# Applicable Laboratory(s)):

[x]  North Carolina Baptist Hospital (NCBH)

[ ]  Lexington Medical Center (LMC)

[ ]  Davie Medical Center (DMC)

[ ]  Wilkes Medical Center (WMC)

[ ]  High Point Medical Center (HPMC)

[ ]  Westchester

[ ]  Clemmons

# Policy Purpose

The purpose of this policy is platelets are transfused to prevent or control bleeding in patients with decreased platelet count, undergoing a hemostatic challenge such as a surgical procedure and qualitative platelet defects. Platelets are collected from a single donor and processed to contain a minimum dose of 3.0 x 1011. Platelets may be prepared by different processes by the blood supplier (PAS, Pathogen Reduced).

# Scope

This policy applies to

Procedure owner/Implementer: Blood Bank Managment

Procedure prepared by: Christina Warren

Who performs procedure: Blood Bank

# Definitions

1. Policy: As defined in the Policy on Creating and Amending Policy, a statement of principle that is developed for the purpose of guiding decisions and activities related to governance, administration, or management of care, treatment, services or other activities of WFBH.  A policy may help to ensure compliance with applicable laws and regulations, promote one or more of the missions of WFBH, contain guidelines for governance, and set parameters within which faculty, staff, students, visitors and others are expected to operate.
2. WFBH Lab System: Wake Forest Baptist Lab System is a health system that includes Wake Forest Baptist Medical Center and all affiliated organizations including Wake Forest University Health Sciences (WFUHS), North Carolina Baptist Hospital (NCBH), Lexington Medical Center (LMC), Davie Medical Center (DMC), Wilkes Medical Center (WMC), High Point Medical Center (HPMC), Lab at Westchester and Lab at Clemmons.
3. **PAS Platelets:** Platelets prepared by removing approximately 65 to 80% of the plasma with the addition of a Platelet Additive Solution (PAS).
4. **LVDS Platelets**: Large Volume Delayed Sampling (LVDS) involves taking a larger volume from each platelet unit and inoculating the sample into aerobic and anaerobic culture

media 36-48 hours after collection (vs. the previous 24 hour time frame). This FDA approved single-step process uses at least 16 mL per unit and additional time prior to sampling to detect any bacterial growth. No other bacterial detection steps are needed prior to transfusion using this method.

1. **Pathogen Reduced Platelets (PR):** The INTERCEPT method to produce pathogen-reduced platelets uses a chemical agent (amotosalen) that is activated by ultraviolet A (UVA) light to bind nucleic acids so that DNA cannot replicate and thus the cell cannot replicate. It is effective against many infectious agents, including viruses, bacteria, parasites, and protozoa. Red cells and platelets do not have nucleic acids and do not replicate. Lymphocytes do have nucleic acids; therefore, their proliferation is prevented by PR treatment. Pathogen Reduction is equivalent to irradiation.
2. **PI Platelets (Pathogen Inactivated):** this is a term used to refer to Pathogen Reduced Platelets
3. **Low Yield Platelets:** Platelets with a count between 2.5 and 2.9.
4. **HLA-matched Platelets:** Platelets that have been matched for HLA Class I Antigens (HLA-A and HLA-B) for patients that appear to be immune refractory due to HLA antibodies.
5. **BAD File:** Blood Bank Administrative Data File. The location of a patient’s special needs and requirements.
6. **Sunquest:** the Blood Bank computer system.

# Policy Guidelines

1. **Apheresis Platelets, Leukoreduced (Single Donor Platelets) are prepared by hemapheresis. This component should contain ≥ 3.0 x 1011 platelets in 75% of the units tested and is equivalent to approximately 6 units of random donor platelets (platelet concentrates.)**
	1. Plateletpheresis is the preferred product.
	2. Suppliers are responsible for bacterial detection testing
	3. All products are requested leukoreduced.
	4. Prestorage leukoreduced blood and platelets are a safe alternative to CMV seronegative units for reducing transfusion transmitted CMV infection
		1. When CMV negative is requested, CMV negative will be ordered from the blood supplier on a case by case basis pending MD review.
		2. During the review interval, CMV negative will be issued, if available, from the general inventory.
		3. If none is available, then leukoreduced blood products will be issued to avoid delay.
	5. HLA-matched or crossmatched plateletpheresis unit may be given to patients that do not require HLA-matched/irradiated or crossmatched if not used for original patient.
		1. Do not add an HLA instruction if the HLA platelet is given to a patient not requiring HLA and the platelet will be charged as just a plateletpheresis.
	6. Provide Hematology-Oncology patients with pathogen-reduced platelets when available and PAS platelets when available if pathogen reduced platelets are not available.
	7. PAS plateletpheresis unit or Pathogen reduced plateletpheresis units should be given routinely to those patients who had a non-hemolytic febrile adverse reaction.
	8. Pathogen Reduced platelet pheresis units CAN be given to NEONATES.
	9. Plateletpheresis units that contain volumes >400ml should not routinely be received. During shortages or medical clearance these may be needed. Larger volume plateletpheresis units should be given to adults of the same ABO.

Example: Group O plateletpheresis, 422 ml – Give to an adult that is Group O

* 1. The Medical Director may determine that a patient should receive a certain type of platelet based on the patient’s history:
		1. Only PAS PI Platelets
		2. Only PAS Platelets (either PI or not PI)
		3. Only PI Platelets (either PAS or not PAS)
		4. The corresponding special messages will be in the patient’s Bad File.

* 1. Low yield platelets should be given preferentially to bleeding patients and not ORC patients or other patients for prophylactic treatment.
1. **Inventory:**
2. Platelet inventory is done at the beginning of each shift and tracked on the Blood Bank Platelet Inventory sheet.

*Refer to BB-FORMS-0108 BB Platelet Thawed Plasma Inventory*

* + Log in to SmarTerm
	+ Function: BBR
	+ Printer: 9930 or 9931
	+ ?: 2 (Product File List)
	+ Hospital ID: AHWA
	+ Area: WIN
	+ Enter through Area and Hospital ID
	+ Accept (A), Modify (M), or Reject (R): A
	+ Earliest Expiration Date: T
	+ Earliest Expiration Time: Enter
	+ Component Type/Group: PLTG
	+ Status: Enter (ALL)
	+ ABO-RH: Enter (ALL)
	+ Print Detail? Y/N: Y (if you say no, unit numbers will not print)
	+ Complete/Incomplete/All C/I/A: Enter or A
	+ Active Units Only? Y/N: Enter or Y
	+ Accept (A), Modify (M), Or Reject (R): A
1. The minimum and maximum number depends on daily usage and day of week.
	1. Weekdays, the optimal level is approximately 30 platelet pheresis.
	2. Weekends and holidays, the optimal level is approximately 20 plateletpheresis.
	3. Judgment needs to be utilized if usage is unexpectedly high or low.
	4. ARC standing order shipments must be cancelled in full with a 12 hour notice. ARC cannot cut partial orders. If partial standing order cuts are needed, the full order must be cut and an ad hoc order placed. Be cautious in doing this as best dated plts arrive on standing orders.
2. A standing order of plateletpheresis is received daily and printed on the Blood Bank Inventory form.
	1. Carefully examine the number and expiration dates of platelets in inventory to determine if additional platelets are needed in addition to the standing order.
	2. Consult with management as necessary to adjust inventory based on platelet availability and usage.
	3. Request pathogen reduced plateletpheresis (PR) units routinely. If PR not available, check other suppliers before accepting PAS platelets.
	4. Standing orders may be modified by Blood Supplier to fit availability.
	5. Standing orders may be split and/or sent by special courier.
	6. Short dated units should be monitored.
* Make sure platelets that do NOT qualify for credit are used before platelets that do qualify for credit, if both are expiring on the same day. Short date units should have the attribute CDIE added to document that it was received with 24 hours or less of expiration left.
* Be cautious in accepting all platelets expiring on the same dates or accepting platelets that will result in all platelets in inventory expiring on the same date.
* Be cautious in accepting units that have *less than 24* hours left when they arrive.
* Credit for short dated Platelets:
	+ *More than* 24 hoursleft before expiration = No Credit
	+ 24 hours or *less* left before expiration= Yes Credit (ARC)
		- Add the comment: CDIE to the unit in Blood Product Entry

 *Refer to BB-FORMS-0108: BB Platelet Thawed Plasma Inventory*

 *Refer to BB-FORMS-0153: Standing Order for Blood Products*

* 1. As of September 15, 2022 100% of inventory should be Pathogen Reduced Platelets.
	2. Additional Platelets may be ordered if needed by calling blood supplier.
		1. Order the number of platelets needed for inventory.
		2. Determine if any specific types are needed or if Rh negative platelets are needed and request as part of the order.
		3. Document orders on the Blood Bank Platelet Inventory form. Refer to average daily platelet usage numbers to determine future needs.

*Refer to BB-FORMS-0108: Blood Bank Platelet Inventory Form*

*Refer to BB-POL-0028: Blood Product Inventory*

*Refer to BB-SOP-0015: ARC Connect Online Blood Ordering System*

* 1. (RDP) Random donor platelets are currently not ordered or stored in inventory.
	2. All platelet pheresis units entered into inventory in the BB LIS must have platelet counts entered as comments 0when available.
	3. During times of platelet shortage or medical clearance, the medical director has approved the acceptance of 5 day PAS platelets. If the need arises to order 7 day PAS platelets, prior approval from the medical director will be needed. These platelets are locally prepared from The Blood Connection.
1. **General Indications for platelet transfusions**
	1. Prevent spontaneous hemorrhage or treatment of active hemorrhage in patients with thrombocytopenia or platelet dysfunction
2. **Contraindications for Platelet transfusions**
	1. Patients with thrombotic thrombocytopenic purpura (TTP) except in life or organ-threatening hemorrhage.
	2. Prophylactic platelet transfusion in a stable patient with platelet refractoriness of known cause.
	3. Platelet transfusion in Immune Thrombocytopenia (ITP) is controversial.
3. **Special order platelets**
	1. HLA, Crossmatched or Direct Donor platelet pheresis are ordered by the physician, with Medical Director's approval when patient is refractory to random selected platelets or demonstrates a platelet antibody.
		1. These patients should have had HLA antibody testing performed to determine not only the HLA type, but also any HLA antibodies that may be present and antigens to avoid giving.
	2. HLA matched and directed donor platelets MUST be irradiated upon receipt.
	3. HPA antigen-negative (Ex. HPA-1, also known as PLA1) platelets are ordered when the patient has HPA-antigen antibodies and requires platelet transfusions. Consult with the Medical Director about the need for HPA-antigen negative platelets.
		1. Maternally derived passive HPA antibodies in neonates may also necessitate

the use of HPA antigen-negative platelets.

1. Special orders are documented on the Special Order Form.

*Refer to BB-FORMS-0107: Special Order Form.*

1. Refer to 2.0 Inventory for ordering information.
2. The Special Platelet Orders for Review form should be completed and given to the Medical Director/Pathology Resident daily to evaluate future HLA orders.

*Refer to BB-FORMS-0151:BB Special Platelet Orders for Review.*

1. Label with WFBH Antigen Typing card with Name, MRN and date of need.
2. **Blood supplier unable to Supply Special order Platelets**
	1. HLA matches and platelet crossmatch compatibility take precedence over ABO and/or Rh.
	2. The blood supplier may not always be able to find HLA matched platelets for a patient. When this happens the platelet inventory within the Blood Bank should be searched to find the best match.
	3. The best match in the order of preference per Medical Director is:
		1. **Identical matching** of HLA-A and HLA-B patient types.

Example: Patient types A1, A2, B8, B27. Platelet is available: A1, A2, B8, B27.

* + 1. **Best match:** Identical matching is not available and patient has HLA antibodies (HLA types to avoid).

Example:

Patient types A1, A2, B8, B27 and has antibodies against (avoids): A22, A24, B61, B26. There is not an identical match but there is a platelet without the avoid antigens: A35, A40, B51

* + 1. HLA type of best matched platelet shall be entered into Sunquest
		2. The medical director shall be consulted if unable to find any meeting the criteria needed.
1. **Specimen**
	1. When transfusing platelets, a patient’s sample must be tested for ABO/Rh within 12 months of the date of transfusion.
2. **Storage of Platelets**
	1. Platelets are stored between 20-24 ⁰C with gentle agitation to facilitate gas exchange within the bag and reduce the formation of aggregates.
		1. The maximum time without agitation if stored between 20-24⁰C is 24 hours.
		2. Consult with medical director or management before discarding platelets that have been issued and returned, if questionable.
	2. Platelets, when shipped, need to maintain the temperature of 20-24⁰C.

*Refer to BB-POL-0073: Shipping Regulations for Blood and Blood Products*

* 1. Surfaces and work areas in the CP area should be disinfected at least daily using appropriate disinfecting wipes.
	2. Platelet units must be handled with care during unpacking.
1. Ensure manipulation does not cause pinching, friction, or excessive pressure
2. Units should be fanned out on countertop, not stacked on top of each other



* 1. Visual inspection of platelets is required upon receipt, when allocating and at issue.
	2. Platelets with grossly visible aggregates shall not be used. They shall be returned to the supplier. Refer to *BB-POL-0062: Blood and Blood Products - Storage, Transport, Return and Reissue.*



* 1. Platelet units are to be placed on rotator shelves in portrait position, flat against the rotator drawer with the label up, away from drawer/slide interface, tucking tubing of units against front lip of drawer. Care should be taken to ensure units are not overlapping. The edges of bags and/or tubing should not hang over the front of the drawer.



* 1. There is a 20-24⁰C Credo Cube available for platelet storage in the event of prolonged power outages.
1. **Platelets Transfused Out of Group**
	1. Patients may develop a positive Direct Antiglobulin Test.
		1. If anti-A, anti-B or anti-A,B is eluted from patient’s cells who has received out of group platelets, notify management/medical director.
	2. Medical Director may request specific types for patients depending on clinical picture.
2. **Platelet Testing for HPA1 and other antigens**
	1. Special antigen negative platelets may be ordered from blood supplier.
3. **Documentation of Platelet Transfusion for Medical Review**
	1. The following information is documented:
		1. Patient name and medical record number
		2. Patient’s ABO/Rh
		3. Patient’s Location
		4. Medical Service of patient
		5. Special Criteria applicable to patient (Irradiated, etc.)
		6. Platelet’s description, unit number and blood type
		7. Patient’s platelet count each day
		8. Reason for the transfusion.
	2. The Medical Director reviews the Platelet Monitoring Report.
		1. Medical Director retains these for 6 months and then they are discarded.
		2. Medical Director will discuss platelet indication nonconformance with ordering physician.
4. **Selection of ABO/Rh for Platelet Transfusion**

*Refer to BB-POL-0052: Blood Selection Guide*

*Refer to BB-POL-0038: Emergency Blood Protocols*

*Refer to BB-POL-0055: Transplant Testing Protocols*

* 1. BMT Patients
		1. BMT patients are under BMP protocol and must be provided the compatible ABO type because they are undergoing or have been engrafted.
		2. Specific ABO/Rh types required (determined by Medical Director or Management) will be documented in the patient’s BAD file in Sunquest.
		3. BMT protocols may require washed platelet pheresis.

| **Product** | **Patient Group****Rh positive****May receive either** **Rh positive or Rh negative.** **(*Conserve Rh negatives*)** | **ADULTS****(Order of preference)** | **PEDIATRIC****(<16 years old; typically <50kg.)\*\*** | **NEONATES (Order of preference)** | **NEONATES** **ABO Incompatible Washed or** ***Emergency Release if needed emergently*** **(Order of preference)** | **BMT if requirements**  |
| --- | --- | --- | --- | --- | --- | --- |
| **PLATELETS****PLATELETS** | **A pos** | **A, AB, B, O** | **A, AB** | **WASH B,O** | *Refer to BB-POL-0055*Follow instructions in computer.  |
| **B pos** | **B, AB, A, O** | **B, AB** | **WASH A,O** |
| **O pos** | **O, A, B, AB** | **O, A, B, AB** |  |
| **AB pos** | **AB, A, B, O**  | **AB** | **WASH A,B,O** |
| **ABO Unknown / Rh pos** | **AB , A, B, O** | **AB** | **WASH A,B,O** |
| **Patient Group****Rh negative or Rh unknown**Should receive Rh negativeif possible\* | **ADULTS****(Order of preference)** | **PEDIATRIC****(<16 years old; typically <50kg.)\*\*** | **NEONATES (Order of preference)** | **NEONATES** **ABO Incompatible****Washed or** ***Emergency Release if needed emergently*** **(Order of preference)** | **BMT if requirements** |
| **A neg** | **A neg, AB neg,** **B neg, O neg** | **A neg, AB neg** | **WASH B neg, O neg** | ***Refer to BB-POL-0055: Transplant Testing Protocols***Follow instructions in computer. |
| **B neg** | **B neg, AB neg,** **A neg, O neg** | **B neg, AB neg** | **WASH A neg, O neg** |
| **O neg** | **O neg, A neg,** **B neg, AB neg** | **O neg, A neg, B neg,** **AB neg** |  |
| **AB neg** | **AB neg, A neg,** **B neg, O neg** | **AB neg** | **WASH A neg,** **B neg, O neg** |
| **ABO unknown/ Rh Neg or unknown** | **AB neg, A neg,** **B neg, O neg** | **AB neg** | **WASH A neg,** **B neg, O neg** |
|  | \*Special Instructions for Rh positive platelets to Rh negative recipient |
|  | * Allocating Rh positive to the following **Rh negative recipients** requires Medical Director **approval PRIOR to issue**:
	+ **Pediatric patients (up to and including 15 years of age)**
	+ **Women (up to and including 50 years of age)**
	+ **Rh negative patients demonstrating anti-D**
* Allocating Rh positive to the following Rh negative recipients does **NOT** require approval prior to issue.
	+ Women, aged 51 years or OLDER
	+ Men, aged 17 or OLDER
	+ Trauma patients who have already been approved by Medical Director to receive Rh positive packed cells

\*\* If no compatible Platelets, notify medical director. If patient weighs ≥ 50kg they may qualify for any type platelet.  |

1. **Platelets are irradiated when**
	1. PR platelets do not require irradiation. If LVDS platelets are in stock, they may require irradiation based on the following:
	2. Physician requests based on patient diagnosis.
	3. BMP (Bone Marrow Protocol) patients
		1. The IRR attribute in Sunquest requires that the units be Irradiated.
	4. BMT donors if applicable.

* 1. All HLA -matched, Crossmatched and Directed Donors MUST be irradiated upon arrival and receipt into computer.
	2. Irradiated platelet pheresis unit is acceptable for a patient that does not require irradiation.
		1. If an outpatient that does Not need irradiated products receives an Irradiated product the patient must be credited for the irradiation charge.
		2. Fill out a Blood Bank Credit Request form and forward to management.
			1. Make sure to supply the unit # and Ecode of the irradiated unit along with the patient information.
			2. PI platelets do not need crediting as there is no irradiation charge associated with them.
			3. *Refer to: Blood Bank Credit Request form*
	3. Pathogen Reduced (PI) Platelet pheresis should NOT be irradiated.
1. Pathogen reduced platelet pheresis units do **NOT** need to be irradiated.
2. If irradiated in error, write QA and notify management.
3. **Compatibility Testing**
4. Platelets do not routinely require a crossmatch.
5. Platelets with ≥ 2mL of red cells must be crossmatched with recipient.
	1. The blood supplier will collect a blood sample at the time of phlebotomy.
	2. This sample will be sent with the platelet and must be used to crossmatch with the recipient.
	3. Blood Bank does not routinely accept platelets with ≥2mL RBCs. Notify management if one is offered by supplier or received.
6. **Manipulation of Platelets**
	1. Pooling.
7. Plateletpheresis collected and sent in two bags may be pooled into a single bag.
8. Pooling into a single bag changes the expiration to the lesser of 24 hours or the original expiration date.
	1. Dividing (Splitting)
		1. Platelet pheresis collected and sent in two bags with a platelet count ≥ 6.0 x1011 may be split into two bags.
		2. Expiration date remains the same UNLESS the product is opened in any way during the splitting process.
		3. Platelets with a lower count may be split with the approval of the medical director or management.
		4. Platelets may also be divided (split) for infants and children.
		5. Platelets transferred to a transfer bag when split should be given a 4-hour expiration.
		6. If a split product is given to a patient that does not need a split product a credit needs to be issued. Fill out a Blood Bank Credit Request form and give to management.
			1. This includes a double bag platelet pheresis that was split into two bags or a mother bag that was used to create an aliquot for an infant that has enough volume left to give to an adult.
				* The product code on the ISBT label will have an A0, B0, Aa, Ab, etc… at the end.
			2. *Refer to: Blood Bank Credit Request form*
		7. *Refer to: BB-SOP-0033 Splitting for Other Patients (non-neonates) and BB-SOP-0032: Neonatal Transfusion Practice Protocols and Splitting*
	2. Washing Platelets
9. Platelets are washed to prevent allergic reactions.
10. Platelets are washed to remove ABO incompatible plasma in some patient populations such as BMT patients and neonates.
11. If a washed platelet is given to a patient that does not require washed fill out a Blood Bank Credit Request form and give to management.
	* 1. Make sure to include the unit # and Ecode along with the patient information.
12. Before washing plts:
	* 1. Explain to patient care team that washed plts have a very short expiration
		2. Confirm with patient care team that they are ready to transfuse.
		3. Document name of provider/nurse and date/time that they were ready to transfuse
		4. Wash plts.
		5. Notify care team that washed plts are ready for pick-up and what the expiration time is
		6. Document name of provider/nurse and date/time that plts are ready

*Refer to BB-FORMS-0020: Blood Bank Credit Request*

*Refer to BB-SOP-0043: Washing Platelets*

1. **Issue of Platelets**
2. Platelet pheresis units do not require a special filter for administration.
3. The standard blood filter set may be used for platelet administration.
4. *Refer to BB-SOP-0056: FD Blood and Blood Product Issue*
5. **Notification from Blood supplier of positive culture in platelets**
6. The implementation of licensed technologies for bacteria detection by culture method for 100% of apheresis platelets became effective in March 2004.
7. Rarely, Wake Forest Baptist Health may be notified by the blood supplier that a sample culture has become positive after the product has been shipped.

1. Upon receiving a call from the blood supplier regarding a positive culture on a unit of plateletpheresis, immediately quarantine unit or units (same unit number) physically and in computer if in stock.
	1. If platelet has not yet been entered into inventory, then enter into inventory and immediately change the status to quarantine and move to QC shelf.
	2. If the platelet has been discarded, then document on Positive Culture form
	3. If the platelet has been transfused record the Patient name and MRN and location. The pathology resident or medical director must be notified immediately.
2. The Positive Culture form should be obtained and completed with the following:
	1. Unit number, group/type and expiration date of the platelet
	2. All parts if split
	3. Date and time of call
	4. Name of Red Cross personnel initiating call.

*Refer to BB-FORMS-0109: Positive Culture Report*

1. The completed Positive Culture form should be given to management for review.
2. Platelets that are quarantined will be discarded in computer following review by the manager and medical director.
3. Management will direct disposition of physical platelet product.

1. The medical director is responsible for the follow-up report and will work with the blood supplier in the event that a product testing positive for bacteria has been transfused.
2. The medical director will complete the American Red Cross Recipient Complications – Transfusion Reaction Case Report for patients that have a reaction associated with a product testing positive for bacteria on a blood product received from Red Cross.

*Refer to BB-FORMS-0210 ARC Recipient Complications—Transfusion Reaction Case Report*

1. The Positive Culture form and Red Cross forms will be kept indefinitely.
2. The blood supplier will credit any platelet products with a positive culture.
3. **Platelets Released to Research**
	1. Expired Platelets may be requested for research purposes.
	2. Instructions for product preparation and computer functions are included on the "Request for Expired Blood Products" form.

*Refer to BB-FORMS-0057: Request for Expired Blood Products*

1. **Prospective Platelet Order Review**
	1. Contact pathology resident or medical director to review requests for platelets in patients with a platelet count ≥200 EXCEPT patients in OR, ED, IR, HEMONC or with an indication of anti-platelet therapy.

# Literature References: NA

# Related Policies/Procedures in Navex: NA

# Attachments/Linked Documents in Title 21:

BB-FORMS-0020: Blood Bank Credit Request

BB-FORMS-0057: Request for Expired Blood Products

BB-FORMS-0107: Special Order Form.

BB-FORMS-0108 BB Platelet Thawed Plasma Inventory

BB-FORMS-0109: Positive Culture Report

BB-FORMS-0151:BB Special Platelet Orders for Review.

BB-FORMS-0153: Standing Order for Blood Products

BB-FORMS-0210 ARC Recipient Complications—Transfusion Reaction Case Report

BB-POL-0028: Blood Product Inventory

BB-POL-0038: Emergency Blood Protocols

BB-POL-0052: Blood Selection Guide

BB-POL-0055: Transplant Testing Protocols

BB-POL-0062: Blood and Blood Products - Storage, Transport, Return and Reissue.

BB-POL-0073: Shipping Regulations for Blood and Blood Products

BB-SOP-0015: ARC Connect Online Blood Ordering System

BB-SOP-0032: Neonatal Transfusion Practice Protocols and Splitting

BB-SOP-0033 Splitting for Other Patients (non-neonates)

BB-SOP-0043: Washing Platelets

BB-SOP-0056: FD Blood and Blood Product Issue

# Revision Dates: Review Change Summary as Represented in Title 21.