# Applicable Laboratory(s)):

[x]  North Carolina Baptist Hospital (ATRIUM HEALTH WAKE FOREST BAPTIST)

[ ]  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 to ensure that blood products will be ordered routinely and as special orders to provide for the needs of patients requiring transfusion at Atrium Health Wake Forest Baptist and associated facilities.

# Scope

This policy applies to Blood Bank staff and management

# 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 (ATRIUM HEALTH WAKE FOREST BAPTIST), 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. ARC: American Red Cross
4. OB: One Blood (formerly Community Blood Center of the Carolinas (CBCC))
5. Neo: Neonate
6. Mannitol Free: CPDA-1 or AS-3 anticoagulants are Mannitol free
7. Connect: Online ordering system for ARC
8. Dr. Otaki: Pediatric Cardiac surgeon.
9. DBR: Davie Medical Center Bermuda Run

# Sections

1. Guidelines for Ordering Blood and Blood Components
2. Orders for Special Blood Products
3. Blood Shortage Policy
4. Inventory for Other Facilities

# Policy Guidelines

1. **Guidelines for Ordering Blood and Blood Components**
2. All products ordered must be leukocyte reduced.
3. Exceptions may be allowed with medical director approval in times of need.
4. Blood products should only be ordered from blood centers that have been qualified by management.
	1. Sources should be qualified as acceptable prior to shipment of blood products.
		1. Facility should be accredited by the AABB or equivalent accrediting body, and certified by the Centers for Medicare and Medicaid Services (CMS), and registered and licensed by the Food and Drug Administration (FDA).
		2. Notify management when a new blood supplier is utilized.
		3. To qualify a blood supplier refer to the BB-POL-0009:
			1. Facility License number (needed to ship across state lines)
			2. Certified by CMS and Facility Registration number (FDA number)
			3. Accrediting agency
			4. Facility Circular if available
			5. Information can be taken verbally or faxed.
			6. It is preferred to have the information prior to shipment but the urgency of the need must be balanced with the ability to obtain the information. Consult with management if questions.
			7. Document Information on the Qualifying a Blood Supplier Form and give to management for filing.

*Refer to BB-FORMS-0119: Qualifying a Blood Supplier*

1. 3.0 Blood Sources
	1. Blood is routinely ordered from the American Red Cross (ARC) in Charlotte and Durham. There is a written agreement with the ARC and information has been received to qualify them during this process.
		1. If blood or blood products are needed, order online at <https://arc.bloodhub.com>
		2. *Refer to BB-SOP-0015: ARC Online Ordering System,*
		3. During intranet, internet or ARC Connect downtime call 1-800-532-0025. ATRIUM HEALTH WAKE FOREST BAPTIST account number is 0122420.
		4. The American Red Cross will try to fill most stock orders out of Charlotte.
		5. During intranet or ARC Connect downtime. Call 1-800-532-0025 or fax to 1-800-708-2623.
		6. *Refer to Attachment 1: Red Cross Emergency Phone Numbers*
		7. Antigen negative, special order blood is also to be ordered online at <https://arc.bloodhub.com>

*Refer to Section C: Orders for Special Blood Products*

* + 1. The American Red Cross determines from what center blood products will be sent.
		2. Blood may be available out of the ARC Winston Salem Center weekdays from 7am to 5pm.
	1. Blood is also ordered from One Blood (OB) and Blood Connections Incorporated (BCI) when ARC is not able to fill orders in a timely manner.
		1. Add to Blood Bank Inventory Sheet

*Refer to BB-FORMS-0072: Blood Bank Inventory Sheet*

 <https://oneblood.bloodhub.com/> (mgmt has access to place orders)

* 1. Blood Buy is a third party vendor that works with certain blood centers and hospitals.
		1. Only Designated techs and management can order.
		2. All Blood Buy blood centers have been qualified by management. If one is received and it is not available in Sunquest, leave for management to review and qualify.

<https://www.bloodbuy.com/> (mgmt. has access to place orders)

* 1. Blood may be needed from other sources during times of severe shortage or to meet specific patient needs such as filling requests for units with rare antigen types.
	2. The following are qualified blood centers that may be contacted to supply blood products.

|  |  |
| --- | --- |
| **Blood Center** | **Phone / Fax #s** |
| Blood Center of Wisconsin | 414-937-6089 |
|  |  |
| Blood Connection, Inc |  |
|  - Product Order | 864-751-3017 |
|  - Fax | 864-255-9514 |
|  |  |
| One Blood Charlotte |  704-972-4742 |
| One Blood Greensboro |  336-207-2896 |
| Florida Blood Services | 727-568-5433 |
|  | Ext. 1113 or 1116 |
| Heartland Blood Center - Illinois | 630-892-7091 |
| Hoxworth Blood Center - Univ. of Cincinnati | 513-558-1244 |
| * Fax
 | 513-558-1253 |
| Memorial Blood Center (Minnesota) | 651-332-7108 |
| Blood Buy | Website only:<https://exchange.bloodbuy.com> |

1. Optimal Levels have been established for blood/blood components.
	1. *Refer to BB-FORMS-0072: Blood Bank Inventory Worksheet*
	2. Maintain levels of blood/blood components at or above optimal levels
		1. Notify management when inventory drops below optimal and unable to obtain inventory from ARC or other suppliers
2. Print Blood inventory on each shift.

|  |  |  |
| --- | --- | --- |
| **Shift** | **Assigned bench** | **When** |
| 1st | XM 1 | 0600-0800 |
| 2nd | XM 1 | 1400-1415 |
| 3rd | Front Desk | 2100-2130 |

* 1. In Sunquest:
* Open and Log in to SmarTerm
* Function: BBR
* ?: 13 (Inventory Summary)
* Hospital ID: AHWA
* AREA: WIN
* “A” accept
* Component Type/Group: (enter desired group code)
	+ - LRPC, LRDAS1, LRDAS2 (non-irradiated packed cells)
		- ILRC, ILRAS1, ILRAS2 (irradiated packed cells)
		- WB, LRWB (whole blood)
* “A” accept
1. Red Blood Cell Inventory
	1. Document inventory totals to the BB Inventory worksheet
		1. Red Cell inventory:
			1. Check for any standing order products coming on your shift or the next shift and record in appropriate section on worksheet
			2. Add standing order to current inventory and document under totals column
			3. Compare number to optimal number and order accordingly
				1. The blood inventory report is a tool for use for determining the number of units to order. The assigned tech needs to physically evaluate the inventory in the uncrossmatched refrigerator and compare to inventory levels on report to determine if more blood needs to be ordered.

As a quick and easy guide, each row is approximately 10 units.

Do not include antigen negative units in your totals

* + - 1. First shift counts and records sickle negative inventory and documents on worksheet
				1. Standing order sickle blood arrives on Wednesdays
			2. Order as needed through all shifts using the optimal numbers as a guideline
	1. Each shift is responsible for keeping RBC stock in order so that shortest expiration dates are in front and used first.
		1. Crossmatched units are grouped by blood type and BBID number.
1. Standing Order of Leukoreduced Packed Red Blood Cells
	1. There is a standing order of red cells for stock and neonate use (NEO).

*Refer to BB-FORMS-00153: Standing orders for Atrium Health Wake Forest Baptist*

* 1. ARC may modify, change or cancel the standing order depending on availability
	2. The standing orders may be split and/or sent by various couriers.
	3. Changes to the delivery schedule should be documented on the Blood Bank inventory sheet.
* Standing orders cannot be requested early by BB techs
	1. Blood Products from ARC usually arrive on the following shuttles:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Shuttle** | **Days of Week** | **Order by** | **Approximate Arrival Time** | **Shuttle Leaves ARC** |
| Shuttle B  | Sat,Sun,Mon | 10:00 PM | 5 AM | 2 AM |
| Route 2  | Mon-Fri | 10:00 PM | 7 AM | 2 AM |
| Route 2 (return) | Mon-Fri |  2:30 AM | 10 AM | Goes by Winston center |
| Shuttle A  | Mon-Fri | 12:00 PM | 4 PM | 2 PM |
| 10pm Shuttle | Mon-Fri |  2:30 PM | 10 PM | 8 PM |

* + 1. Blood and blood products that are NOT stat will be sent on the next available courier
		2. Call Blood Order Entry (1-800-532-0025) if any questions on shuttles
	1. Changes to standing orders must be done by phone
		1. Changes to standing orders cannot be made in ARC Connect online ordering system
			1. Standing orders for liquid plasma/WB must be done 5 days in advance
			2. Standing orders for routine products (RC, PLT) must be done 12 hours in advance
			3. Standing orders can be cut in full
			4. Partial changes/cuts to standing orders are not allowed (example: cannot cut standing order of A red cells and retain standing order of Os, Bs, etc.)
				1. Standing order must be cut in full and needed products placed as ad hoc order
		2. Document date/time changes are made on BB inventory worksheet.
		3. ARC reference lab in Charlotte should be notified if changes are needed to antigen negative standing orders (sickle cell negative units) in addition to calling main ARC line.
1. Low Titer Group O Whole Blood
	1. LTOWB is on standing order from ARC.
	2. ARC provides leukoreduced LTOWB using a platelet sparing filter.
	3. If more LTOWB is needed, it must be requested by management.
	4. Other suppliers may be able to supply LTOWB; however it may not be leukoreduced.
		1. Management will determine if other suppliers can provide a suitable product.
		2. Notify management if NON-Leukoreduced Whole Blood arrives.
		3. Non-Leukoreduced products should be segregated from leukoreduced products.
2. Frozen Component Inventory should be completed on second shift on the Blood Bank Inventory Worksheet
3. Plasma Inventory Guidelines
	1. Second shift will complete plasma inventory daily along with red cell inventory
		1. While second shift completes this inventory daily, all shifts must be aware of current levels and order accordingly throughout the day when needed
	2. Subtract pheresis patient usage for the next day from the inventory total on the worksheet.
	3. Record current totals on BB Inventory Worksheet
	4. Compare totals to optimal levels and order as needed
	5. Group AB FFP
		1. A standing order of 15 group AB FFP arrives monthly (approx. the first Tuesday) from OneBlood.
	6. Liquid Plasma
		1. A standing order of group A and AB liquid plasma arrives weekly

*Refer to BB-FORMS-00153: Standing orders for Atrium Health Wake Forest Baptist*

1. Cryo Inventory (pooled and single)
	1. Second shift will complete cryo inventory daily along with plasma and red cell inventory
	2. Document on BB Inventory Worksheet
	3. Standing order of pooled cryo from ARC arrives biweekly

*Refer to BB-FORMS-00153: Standing orders for Atrium Health Wake Forest Baptist*

* 1. Order as needed to keep inventory at optimal levels
1. All blood/blood component orders need to be documented on the Blood Bank Inventory Worksheet, with the exception of platelets.
	1. Document tech initials, time, and Connect order # (or name of the person arranging the order if a phone call is needed) from the American Red Cross or other blood supplier.
	2. Document how the products will be arriving (i.e. Stat courier, which shuttle, etc.)
	3. Any additional information regarding blood/blood components should be written on the inventory sheet.

*Refer to BB-FORMS-0072: Blood Bank Inventory Sheet*

1. Platelets arrive as standing order from ARC. Arrival times can vary depending on release times. The Blood Center will notify staff if the time of delivery changes and expiration dates of platelets.
	1. Platelet inventory is counted by the technologist assigned to component prep on each shift and recorded on the Blood Bank Platelet Inventory Worksheet.

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

* + 1. Review minimum and maximum levels on BB inventory sheet
		2. Each CP tech will evaluate the need for additional plt orders
			1. The standing order of plts should routinely arrive at approx. 7am.
		3. Special units (NEO, HLA, etc.) should not be included in the total plt. Inventory.
	1. When ordering/accepting platelets, note the expiration dates of the platelets being sent. If expiration dates are not acceptable ask the Blood Center to send "better" dates if available.
* If plts are ordered from ARC STAT, they will most likely be expiring in <24 hours and will not be eligible for credit if they expire.
	1. For ARC shipments:
		1. The ARC standing order must be cancelled 12 hours in advance.
	2. If inventory falls below the established threshold (*Refer to BB-FORMS-0108: BB Platelet Thawed Plasma Inventory*) the need for ordering additional platelets should be evaluated.
* Take into consideration next scheduled delivery (cannot be called in early)
* Take into consideration expiration dates of platelets in inventory and those available for order
* Contact management if inventory reaches the critical level of 10 units
	+ Management will determine need to notify pathology resident/medical director and begin triaging/splitting.
* Platelets should be ordered from ARC first. Other suppliers such OneBlood can also be contacted if needed for better dates or additional units.
* The Blood Connection manufactures 7-day LVDS platelets that should only be ordered with medical director/management approval in cases of severe need and shortages.
* 2 platelets are kept in Winston at ARC for emergent need and are available by ordering the massive trauma pack (see below).
	1. Special order platelets are ordered at the request of the Medical Director and/or pathology residents.
	2. Special order platelets are filled by the ARC pheresis department:
		1. Orders are placed online at <https://arc.bloodhub.com>
		2. For Questions contact the pheresis department at ARC at 1-800-350-0556 or 1-704-347-8395.
		3. Special order platelets include:
			1. HLA matched
			2. Crossmatched Platelets
		4. When placing special order platelets during Internet or ARC Connect downtime use the special order form. Blank copies are kept in the back of the special order platelet notebook kept in component prep.

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

* 1. The tech assigned to component prep is responsible for monitoring active special platelet orders and to have the medical director and/or pathology resident reevaluate orders.
1. When blood level is below optimal or anticipating usage at or above the normal that will deplete normal inventory, orders should be placed STAT.
	1. The Winston Center Red Cross can fill orders during normal business hours (Monday –Friday, 7am to 5pm).
		1. The Winston Center Red Cross **cannot** accommodate large orders.
		2. Delivery on Time (DOT) is the primary courier used for Stat pickups (855-933-6368).
		3. Couriers on Demand (336-406-2219) is available if other options are not.
		4. Document on the BB Inventory Worksheet including which courier and time courier called.
	2. All Employees on all shifts are responsible for ensuring that blood levels do not drop below optimal levels.
2. Emergent orders for blood products should be requested for arrival by the most expedient method.
	1. STAT (from supplier) couriers may be requested with an estimate time of arrival at WFBH.
	2. Other couriers (DOT) should be checked to see if they can deliver product more quickly.
	3. WFBH Incident command center may be able to provide a courier if needed when WFBH has activated the command center such as during Severe Weather.
	4. Management should be immediately consulted when there is an emergent need for blood.
3. Massive Trauma pack is available 24/7 at the Winston Salem Red Cross.
	1. The Massive Trauma pack available has the following components:
		1. 25 Group O positive packed cells
		2. 25 Group O negative packed cells
		3. 2 Platelet pheresis
		4. Alternatively, 50 O positive packed red cells and 2 plts during O negative RBC shortages.
	2. The Massive Trauma pack should be ordered if current inventory falls to critical levels and usage is expected to exceed ability to restock from ARC Durham/Charlotte.
	3. The Red Cross order number should be called to request the Massive Trauma pack.
		1. The entire pack can be received or only part of the pack can be received.
			1. You can request only the Group O positive packed cells be sent.
		2. Additional product may be ordered to come out of Charlotte or Durham if needed.
		3. The Red Cross will call to notify when the products are ready to leave the Winston Salem center.
		4. Document the MTP request at the bottom of the MTP log.
			1. Date/Time Requested
			2. Tech Requesting
			3. What was ordered
			4. Red Cross staff
			5. Date/Time Received
			6. Tech Receiving
			7. Time from Order to Receipt
			8. Comment on any additional information, i.e. courier lost, no parking
		5. During shortages when ARC has enacted its allotment protocol, the number of units sent from the MTP pack cannot exceed our daily allotment. Call management if issues arise.

1. Blood order placement during times of power or phone outages or intranet/internet service disruption.
	1. During intranet, internet or ARC Connect downtime:
		1. Call 1-800-532-0025 or fax Blood Products Fax Order Form to 1-800-708-2623.
		2. Document on BB Inventory Worksheet and place faxed form on clipboard with worksheet.

*Refer to Attachment 1: Red Cross Emergency Phone Numbers*

* 1. Black phone is available and may be used if working.

*Refer to BB-POL-0056: Unscheduled Interruptions to Laboratory Operations*

1. Granulocytes are ordered only with the approval of the Medical Director.
	1. Granulocytes are not orderable in the ARC online Connect system.
2. CDIE's-ARC Credit Due if Expires
	1. CDIE (Credit due if Expires) are products that are sent with limited shelf life thus Red Cross or other supplier will issue a credit if they are not used. CDIE products are *only* sent by ARC with technologist approval.
	2. The following qualify as ARC only CDIE units.
		1. Red blood cells < 7 days until expiration
		2. Platelets < 24 hours until expiration
		3. CDIE will be indicated in the LIS
3. Rarely a unit of packed red cells containing antibody (ies) may be offered by a blood supplier.
	1. Medical Director will routinely only accept Group O negative donors with anti-D antibodies.
	2. Consult with management prior to accepting any blood groups with antibody (ies).
4. Any issues with blood/blood products inventory shall be recorded on the Blood Bank Inventory Worksheet.
	1. Orders that can only be partially filled should be documented if product must be

obtained from another blood supplier.

* 1. Document instances that the standing order cannot be filled so that credit can be

obtained if purchased from another blood supplier.

1. A member of the patient clinical team will be notified of any delays in obtaining products for patients with special order needs.
	1. This includes HLA matched platelets, CMV negative product, antigen negative product or any product that cannot be obtained for the day of transfusion.
	2. Critical patients or patients with urgent orders that cannot be filled with special product will be given to the Medical Director or designee to evaluate and consult with clinical team to determine the best course of action.
2. Non-conforming Blood Products
	1. Non-conforming blood products are defined as products that are acceptable with appropriate documentation from the blood supplier and include the following:
		1. Biohazard Autologous Donations
		2. NAT testing not done for autologous donations
		3. Confirmatory testing pending for autologous donations
		4. Units tested from an alternative source (segments)
		5. Historical Typing for antigens
		6. Exceptional Release.
	2. A Deviation from Standard Procedure will be necessary.

*Refer to BB-POL-0012: Deviations, Nonconformance, and Adverse Reactions*

* 1. Management must be notified anytime there is potential receipt of a non-conforming product.
	2. Documentation will be kept on file by the manager/designee.
1. **Orders for Special Blood Products**

Special orders for scheduled outpatients:

a. Notification of special blood orders for outpatients are made through emails.

1. Email notifications are sent from Hematology/Oncology Clinic, Clemmons, Davie Medical Center, Peds Heme/Onc or any other applicable Wake site to Blood Bank management and to the generic BBFront.

*See phone list on Y: Lab\_Shared:BloodBankStaff: BBStaffinformation*

1. The notification should indicate the number of units, irradiation requirements, date of intended use and patient's name and medical record number.
2. Front desk prints off a copy of the email.

Front desk will complete steps f to h unless workload does not prohibit. If unable to place order, the email should be placed on the bridge with a notation as to what needs to be completed. The technologist assigned to crossmatch is then responsible for placing the order.

* 1. Orders are kept in Special Orders Book for 2 months.
	2. Check the patient's history and document age, ABO/Rh and special blood needs next to their name.
	3. Add the patient’s name and order to the BB Calendar for day of need.
	4. Search current inventory of frozen red cells to see if unassigned units or older frozen units are available BEFORE placing an order for additional units.
		+ 1. Search for units that are antigen negative for common antigens that are needed.
			2. If a unit is found but assigned to a patient, but the patient has not needed units in the past 24 months, then assign the current patient’s name to the unit as well as the past patient.
			3. Do not initially search for antigen negative for low incidence antigens that we have available antisera (anti-Kpa, anti-Lua, anti-Wra, anti Cw). These can be screened when the unit is crossmatched.
			4. If frozen units are available, document “use frozen units” and the location in freezer on the email and BB Calendar.

Place the email on the Special Antigen Clipboard hanging on the wall to the left of lockers.

* + 1. Evaluate the need to order special antigen negative versus the ability to screen for liquid units internally.
		2. Determine the approximate frequency of the antigen combination in the general population and take into consideration units that are currently antigen screened and in stock.
1. If you need a unit that is negative for C, E, K and S; then units that are already in house (C,E,K) can be screened for S. Approximately 50% of the population is S negative so you have a good chance of finding liquid units.
	* 1. This can be determined by multiplying the frequency of antigen negative for each antigen.
			1. Ex. Patient has anti-c and anti-K. 20% of population is c negative and 90% is K negative. Multiply the frequencies (0.2 x 0.9 =0.18). Express as a percentage (0.18 x100 = 18%). 18 percent of the population is negative for both K and c.
		2. If 30% or greater, then screen internally unless anticipate short staffing or blood shortage.
		3. If <30%, then order from the blood supplier.
		4. The 30% cutoff is a general guideline. Technologists must use clinical judgment based on other factors such as the urgency of the need, workload, staffing, etc.
		5. Remember that some blood group antigens are linked together and this calculation will not always work.
		6. Note on the email with the patient information that units need to be screened internally by transfusion date minus two days and place in incomplete box. (Example: If transfusion date is 9/7 then units need to be screened and available by 9/5.)
2. Add to BB calendar 48 hours in advance of transfusion date that units need to be screened.
3. Note on email and BB Calendar where units are to be found.
	* + 1. If units are available in stock write "Use Stock" on the email and BB Calendar and place email on Special Antigen Clipboard hanging on the wall to the left of lockers.
			2. If units have to be ordered, indicate where units are ordered from and when they are to arrive on the email and BB Calendar and place on Special Antigen Clipboard.
4. The blue antigen typing card/reservation tag with patient’s name and antigens negative should be attached to the unit.
	* + 1. Release unit for other patients if patient is discharged or patient’s hemoglobin is stable or unit is approaching expiration date.

*Refer to BB-FORMS-0014: Antigen Type Card/Reservation Card*

2. Autologous and Directed Units

1. Autologous and Directed donations are scheduled through the patient's physician with American Red Cross.
	* 1. The physician completes the ARC Special Collection Order request and sends to the Red Cross. This form is also used for the collection of autologous or directed plateletpheresis products.

*Refer to BB-POL-0051: Requesting Autologous and Directed Donor Donations*

* + 1. Autologous and Directed Donation forms are available in the forms drawer and T21.
		2. The forms can be emailed to self, using copier if electronic copy needs to be sent.
		3. Contact information for donation scheduling: Phone: 800-522-4587 or 800-458-5093 or FAX: 704-347-8459
1. The Red Cross will fax the Patient Information Report and/or the completed ARC Special Collection Request form to Blood Bank.

*Refer to Attachment 2: Patient Information Report*

1. Patient Information Report and/or completed ARC Special Collection Request form should provide patient's name, date of birth, expected transfusion date and product requested with any special requirements.
	* 1. Sunquest and EPIC computer system can be checked for patient by name and verify date of birth. The blood type and MR# is documented on Patient Information Sheet. Check for any special blood requirements.
		2. EPIC can be checked for patient by name and date of birth. Verify as much information as possible to make sure unit is assigned to correct patient.
		3. Obtain an Auto/Dir Unit Pending Form
		4. Complete Patient Demographic in Section I of *Auto/Dir Unit Pending form.*

*Refer to BB-FORMS-0016: Auto/Dir Unit Pending*

* + - 1. Record initials, date and time in Section 2
			2. Attach Red Cross form to back of Auto/Dir Unit Pending form.
			3. Put in Incomplete File on date that is day before need/surgery.
		1. Enter appropriate comment into Sunquest
			1. Example “Auto units for surgery 03 02 24”

vii. Changes to the Surgery Date

1. Send units to be frozen to ARC if necessary
2. Consult with BMT department if patient is a BMT donor.

d. On Receipt of Special unit, pull auto/dir pending form from Incomplete file

1. Circle “Yes” and record date and time received
2. For liquid or frozen units, check to see if sample has been received.
3. Investigate if sample is not received.
4. For frozen units, send an email to BB staff with instructions on deglycerolizing and attach a copy to Auto/Dir Pending form.

e. Explain if units are not allocated or crossmatched and document on Auto/Dir Unit

 Pending form.

f. Auto/Dir forms are stored in the irradiator room upon completion for 5 years.

*Refer to BB-FORMS-0016: Auto/Dir Unit Pending*

g. The American Red Cross has one central location that is responsible for scheduling

 autologous or directed donations, collection of units, product processing, product

 tracking and release of units.

|  |  |
| --- | --- |
| Contact information for Donation Scheduling:Phone: 800-522-4587 or 800-458-5093 Fax: 704-347-8459 | Contact information for Product Inquiries:Phone: 800-438-3916Fax: 704-347-8403 |

h. Refer to BB Staff folder on Y: Drive> BB Staff>Phone Numbers>Blood Centers for

 specific phone numbers for autologous and directed donation questions.

3. Ordering Blood Products

|  |  |
| --- | --- |
| **Ordering for:** | **Ordering Units:** |
| 1. **Sickle Cell patients Pediatric**
 | 1. Special order units from the Red Cross or other blood  supplier 2. Phenotypically matched for Rh and K, HgbS negative,  liquid units, ≤ 7 days old on day of transfusion. 3. Antigen negative corresponding to any new or existing  antibodies, in addition to being phenotypically matched for Rh and K.  |
| 1. **Sickle Cell patients Adult**
 | 1. Select units from stock inventory
2. Phenotypically match for Rh and K, HgbS negative liquid units.
3. HgbS negative liquid units are inventoried daily.
4. HgbS negative units are tested weekly for C,c,E,e and K or ordered as needed.
5. Antigen negative corresponding to any new or existing antibodies, in addition to being phenotypically matched for Rh and K.
6. These may need to be ordered from ARC or other blood supplier.
 |
| **Ordering for:** | **Ordering Units:** |
| 1. **Blackfan Diamond (BFD) patients**
 | * 1. Special order units from the Red Cross and be < 7 days old on day of transfusion.
	2. Antigen negative corresponding to any new or existing antibodies.
 |
| 1. **Patient at risk of TACO**
 | See Blood Selection Guide |
| 1. **All other special orders**
 | * 1. Units should be ordered according to patient's new or existing antibodies or other special request.
	2. Other special requests may include freshest, CMV negative, HgbS negative.
 |
| 1. **Blood for**
2. **CODE ECMO**
 | 1. Freshest Red cells, mannitol free: either CPDA-1 ≤ 7 days old or AS-3 ≤10 days old.
2. These units should be continually available on the ECMO shelf.
3. There is a standing order for units for ECMO.
4. Two units arrive Monday from Blood Connections that are freshest, O negative, AS-3.
5. Two units arrive Thursday from ARC that are freshest, O negative, AS-3.
6. Units are checked daily by third shift for expiration date and moved into regular inventory when CPDA-1 is > 7 days old and AS-3 are > 10 days old.
 |
| 1. **Granulocytes**
 | 1. Granulocytes are ordered only with the approval of the Medical Director

2. Granulocytes are requested by submitting the request on the ARC “HLA and Platelet Laboratory Requisition Form.”3. Submit the request to the blood order line by fax to 1-800-708-2623. 4. Call to confirm receipt of the request at 1-800-532-0025.5. Red Cross will fax a form for emergency release of the granulocyte prior to completion of testing.1. Obtain medical director’s signature, if available.
2. If weekend or nights and medical director is not available, sign for the medical director and leave for review.
3. Red Cross will fax the form again as testing is

completed on the unit.  |

3. Placing special order from the blood supplier

a. Order special order products from ARC using the online connect system

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

c. Place printed order from connect or Blood Order Form from other supplier behind the

 expected delivery date in the special order book.

d. Write the last name of the patient and the order date on the delivery date line on the

 *Special Order Arrival Dates* form at the front of the special order book.

*Refer to BB-FORMS-0150: Special Order Arrival Dates Sheet*

e. Document confirmation with a checkmark that the blood supplier received and

 accepted the order (not applicable if ARC connect order has been printed and filed).

f. Note any issues or order changes on the order sheet.

g. After receipt of units, place order in the back with current month’s orders. Orders are

 kept for 2 months.

i. The current month’s completed orders will go behind the tab in the book labeled:

 Completed Orders

ii. At the end of the month, completed orders are moved to tab labeled previous month

 and previous month orders are discarded.

4. Ordering from the Rare Donor Registry

a. Orders for antigen negative blood from the American Rare Donor Program (ARDP)will

 go through ARC as a special unit order.

b. Notify management if ARDP must be involved to find blood for a patient.

c. If unsuccessful in obtaining blood through ARDP, consider contacting blood centers

 individually.

C. Blood Shortage Policy

1. General Guidelines

a. Under normal circumstances critical blood levels are defined as:

|  |  |
| --- | --- |
| **Blood Group** | **Critical Level** |
| O pos | 120 |
| O neg | 60 |
| A pos | 80 |
| A neg | 20 |
| B pos | 20 |
| B neg | 10 |

1. Atrium Health Wake Forest Baptist Blood Bank will manage a limited blood supply during a shortage to protect the safety of patients as completely as possible given the constraints and nature of the blood product shortage.
2. The protocol will implement practices necessary to manage a limited blood supply during a blood product shortage. Blood shortages can vary in severity, and the blood supply can change rapidly.
3. There are several factors that can affect the severity of a blood shortage such as:
4. A severely hemorrhaging patient
5. Multiple patients requiring extensive transfusions
6. Complex patient serology
7. Holidays
8. Weather
9. Traffic
10. Blood supply reductions or interruptions from the American Red Cross or other suppliers.
11. Natural and/or deliberate disastrous events.
12. Notify Management of the short-dated status of the products.
13. Blood shortages should be anticipated for holidays and weather-related events.
	1. Planning for these potential shortages in advance is critical to maintaining an adequate inventory.
	2. Contact blood suppliers and get a projected estimate of the impact since these blood shortages may last for several days to weeks.
	3. Proactively seek alternate blood suppliers to meet the inventory needs.
	4. Qualify any new blood suppliers utilized during a shortage.
14. Mild or short-term shortages:
	1. Blood shortages usually require management of the blood supply through methods internal to the blood bank including:
	2. Communication with primary medical teams
	3. Transfusion order screening
	4. Inventory conservation methods
	5. Splitting platelet pheresis with counts of 6.0x1011 or greater into two units can be routinely done. Splitting platelet pheresis with counts less than 6.0x1011 may be approved by Medical Director.
	6. During holidays there is a shortage of platelet donations which will result in a shortage in inventory 3-5 days after.
	7. Consultation with the blood supplier
	8. Contact additional blood suppliers throughout the country
	9. The medical director of the blood bank may triage blood orders or ration blood products as necessary to conserve the institution’s blood supply for the patients.
	10. Increasing the optimal levels of blood inventory according to Blood Bank Inventory During Shortages Worksheet.
	11. Blood Bank management will advise staff when to increase inventory during a shortage.

*Refer to BB-FORMS-0070: Blood Bank Inventory During Shortages Worksheet.*

2. More severe shortages:

a. During times of severe shortages blood levels may fall and remain below optimal. When the need arises blood bank shall initiate the Critical Blood Plan. Management will define the status of the blood supply for each affected blood group daily and calculate projected inventory levels for the upcoming week. This data may be reported to hospital administration.

i. Group O red cells are the most at risk. Group O red cell inventory should be calculated by counting only the units in the uncrossmatched refrigerator. Rh status of units is not differentiated.

|  |  |  |
| --- | --- | --- |
| **Status** | **Available Inventory** | **comments** |
| **Green** | ≥ 200 | approx. ≥ 50 % of our optimal levels |
| **Yellow** | 100-199 | approx. 25-50% of our optimal levels |
| **Red** | < 100 | < 25% of our optimal levels |

ii. Other affected blood groups and blood components shall be included in this policy as the need arises.

iii. Hospital administration will use this information to guide services.

b. Perform as necessary procedures listed during mild or short-term shortages

c.. The medical director of the blood bank shall contact the following as necessary in

 order to coordinate more aggressive blood conservation methods:

1. The Chair of the Blood Conservation Committee
2. Chief of Professional Services
3. Department Chairs and Section Head Physicians
4. Hospital Administration

D. Inventory for Other Facilities

1. Facilities within the Atrium Health system may make special requests.
2. Facilities within the system include Nursing Home facilities (Oak Summit, Brookridge, Kernersville-Britthaven and various Dialysis Centers.
	1. The above facilities may submit samples for type and crossmatch. The account numbers and ordering procedure is slightly different for each one. Refer to the table in Step 5.
3. Atrium Health Wake Forest Baptist provides blood and blood products to dialysis centers.

*Refer to BB-POL-0077: Dialysis Centers Agreement*

* 1. Dialysis Centers are under the direction of an appropriate medical director.
	2. Agreements are retained by management for dialysis centers that are not a part of Atrium Health Wake Forest Baptist.
1. Use the Inventory>Transfer function when sending blood/blood products to another site either crossmatched or selected or for stock in refrigerator.

*Refer to Attachment 3: Units for WFBMC offsite Locations Quick Reference Guide.*

1. Account numbers can be obtained for facilities for charging purposes by consulting the following table.

|  |  |  |
| --- | --- | --- |
| **Facility** | **Account Number** | **Special Instructions** |
| Dialysis Facilities | Weekdays- contact Laboratory Customer Service to create a visit. (Phone: 62667 or 62610 or 34142) or Do One Click registration in Beaker (WakeOne).  |
| Oak Summit, Brookridge, Britthaven | Use patient's medical record number (MR#) and account number listed.  | Contact Laboratory Customer Service to create a MR# or visit (Phone: 62667 or 62610 or 34142) or Do One Click Registration in Beaker (WakeOne) |

1. Atirum sister facilities and facilities outside of the Atrium Health Family may make special requests to wash or irradiate blood products or requests for special blood products.
	1. Consult with management regarding the request.
	2. If request is to perform product modification, then the outside facility will need to be billed.
	3. Notify management on a Quality Assurance (QA) form. If component was sent from the outside facility, enter unit into computer.

*Refer to BB-SOP-0014: Blood Product Entry*

*Refer to BB-POL-0048: Receiving Blood Products into Inventory Protocol*

*Refer to BB-FORMS-0018: Blood Product Transfer Form*

*Refer to BB-SOP-0160: Unit Status/Disposition (Discard, Return, Transfer, Recall, Expired)*

*Refer to BB-FORMS-0120: Quality Assurance Exception Report*

*Refer to BB-POL-0062: Blood and Blood Products Storage, Transport, Transfer, Return and Reissue*

# Literature References:

Standards for Blood Banks and Transfusion Services. AABB periodically revised.

# Related Policies/Procedures in Navex: NA

# Attachments/Linked Documents in Title 21:

Attachment 1: Red Cross Emergency Phone Numbers

Attachment 2: Patient Information Report

Attachment 3: Units for WFBMC offsite Locations Quick Reference Guide.

BB-FORMS-0014: Antigen Type Card/Reservation Card

BB-FORMS-0016: Auto/Dir Unit Pending

BB-FORMS-0018: Blood Product Transfer Form

BB-FORMS-0070: Blood Bank Inventory during Shortages Worksheet.

BB-FORMS-0072: Blood Bank Inventory Sheet

BB-FORMS-0107: Platelet Special Order Form.

BB-FORMS-0108: BB Platelet Thawed Plasma Inventory.

BB-FORMS-0119: Qualifying a Blood Supplier

BB-FORMS-0120: Quality Assurance Exception Report

BB-FORMS-0150: Special Order Arrival Dates Sheet

BB-FORMS-00153: Standing orders for Atrium Health Wake Forest Baptist

BB-FORMS-0200: ARC Autologous and Directed Blood Donations Brochure

BB-FORMS-0201: ARC Autologous Donations Ordering-Scheduling Info

BB-FORMS-0202: ARC Autologous and Directed Donations FAQs

BB-FORMS-0203: ARC Blood Products Fax Order Form (Downtime)

BB-FORMS-0205: ARC Directed Donations Ordering-Scheduling

BB-POL-0003: Davie Medical Center Bermuda Run Transfusion Services Agreement

BB-POL-0012: Deviations, Nonconformance, and Adverse Reactions

BB-POL-0018: Platelets Protocols

BB-POL-0048: Receiving Blood Products into Inventory Protocol

BB-POL-0051: Requesting Autologous and Directed Donor Donations

BB-POL-0056: Unscheduled Interruptions to Laboratory Operations

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

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

BB-POL-0077: Dialysis Centers Agreement

BB-SOP-0010: PUBS and IUT Testing

BB-SOP-0014: Blood Product Entry

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

BB-SOP-0160: Unit Status/Disposition (Discard, Return, Transfer, Recall, Expired)

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

**Attachment 3: Units for WFBMC offsite Locations Quick Reference Guide**

Sending Blood Out of the Blood Bank:

|  |  |  |  |
| --- | --- | --- | --- |
| **Where is it going?** | **In BB LIS** | **How to pack units** | **Notes** |
| Dialysis, Nursing Homes, etc. | Issue the units in Sunquest | Pack in ARC boxes and send to location |  |
| Clemmons | Issue the unit is Sunquest | Pack in canvas cooler and send via DOT |  |
| AirCare | Change location in Blood Location | Refer Blood Cooler Protocol/Issue, send to base via DOT |  |
| EMS Agency | Change location in Blood Location | Refer to Blood Cooler Protocol/Issue, send to EMS agency OR Wilkes BB depending on location.  |  |
| Wilkes BBDavie BBLexington BBHighPoint BBOutside BB | Use Blood Status Update and Ship Out unit  | Pack in ARC box and send via DOT to blood bank | If ARC unit: Original unmodified unit must be transferred in BloodHub.  |