, the red blood cells can rapidly:

agglutinate (clump)

OR

hemolyze (rupture)



Blood Product Administration

RH Blood Group System



Indeterminate Blood Type

- **In some situations it may difficult to determine a patient's true ABO or Rh type due to a temporary or long term clinical condition.**
- **In these cases the laboratory will report the patient's blood type as "Indeterminate" ABO/Rh and provide compatible blood.**

Examples:

- **Unable to type weak D on a cord blood**
- **Stem cell transplant patient during an engraftment period.**

Blood Product Administration

Blood/Blood Products Administration

Requires a physician's order

- Blood Transfusion Order Set initiated by the physician for every blood/blood product transfusion order.
 - *Paper forms may be used for transfusions in clinics when applicable*

Transfusion Navigator in KP Health Connect

Transfusion Navigator

Transfusion Navigator Print Blood Bank Forms Transfusion Documentation PER Home

Transfusion Orders

Blood Bank Comm... [↘](#)

Now Orders [↘](#)

Conditional Orders [↘](#)

Medications [↘](#)

Other Blood Orders [↘](#)

Conditional Data

Lab Results [↘](#)

I&O [↘](#)

History

Products Given 24 hr [↘](#)

Products Given Total [↘](#)

Completed Orders [↘](#)

Use this field to indicate status of blood bank specimen (i.e., type/cross or type/screen)

Blood Bank Communication Order

Ordered
06/04/13 1529

BLOOD BANK COMMUNICATION

Comments: RN- Do not discontinue this order.
Ordering Provider: Umphrey, Christina Page (M.D.)

Question	Answer
Informed consent obtained: The advantages, risks, and complications of transfusion therapy, as well as the alternatives (including no transfusion), have been explained to the patient and/or family.	Yes
Paul Gann Blood Documentation:	Not enough time to pre-donate
Special Requirements:	None

- Requires informed consent by the patient and/or family
- As required by the Paul Gann Act, the patient/family has been given information on transfusions – *A Patient's Guide to Blood Transfusion* – unless not applicable.

Blood Product Administration

Blood/Blood Products Pick-up

- Prior to picking up blood verify physician's order
- Take and document pre-transfusion Vital Signs (VS) up to 60 minutes prior to transfusion (temperature, pulse, respirations and blood pressure) and assess for rash
 - If febrile, notify physician
- Start IV and give pre-medications
 - Start an IV using an appropriate gauge needle
 - Hang normal saline at a KVO rate
- RN, LVN, or Physician who will be transfusing the blood product **signs** a blood product pick-up slip (print from KPHC, or paper downtime form).
 - Slip includes the patient's name, medical record number (MRN), & blood product
 - Signing **means** the blood product pick-up slip has correct patient, MRN, & blood product and patient meets the condition for transfusion.

Always verify that the name & MRN on the blood product matches the name and MRN on the pick-up slip before starting the read-back.

Blood Product Administration

Blood Products Pick-up

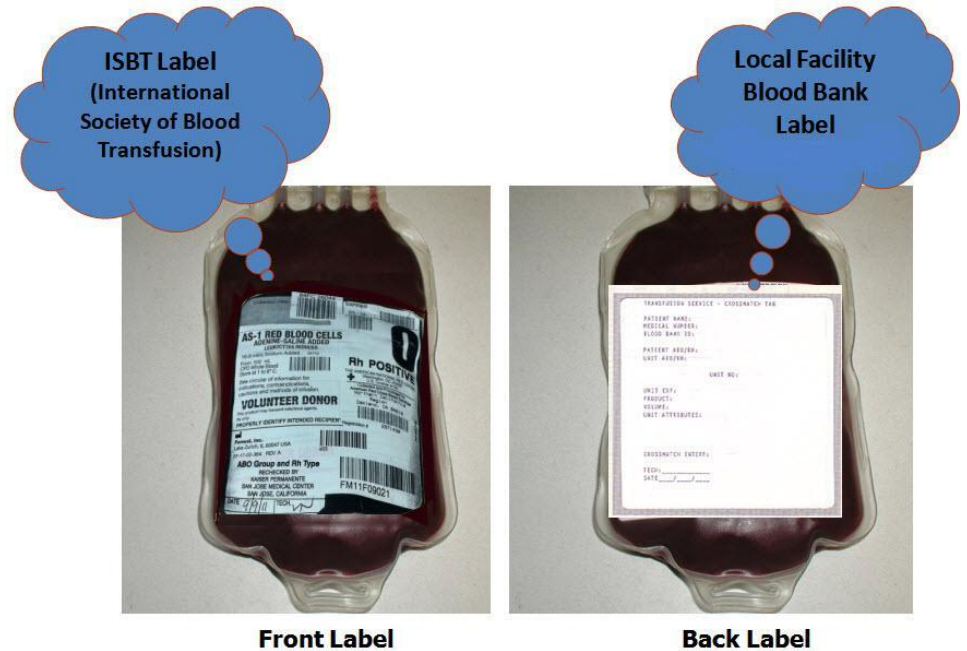
A **two-person read back** can be done between the Clinical Laboratory Scientist and a non-licensed person **qualified by training** to perform the read-back.

- Examples of non-licensed staff: Unit Assistant, Transporter, or Medical Assistant

Read-back the following with the Clinical Laboratory Scientist:

The front **AND** back labels of the blood bag compared with the Crossmatch Report.

- Patient's name
- Medical Record number
- ABO / Rh of patient
- ABO of unit and Rh if applicable
- Unit number
- Expiration date and time if applicable
- Special requirements
- Compatibility
- Visual inspection done by lab



Blood Product Administration

Blood Product Pick-Up



Unit Number: 13 Digits

ABO: The Blood Type & Rh Factor :
(Positive or Negative)

Expiration Date

Whole Blood approximate 500ml

Packed Red Blood Cells approximate 250 ml

Fresh Frozen Plasma



Platelet Concentrate: 1 unit/bag
Apheresis platelets = 4-6
platelet concentrates per bag

Blood Product Administration

Important Points to Remember

- Transfusion is **initiated within 30 minutes** from removal from Transfusion Service, **or it must be returned** to Transfusion Service.
- Complete transfusion within **4 hours** from pick up

Routine administration:

- Give only **one** type of component at one time.
- In most cases, only **one** unit of blood may be picked up at one time (**Unless** the Nurse has informed the laboratory that the patient is acutely bleeding and the products will be transfused immediately, in which case a second unit may be authorized for pick up at the same time)
- **NEVER** pick up a blood product for more than one patient at one time.

Blood Product Administration

Checking Blood Products at Bedside

Prior to transfusion verify physician's order

Ask patient to state their name when possible



Use the following:

- Patient's Armband
- Crossmatch Report
- Patient's label on Blood Bag
- Blood Bag Face Label (Front of bag)

2 RNs, RN and LVN, or RN and physician must verify at PATIENT'S BEDSIDE:

- Patient's Name
- Patient's Medical Record Number
- Blood Unit Number
- ABO /Rh of unit and patient
- Compatibility result if applicable
- Special requirements if any
- Expiration Date of the unit

Both verifiers sign on "transfusion record" of Crossmatch Report.

Name and credentials of second verifier is also documented in KP Health Connect.

Blood Product Administration

Starting Transfusion

- ✓ Explain procedure to patient/family
 - ✓ Take and document pre-transfusion Vital Signs (VS) (temperature, pulse, respirations and blood pressure)
 - ✓ Gently rotate & inspect for leaks or other abnormalities
 - ❖ *If anything appears abnormal, contact the blood bank or return the blood*
 - ✓ Attach blood or blood component to appropriate filter, if required.
- NO medication is ever added to blood prior to or during a transfusion**
- NO calcium or glucose solutions can be run through same IV tubing as blood/blood components**
- ✓ Document start date & time
- Do not transport the patient during the first 15 minutes of a non-emergency transfusion.** Patients with blood products infusing who are subsequently transported must be accompanied by RN or Physician.

Blood Product Administration

Vital Signs and Monitoring During Transfusion



Obtain first set of vital signs within 60 minutes to the start of the transfusion.

For the first 15 minutes, infuse slowly; closely monitor the patient for any reactions.

Continue to monitor the patient & document vital signs in Navigator:

- **15 minutes after start of transfusion**
- **Any VS taken during the transfusion**

Step 2 - Document Transfusion

Transfuse

New Reading

01/03/13

Open a new column to enter data

Vital Signs

Temp

Temp Source

Heart Rate/Pulse

Resp

BP

Blood Product Administration

Monitor During Transfusion- Any Reaction?

Signs and symptoms of a transfusion reaction may include:

- **Acute hemolytic/Incompatibility:** fever, flushing, back pain, wheezing, anxiety, bloody urine
- **Febrile: (1⁰ C or 2⁰ F > baseline)** typically only fever is present; however, may experience rigors, shaking, chills, hypotension, vomiting
- **Anaphylactic:** Dyspnea, wheezing, anxiety, hypotension, bronchospasm (severe cases)
- **Allergic:** Maculopapular rash and/or Urticaria (*May not need to D/C transfusion for this type of reaction; follow physician orders)

Transfusion related acute Lung Injury (TRALI)

consider (within 6 hours of transfusion) when symptoms include :

acute shortness of breath, fever, chills, cyanosis, hypotension, and/or x-ray findings of pulmonary edema, without cardiac failure

Transfusion Associated Circulatory Overload (TACO)

may occur with the transfusion of large volumes or rapid transfusion.

Symptoms include:

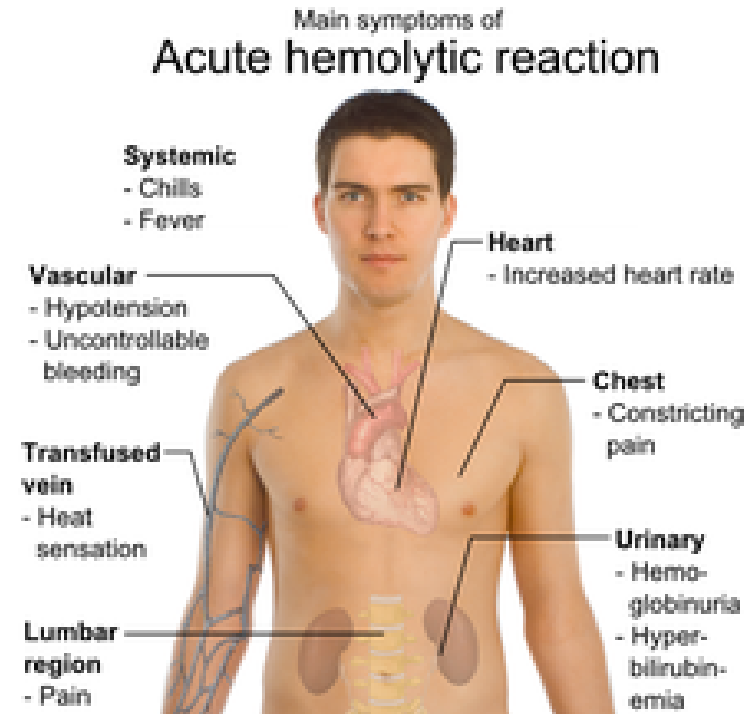
- hypertension
- shortness of breath
- acute pulmonary edema **with** cardiac involvement.

Blood Product Administration

For signs of transfusion reaction

STOP the blood transfusion immediately

- Maintain IV patency.
- Notify physician & Blood Bank.
- Stay with patient & monitor vital signs.
- Complete Transfusion Reaction Investigation Form.
 - Obtain blood and urine samples and label as Post-Transfusion.
 - Return form, unit of blood with administration set, and lab samples to Blood Bank.
- Document symptoms and interventions including notification and continuing assessment.



Blood Product Administration

Transfusion Reaction (Cont.)

✓ **Notify the Blood Bank**

✓ **Complete the entire blue area of the Transfusion Reaction Investigation Form**

(If transfusion vital signs have been entered in KPHC, your facility may not require documentation of the vital signs on the paper crossmatch form.)

THE PERMANENTE MEDICAL GROUP, INC.
TRANSFUSION REACTION INVESTIGATION
 REPORT ALL ADVERSE REACTIONS ASSOCIATED WITH THE TRANSFUSION OF BLOOD OR BLOOD COMPONENTS.

BLUE SECTION TO BE COMPLETED BY RN OR MD

ROOM NO. _____

RESPONSIBLE PHYSICIAN NOTIFIED, MD _____ DATE _____ TIME _____ DRAWN BY/COLLECTED BY _____ DATE _____ TIME _____ IMPRINT AREA _____

CLINICAL SYMPTOMS: (Please check)

Nausea Chest pains
 Vomiting Shock
 Headache Tachycardia
 Joint pain Abdominal cramps
 Chills Lower back pain
 Shaking chills Bleeding (specify site) _____
 Fever Other _____
 Shortness of breath

	PRE REACTION	REACTION	POST REACTION	TRANS-FUSION	TIME	DATE	APPROX. VOL. OF UNIT TRANS-FUSED
Temp.				Started			
BP				Stopped			ml
Pulse							

OTHER INFORMATION

Recent hematuria
 Blood warming system used
 Patient under anesthesia
 Patient is on anticoagulant(s) (Specify) _____

PRODUCT

Packed red blood cells
 Plateletpheresis
 Frozen plasma
 Other _____

CLERICAL CHECK: NURSING Please write information in full. Do not use ✓.

	PT. LAST, FIRST NAME	PT. MR NO.	PT ABORH	UNIT NO.	UNIT ABORH
WRIST BAND					
BAG TAG					
TRANSFUSION REPORT FRM					
BAG FACE					

Clerical match is in agreement.
 Not in agreement, make comment below.

COMMENTS: _____

SIGNATURE _____ DATE _____

LABORATORY EVALUATION: TRXN CHECK

	BBID #	PT. LAST, FIRST NAME	PT. MR NO. ACCESSION #	PT ABORH	UNIT NO.	UNIT ABORH
PRETRANS SPECIMEN						
BAG TAG						
TRANSFUSION REPORT FRM						
BAG FACE						

1. Investigation for clerical errors of bag label and all prereaction records.
 2. Visual inspection and comparison of postreaction serum or plasma for hemolysis.
 3. ABO/Rh and Direct antiglobulin test for postreaction specimen.
 4. Print appropriate computer documentation. Exp. date of unit returned _____

1. Clerical Check (TRXN CLER) No Error Found See Comment
2. Visual Hemolysis (TRXN HEMO) PRE POST Negative Positive (poly) Blood Pos Neg
 Yes No Yes No Positive (IgG) Positive (complement) RBC _____/hpf

3. Direct Antiglobulin Test (TRXN DAT I) Negative Positive (poly)
 Positive (IgG) Positive (complement)

4. ABORH Rechk **5. Urine, if Needed**

CULTURED/GRAM STAIN Yes No
 GRAM STAIN ACC. # _____ DATE _____ TIME _____
 POSTREACTION ACC. # _____ CLS _____

LAB COMMENTS _____

Initiate extended investigation if indicated by the above tests. Notify pathologist and attending physician.

PATHOLOGIST COMMENT (TRXN PATH): _____

FACILITY CODE _____ SIGNATURE _____ DATE _____
 MD _____

09632-000 (REV. 3-08)

Blood Product Administration

Finish documenting the transfusion

In the KPHC Transfusion Navigator- 2 Steps

The screenshot displays the KPHC Transfusion Navigator interface. On the left, a sidebar contains a 'Transfusion Navigator' menu with three steps: 'Step 1 - Check Transfusion Medication', 'Step 2 - Document Transfusion' (circled in red), and 'Step 3 - Complete Transfusion Order' (circled in green). A red box labeled 'Step 1' has an arrow pointing to the 'Transfusion' section of the main form. A green box labeled 'Step 2' has an arrow pointing to the 'Order Status' dialog box.

The main form is divided into two sections:

- Transfusion**
 - Status: Started, **Stopped**, Restarted
 - Rate of Transfusion (ml/hr): []
 - Method of Transfusion: Gravity, Infusion Pump, Push
 - Symptoms of Transfusion Reaction?: No, Yes (++)
- Post Transfusion**
 - Post Transfusion Status: **Completed**
 - Duration of Transfusion (hrs): 3
 - Red Blood Cells Administered (+ml): 300
 - Normal Saline Admin (+ml): 100

The 'Order Status' dialog box is open, asking: 'Are you sure you want to change order status to "Complete"?'. The 'Yes' button is circled in green. Below the dialog, a table shows a list of orders:

Order ID	Order Date	Order Description	Status
*** Packed Red Blood product transfusion	Ordered 11/25/13 0829	TRANSFUSE PACKED RED BLOOD CELLS Number of units to Type and Cross: 2 This is an order to type, cross-match and transfuse NOW. RN- when you have completed ALL ordered transfusions please complete or clean up this order. HGB 10.4/05.2 . Complete	Complete

Comments: This is an order to type, cross match and transfuse NOW. RN- when you have completed ALL ordered transfusions please complete or clean up this order.

Blood Product Administration

Completing Transfusion

- **Complete chart & laboratory copies of Crossmatch Report:**
 - Document completion/discontinued time.
 - Document amount transfused (unit packed cells).
 - Take & document post-transfusion VS **only in KPHC**
 - Discard blood bag in red-bagged containers.
 - Return the laboratory copy of the cross match report to Transfusion Service per local policy.
 - Place chart copy of the Crossmatch report in the min-rec.
- **Obtain post-transfusion HCT, per physician order.**
- **If the patient is being discharged after the transfusion, provide written instructions regarding possible reactions.**

Name: _____

Date: _____

Score: _____

Blood and Blood Product Administration RN Only

1. A safety check is performed in the lab between a Clinical Laboratory Scientist (CLS) and the person picking up the blood and again between one RN and another licensed nurse or physician at the bedside. Safety checks require checking patient name, MRN, patient ABORh, blood unit number, blood product ABORh type and expiration and any special requirements. Cross checking should include the cross match form, the patient arm band, and both front and back labels of the blood product. T F
2. Common symptoms of transfusion reaction may include chills followed by fever, joint pain, and/or wheezing. T F
3. Patients must have a second IV line to infuse other medications/solutions if needed. T F
4. Blood should only be obtained from the blood bank when transfusion is ready to begin, and should be hung immediately once it is brought to the unit. Pre-transfusion vital should be done 60 minutes prior to-transfusion, in case the patient is not stable enough for the transfusion. Once picked up from the lab, if there is an unexpected delay, blood may be returned within 30 minutes from when it was issued. T F
5. Transfusion Related Acute Lung Injury (TRALI) is a diagnosis of non-cardiogenic pulmonary edema with no there apparent cause, occurring within 6 hours of a transfusion. T F