



Transfusion Support for Clinical Services

Introduction:

This document provides guidelines for blood product use and turnaround times (TAT's) from the Blood Bank (BBK) Transfusion Services located at Medical Center of the Rockies (MCR), Poudre Valley Hospital (PVH), and Greeley Hospital (GH).

Blood Products:

- **Red Blood Cells (RBC) and Low Titer O Whole Blood (LTOWB):**
 1. All RBC & LTOWB products are leukocyte reduced by filtration. Leukocyte reduced units are considered equivalent to CMV-negative units.
 2. An automatic "Keep Ahead" order will be initiated by BBK in massive bleed situations.
 3. Rh-Negative massive bleed patients, with the exception of females (aged 0- 50) may be switched to Rh-Positive Red Blood Cells at the discretion of the BBK in order to conserve D-Negative blood.
 4. Uncrossmatched blood products that are stocked in Emergency Departments (ED) for ED use only – the units may not be removed for use by anyone other than ED staff or critical care RN for ED patient use.
 5. Irradiated RBC units are not stocked at MCR or GH. In an emergency it may be necessary to transfuse non-irradiated blood products until irradiated products are available.
 6. LTOWB units are stocked at only MCR.
 7. GH only provides emergency release blood for neonates.
- **Platelets:**
 1. All Platelet products are supplied as Platelets, Apheresis and may be manufactured using traditional methods or using pathogen reduction treatment (PRT).
 2. One unit is the standard dose and is equivalent to 6-8 random Platelet Concentrate products.
 3. PRT Platelets are equivalent to irradiated platelet products.
- **Plasma:**
 1. Plasma may be supplied as Thawed Fresh Frozen Plasma, Thawed Plasma, or Liquid Plasma, depending upon the circumstances. Other equivalent plasma components may be substituted as available in inventory.
 2. Individual units are only pooled for dialysis patients undergoing plasma exchange. Only 3 or more units will be pooled.
- **Cryoprecipitate:**
 1. Supplied in pools of 4 or 5 by manufacturer.
- **Whole Blood, Reconstituted**
 1. Special order from outside source, usually in Denver. Expires 24 hours from the time of manufacture.
 2. Requires Blood Bank Medical Director approval prior to ordering from the outside source.
- **Washed Red Cells and Platelet Components:**
 1. Special order from outside source, usually in Denver. Expires 24 hours from the time of manufacture.
 2. Requires Blood Bank Medical Director approval prior to ordering from the outside source.

Substitutions:

1. At the discretion of the Blood Bank, irradiated products may be substituted for non-irradiated products as necessary in order to prevent wastage of blood products (this practice incurs no significant risk to the patient). If such a substitution is done, the patient will NOT be billed for the irradiation procedure.
2. Irradiated products will be substituted for non-irradiated products if there is a current standing order in Blood Bank, HLA-matched product is requested or directed donations are from a blood relative.
3. Leukocyte reduced products will be substituted for CMV-negative requests.
4. Thawed Plasma will be substituted for Fresh Frozen Plasma.
5. Liquid Plasma is substituted for Fresh Frozen Plasma in massive transfusion situations.

Irradiation:

1. Irradiation of blood is performed in order to inactivate T-cell leukocytes that may cause transfusion associated graft-vs-host disease.
2. Non-cellular blood products (plasma products) are not irradiated.
3. Blood products are irradiated with a minimum central dose of 25Gy.
4. Situations suggesting irradiation of cellular blood products are listed in the Circular of Information for the Use of Human Blood and Blood Components (located on The Source under Policies and Procedures, and the Lab Test Catalogs (PVH/MCR & Greeley) located on The Source under Applications.
5. Providers are asked to initiate and discontinue irradiation requirements by placing the "Irradiation of Blood Products" order in EPIC.

Washed Red Cells and Platelet Components:

1. Washing of Red Cells and Platelets is usually used to reduce exposure to plasma proteins or acellular constituents.
2. Washed components are necessary in the treatment of IgA deficient patients or in rare recipients who experience anaphylactic reactions due to other plasma components.
3. These products are not prepared by PVH, MCR or GH and must be special ordered from outside sources, usually from Denver*

Hemoglobin S (HbS):

1. Sick Cell patients are to be transfused with Red Cell units known to be negative for HbS
2. Reconstituted Whole Blood units for neonatal exchange transfusion are to be negative for HbS.

Turnaround Times:

Blood Product Requested	TAT with Current Crossmatch	TAT with Current Type & Screen	TAT with Current BBHOLD	TAT with no Sample in BBK
Blood products for emergency use	Available upon request.			
Red Blood Cells, crossmatched	STAT: 10 min. or less ROUTINE: 5-30 min.	STAT: 10 min. ROUTINE: 5-30 min.	STAT: 1 hr. ROUTINE: 3 hrs.	STAT: 1 ½ hrs. ROUTINE: 3 hrs.
Red Blood Cells, crossmatched and clinically significant	STAT: 1 hr. or longer*, depending upon antibody	Type and Screen is automatically converted to a	STAT: 2-3 hrs. or longer*, depending upon	STAT: 2-3 hrs.* or longer, depending upon

antibodies are currently or in past.	ROUTINE: 1-2 hrs. or longer*	crossmatch	antibody ROUTINE: 3-6 hrs. or longer*	antibody ROUTINE: 3-6 hrs. or longer*
Red Blood Cells, Irradiated Crossmatched **	STAT: 5-30 min.** ROUTINE: 10-30 min.**	STAT: 10–30 min.** ROUTINE: 10-30 min.**	STAT: 1 hr.** ROUTINE: 3 hrs.**	STAT: 1 ½ hrs.** ROUTINE: 3 hrs.**
Reconstituted Whole Blood*	Obtained from outside sources, usually in Denver*			
Red Blood Cells, Washed*	Obtained from outside sources, usually in Denver*			

Note:

In critical or massive bleed situations, non-irradiated, non- antigen-tested units may be issued uncrossmatched.

*Units may be obtained from outside sources, usually in Denver and require additional transportation time.

**Irradiated RBC Units are not stocked at MCR and GH and require transportation time for delivery from PVH

Blood Product	TAT with UCHealth Historical ABO type (no specimen required)	TAT with BBHOLD & Retype necessary	TAT with No UCHealth blood type history (need specimens collected)
Platelets*	STAT: 10 min. or less* ROUTINE: 5-30 min.	STAT: 15-60 min* (depending on retype collection) ROUTINE: 1 hr.	STAT: 15 min. from time samples are received in BBK* ROUTINE: 3 hrs.
Platelets, Irradiated **	STAT: 15 min. or less** ROUTINE: 1 hr. or less	STAT: 30 min. or less** ROUTINE: 1 hr. or less	STAT: 30 min. or less ** from time a sample is received in BBK ROUTINE: 3 hrs. or less
Platelets, Crossmatched	Must be ordered in advance and may take 1-2 days to obtain product from outside sources, usually in Denver.		
Platelets, HLA-matched	Must be ordered in advance and may take 3-5 days to obtain product from outside sources, usually in Denver.		
Fresh Frozen Plasma***	STAT: 15-30 min. or less ROUTINE: 1-2 hrs. Note: A minimum of 1 ½ - 2 hours is needed for plasma exchanges requiring several liters of product, preferably 24- hour notice.	STAT: 30-45 min. or less ROUTINE: 3 hrs.	STAT: 1 hr. or less ROUTINE: 3 hr.
Frozen Plasma, Cryo-Reduced (FP, CR) – not routinely stocked Note: FP,CR is the Product of choice for Thrombotic Thrombocytopenia Purpura &/or Hemolytic Uremia Syndrome	If product is in stock: STAT: 15-30 min. ROUTINE: 1-2 hrs. If product not stocked, add at least 3 hours. Note: A minimum of 1 ½ - 2 hrs. is needed for plasma exchanges requiring several liters of product, preferably 24 hr. notice.	If product is in stock: STAT: 30-45 min. ROUTINE: 3hrs. If product not stocked, add at least 3 hours.	If product is in stock: STAT: 1 hr. ROUTINE: 3 hrs. If product not stocked, add at least 3 hours.

Cryoprecipitate	STAT: 15-30 min. ROUTINE: 1-2 hrs.	STAT: 30-45 min. ROUTINE: 3hrs.	STAT: 1 hr. ROUTINE: 3 hrs.
Granulocytes	Not available. Special arrangements would be needed to obtain product from outside sources, usually in Denver.		
Rh Immune Globulin	Supplied through Pharmacy.		
Albumin	Supplied through Pharmacy.		
Factor Concentrates	Supplied through Pharmacy.		

Note:

* Platelet products are generally in stock at each facility, but due to the short expiration dating (5-7 days) there may be times when these products are not yet available at every location, or need to be restocked due to increased usage. Courier times for STAT deliveries usually exceed an hour, even in emergency situations.

**Irradiated Platelet products are not stocked at MCR and GH, however PRT Platelets may be in stock at any location.

***Pooling is performed automatically for plasma exchanges.

References:

LVI - AABB Technical Manual, current edition

LVI - AABB Standards for Blood Banks and Transfusion Services, current edition