# 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

# Procedure Statement

Frozen red cell units contain a chemical, 40% glycerol, that is used in the freezing process to aid in the storage of the red cells. Glycerol must be removed after the unit has been thawed and prior to transfusion into the patient. The purpose of this procedure is to describe the steps taken to remove the glycerol and preparing and labeling the product for infusion.

# Scope

i. Procedure Owner/Implementer: Blood Bank Management

ii. Procedure Prepared by: Larry W. Waldron

iii. Who Performs Procedure: Blood Bank Staff

# Definitions

1. Procedure: A process or method for accomplishing a specific task or objective.
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. SCC: Soft Computer System – Blood Bank Information System
4. Deglycerolized Blood – Thawed units containing glycerol that are washed to remove the glycerol. Product has Expiration Date/Storage: 24 hours post thaw time @ 1-6°C.
5. XM: crossmatch
6. QC: quality control
7. CP: component prep
8. Deglyced: deglycerolized
9. High glycol method: Red cells frozen in 40% glycerol

**Sections**

I. Deglycerolization of Frozen Red Cells Protocols

II. Selecting and Thawing Unit

III. Loading Blood on COBE

IV. Deglycerolizing Blood Frozen with High Glycerol Method

V. Labeling Deglycerolized Red Cell Unit

VI. Computer Functions for Deglycerolization

VII. Extra Wash

VIII.Preparation of 0.7% and 8.5% Saline Solutions for Quality Control

IX. Deglycerolizing Frozen Segment

X. Printing ISBT Label from Stand-Alone Program During SCC Downtime

# Policy Guidelines – I. Deglycerolization of Frozen Red Cells Protocols

1. Deglycerolization is a procedure to remove glycerol from frozen red cells using decreasing

concentrations of saline.

* 1. The process must ensure the following results occur:
		1. Adequate removal of cryoprotectant agents
		2. Minimal free hemoglobin
		3. Recovery of at least 80% of original red cell volume
1. Frozen units are stored at -65°C or colder for a period of up to 10 years.
	1. Frozen red cells are frozen utilizing a 40% glycerol freeze method, then thawed and prepared on Cobe instrumentation.

2.2 Frozen units in canisters are overwrapped and thawed in a 30-37°C water

 Bath.

2.3 After thawing, the deglyced unit is stored at 1-6°C for up to 24 hours, not to

 exceed original expiration date of frozen unit.

a. If red cells are transferred out of the COBE set into another satellite container the expiration shall not exceed the storage time limit specified in the package insert. If no package insert is available, the component shall have an expiration time of 4 hours after transfer from the COBE set container.

2.4 Expiration date may be extended with approval of Medical Director.

**3.0 A** segment from the frozen unit is deglyced and used for testing.

 3.1 Cryoprotectant agents are removed to allow for:

* + 1. Crossmatching
		2. Antigen typing

 3.2 Enough red cells must remain for testing.

 3.3 If no segments are initially available, the unit may be deglyced first and then

 a segment tested.

**4.0 All** deglycerolized red cells prepared on site and/or received from another facility

 must be tested for the following before issue (*this includes units deglyced here and*

 *shipped to outside facility and units* *deglyced outside and shipped here*):

4.1 An acceptable hue check using 0.7% saline is done prior to allocation/issue

 of unit.

 4.2 An ABO is performed on the unit after it is deglyced and BEFORE irradiation

 (if needed).

**5.0 All** solutions and supplies used during the procedure must be in date and

 appearance acceptable.

**6.0** Quality control is annually performed on each COBE to ensure 80% recovery of red

 cells.

 *Refer to: 80 % Recovery Procedure in Quality Control.*

 6.1 Any frozen unit can be utilized for quality control.

 6.2 After the QC unit is deglyced, pre- and post- hematocrits are performed and

 compared.

**7.0 Credit** from the supplier for excessively hemolyzed units and bags broken during

 thawing may be obtained with authorization.

 7.1 Refer to: *Unit/Status Disposition* procedure in Quality Control Manual.

1. Canisters are returned to the Red Cross for credit so they may be re-used.
2. **SCC workflow rule: Irradiation of deglycerolized RBC**
	1. The workflow we have now for irradiated deglyced units does not work with how SCC is

built. (if the unit is not irradiated there is no problem)

 9.2 From now on this will need to be the process:

 **CP tech:**

1. Attach the *SCC Workflow, Irr a Deglyced RBC card* to the deglyced unit as a helpful reminder of the steps needed in SCC (see pic below)
2. Label bag and Label check
3. Do Hue check in SCC
4. Take unit to XM/V1/V2 tech for unit retype

 **XM/MAX tech**:

* 1. Perform and enter the unit retype
	2. Irradiate the unit (in SCC and physically)

Refer to: **SCC Workflow, Irr a Deglyced RBC card:**

 

9.3 If you don’t enter the unit retype before you irradiate the unit, it confuses SCC and

 you will have to order and result a unit retype on the Irradiated deglyced product.

**II. Selecting and Thawing Unit**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** Large plastic thawing bag

 **Reagents: NA**

 **Equipment:** 30-37° water bath

 **Specimen Requirements**: NA

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Obtain the patient’s MRN or crossmatch requisition and confirm with provider/nursing that thawing of frozen unit is still desired.** * 1. Go Patient>Orders>Display and highlight the frozen unit.
	2. Double click on the frozen unit and Click F6 to display the unit details.
1. The freezer location for the unit is in the Location box.
2. Alternately, the unit’s location may be recorded on the crossmatch requisition.
	1. Refer to Section *VIII. Deglycerolizing Frozen Segment*, if needed.
 |
| **2.0** | **Locate the unit to be deglycerolized in red cell freezer #10 or #22 or #23 and compare unit number on the frozen canister and the computer and/or requisition.****Protective Equipment: Cryo gloves**  |
| **3.0** | **Place the unit in a large plastic bag (found on shelf in CP) and close zipper seal. Remove excess air before sealing bag.****Protective Equipment: Cryo gloves**  3.1 Large plastic bags may be used up to 3 times. a. After first use, hang on “one use” hanger. b. After second use, hang on “two uses” hanger. c. After third use, discard and retrieve new bag. 3.2 Place unit in 30-37°C water bath.3.3 Bath water must not enter the bag containing the frozen cells and canister. |
| **4.0** | **The thawing process takes at least 25 minutes. Maximum time is 45 minutes.**4.1 Thaw frozen red blood cell with oscillation movement.  |
| **5.0** | **Once unit is thawed, drain outside of plastic bag and remove the canister.** |
| **6.0** | **Remove Special Blood Request Tag and/or HgbS paperwork.** |
| **7.0** | **Compare segment number on the unit to the segment number recorded on the requisition.** |
| **8.0** | **Discard any extra segments not attached to the unit after unit is deglyced or keep for possible refreezing for rare cells. Dry the unit.** 8.1 If unit is antigen negative for high incidence antigen, check with management for potentially refreezing to use for patient testing later.  |
| **9.0** | **Inspect the unit for any holes or leaks.**   9.1 Place paper towels on top of and beneath unit.  9.2 Agitate unit by pressing lightly then inspect for leaks.

|  |  |
| --- | --- |
| **If Unit:** | **Next Step:** |
| Has a hole/leak detected | Do not proceed. Place unit in quarantine. Notify management. |
| No hole/leak detected | Proceed to Section III. *Loading Blood on Cobe.* |

 |

**III. Loading Blood on Cobe**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** COBE processing set, hemostats, metal tube clip, pliers, large plastic thawing bag, 12x75 mm glass tubes

 **Reagents:** 1000mL container 1.6% saline, 150mL container 12% saline, 1000 ***or*** 2000mL container 0.9%/0.2% dextrose,

 0.7% saline

 **Equipment:** COBE/IBM 2991 cell processor, Hematron III heat sealer, 30-37° water bath

 **Specimen Requirements**: n/a

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Obtain one of each of the following:*** 12% saline
* 1.6% saline
* 0.2% dextrose/0.9% saline
* COBE processing set
 |
| **2.0** | **Examine each bag for correct saline type, appearance, and expiration date.*** 1. Confirm the type of saline on bag label.
	2. Check appearance of each bag.
1. Acceptable=clear, no leaking or open ports, free of particulate matter.
2. Unacceptable=opaque, any leaks or open ports, any particulate matter.
	1. Expiration date of bags must be in date.
 |
| **3.0** | **Document the supplies used (all salines, Cobe set) in SCC.***Refer to Section III: Computer Functions.*3.1 During downtime, utilize the *Component Prep Worksheet* and document the  following:1. Date/time washing started
2. Unit donor number
3. Unit’s blood group/type
4. Lot number and expiration date of saline bags
5. Lot number and expiration date of COBE processing set
6. Record the protocol as “Hi HCT.”

3.2 After downtime, supplies should be entered from Component Prep Worksheet  into SCC. *Refer to: Component Prep Worksheet* |
| **4.0** | **Install the COBE processing set and make certain that a hemostat is placed on the clear tubing below the red cell detector.** 4.1 Refer to: *Installing COBE/IBM Processing Set* procedure. |
| **5.0** | **Using aseptic technique, connect all of the saline containers as follows:**5.1 Blue-striped tubing: 12% saline5.2 Green-striped tubing: 1.6% saline5.3 Yellow-striped tubing: 0.2% dextrose/0.9% saline |
| **6.0** | **Hang the saline bags on the vertical posts as follows:**6.1 Hang the 12% saline on the back of the left hanger.6.2 Hang the 1.6% saline on the back of the right hanger.6.3 Hang the 0.2% dextrose/0.9% saline on the front of the right hanger. **COBE1 12% saline** **1.6% saline** **0.2% dextrose/0.9% saline** |
| **7.0** | **Connect the red-striped tubing to the unit of blood using sterile technique.**Protective Equipment: Face Shield/Safety Goggles7.1 Place the unit on top of the sliding doors of the COBE. |
| **8.0** | **Open the clamp on the blue-striped tubing and press BLOOD IN.** Protective Equipment: Face Shield/Safety Goggles8.1 This will allow 12% saline to enter the unit. |
| **9.0** | **Agitate the unit as all of the saline flows in.**Protective Equipment: Face Shield/Safety Goggles |
| **10.0** | **Press STOP/RESET after all of the saline has entered the unit.**Protective Equipment: Face Shield/Safety Goggles |
| **11.0** | **Clamp off the blue-striped tubing.**Protective Equipment: Face Shield/Safety Goggles |
| **12.0** | **Set a clock for 3 minutes and allow unit to sit for 3 to 10 minutes. (DO NOT allow the unit to equilibrate for less than 3 minutes or more than 10 minutes.)**Protective Equipment: Face Shield/Safety Goggles |
| **13.0** | **After sitting for 3 to 10 minutes, press PREDILUTE and allow 300mL of 1.6% saline (green line) to enter unit while agitating.** |
| **14.0** | **Press STOP/RESET once 300mL enters unit.**Protective Equipment: Face Shield/Safety Goggles |
| **15.0** | **Place unit on the left hanger near the front so that the spiked port is at the lowest point.**Protective Equipment: Face Shield/Safety Goggles |
| **16.0** | **Remove the hemostat from the clear tubing and press BLOOD IN, allowing blood to flow into the processing bag until it stops.** Protective Equipment: Face Shield/Safety Goggles  |
| **17.0** | **Remove the unit from the hanger and lower it after blood flow stops.**Protective Equipment: Face Shield/Safety Goggles |
| **18.0** | **Press AIR/OUT.** After all air has been pushed out, place unit back on the hanger.Protective Equipment: Face Shield/Safety Goggles |
| **19.0** | P**ress BLOOD IN.**Protective Equipment: Face Shield/Safety Goggles |
|  **20.0** | **Press STOP/RESET when the processing bag is full.** Protective Equipment: Face Shield/Safety Goggles |
| **21.0** | **Proceed to Section IV. *Deglycerolizing Blood.*** |

**IV. Deglycerolizing Blood Frozen with High Glycerol Method**

**Expiration Date/Storage: 24 hours post thaw time @ 1-6°C.**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** COBE processing set, hemostats, metal tube clip, pliers, large plastic thawing bag, 12x75 mm glass tubes

 **Reagents:** 1000mL container 1.6% saline, 150mL container 12% saline, 1000 ***or*** 2000mL container 0.9%/0.2% dextrose,

 0.7% saline

 **Equipment:** COBE/IBM 2991 cell processor, Hematron III heat sealer, 30-37° water bath

 **Specimen Requirements**: n/a

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Select which COBE is being used and program it for deglycerolization of RBC. For loading blood on the COBE, refer to Section II. *Loading Blood on Cobe*.*** 1. ***For BMT COBE*** set the controls by placing diode pins in the

 following configuration:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | TIMER | STOP | VALVE | STOP | RCO |
|  | 1 | 2 |  | 1 | 2 | 3 |  |  |
| 1 | ● | ○ | ○ | ● | ○ | ○ | ○ | ○ |
| 2 | ● | ○ | ○ | ○ | ● | ○ | ○ | ○ |
| 3 | ○ | ● | ○ | ○ | ○ | ● | ○ | ○ |
| 4 | ○ | ● | ○ | ○ | ○ | ● | ○ | ○ |
| 5 | ● | ● | ● | ○ | ○ | ○ | ○ | ○ |

* 1. ***For COBE #****3 or COBE #5***:** Select program 1.
	2. ***ALL COBES*:**

 Centrifuge speed: 3000 rpm Super Out Volume: 500mL Super Out Rate: 450mL/min Spin Timer 1: 2 min Minimum Agitate Time: 70 sec Spin Timer 2: 1 ½ min |
| **2.0** | **Press START/SPIN.**Protective Equipment: Face Shield/Safety Goggles |
| **3.0** | **Check the hue of the first SUPER OUT solution with a Haemonetics color comparator and record the value on the *Component Prep Worksheet****.*Protective Equipment: Face Shield/Safety Goggles3.1Interpretation of hue (HUE 1 in SCC)**:**

|  |  |
| --- | --- |
| **Acceptable** | **Unacceptable** |
| 1-7Proceed | >7Deglyce in computer and place on QC shelf. Consult with manager/medical director if unit is rare. |

* 1. If not all of the original red cell volume drained into processing bag, open

Valve #1when saline first drains. This will allow the remaining red cells to enter the processing bag along with the first saline. |
| **4.0** | **When the alarm sounds, perform the following:**Protective Equipment: Face Shield/Safety Goggles

|  |  |
| --- | --- |
| **If using BMT COBE** | **If using COBE #3/COBE #5** |
| * Remove the error diode pin in timer #1, row 5.
* Press CONTINUE
 | * Press CONTINUE
 |

 |
| **5.0** | **Compare the last SUPER OUT hue (HUE 2 in SCC) with the Haemonetics color comparator and record on the *Component Prep Worksheet.***Protective Equipment: Face Shield/Safety Goggles5.1. Interpretation of SUPER OUT hue:

|  |  |
| --- | --- |
| **Acceptable** | **Unacceptable** |
| 1,2,3,4Proceed if acceptable. | 5,6,7,8Wash again with 1000mL 0.2%/0.9% saline or remaining saline in 2000mL 0.2%/0.9% saline bag.  |

5.2 Refer to Section **VII*. Extra Wash*** Procedure. |
| **6.0** | **Press STOP/RESET when alarm sounds.**Protective Equipment: Face Shield/Safety Goggles |
| **7.0** | **Proceed to clamp as specified.**Protective Equipment: Face Shield/Safety Goggles7.1 Clamp off the clear tubing near the hexagonal seal with a hemostat. 7.2 Pull tubing from the red cell detector. 7.3 Create at least 4 segments on the clear tubing with the heat sealer. 7.4 Seal off all tubing to saline bags, original unit, and waste with  Sebra heat sealer.  7.5 Cut the tubing to the saline bags and waste seals but  Do Not cut to separate the original bag from the processing bag until  labeled. |
| **8.0** | **Lift the seal weight and open the COBE doors.**  8.1 Remove the centrifuge cover. 8.2 Remove the alignment blocks. |
| **9.0** | **Remove the processing bag and original unit, still attached**. 9.1 Clamp the tubing between the bag and the hexagonal seal with a metal Clip and pliers or heat seal. |
| **10.0** | **Disassemble and remove processing set and discard all saline and waste bags in large biohazard bin.** 10.1 Refer to: *Installing IBM/COBE Processing Set* procedure.  |
| **11.0** | **Proceed to V. *Labeling Deglycerolized Red Cell Unit.***11.1 Use Stand-alone ISBT program located on computer in CP when SCC is down.*Refer to Procedure X: Printing ISBT Label from Stand-Alone Program During SCC Downtime* |
| **12.0** | **Proceed to VI. *Computer Functions for Deglycerolization.*** |
| **13.0** | **Perform Label Check. (Refer to *Label Check Protocol/Procedure* in *Component Prep Manual* section 10).**13.1 In addition to performing label verification in SCC, a Label Check involves checking for proper labeling on the both the source and  prepared component.  13.2 Refer to table below for checking label:

|  |  |  |
| --- | --- | --- |
| **SSource Bag** | **Processing Bag** | **Check for:** |
| Unit donor number | Unit donor number | Identical unit number |
| Expiration date/time | Expiration date/time | 24 hours post thaw |
| ABO/Rh | ABO/Rh | ABO/Rh label identical |
| Collection facility | n/a | Collection information (See Attachment 2) |
| Product code | Product code | Codabar: 450 or 500 mL, irradiated or non (See Attachment 2)ISBT: Label will print after computer function. |
| Special attributes | Special attributes |  Directed, Auto, CMV, Sickle Cell (See Attachment 2) |

 |
| **14.0** | **Cut the original bag from the processing bag by cutting the seal closest to the original bag, making sure there are two seals on both tubing before the cut.**14.1 Remove two segments as follows:

|  |  |
| --- | --- |
| **Segment** | **Purpose** |
| One | Label with unit number for ABO recheck. |
| Two | Cut and drain into a tube labeled with unit number (for 0.7% saline check of solution). |
| Three | Visual Check at issue. |

 |
| **15.0** | **Perform 0.7% saline check on segment.**15.1 Add approximately 5mL 0.7% saline. a. Refer to Section VIII. *Preparation of* *Saline Solutions for Quality Control* if  not already prepared.15.2 Centrifuge for 1 minute.15.3 Compare the supernatant color of the 0.7% saline check tube to the  Haemonetics color comparator chart and record the value on the  *Component Prep Worksheet.*

|  |  |
| --- | --- |
| **Acceptable** | **Unacceptable** |
| 1-5Proceed | 6-8Deglyce in computer and place on QC shelf. Consult with manager/medical director if unit is rare.**NOTE: Sealing the segment may sometimes cause hemolysis. Transfer the contents to a transfer bag and repeat with a segment prepared from the transfer tubing.**  |

 |
| **16.0** | **Irradiate unit and perform Label Verification in SCC, if required.**16.1 NOTE: Recheck test and HUE test will be located under the deglyced product  and not under the irradiated deglyced product when resulting.  |
| **17.0** | **Complete crossmatch.**17.1

|  |  |
| --- | --- |
| **Unit Selection**  | **Steps** |
| ***Selected*** to patient with crossmatch in In Progress | 1. Go to Patient>Orders>Results
2. Enter MRN of patient and F12 to accept.
3. Click Crossmatch to open
4. F12 to accept selection
5. Change Status from P (In progress) to C for completed.
 |
| ***NOT selected*** to patient  | 1. Go to Inventory>POS>Select
2. Select unit to patient.
3. Enter results for crossmatch if not electronic.
4. F12 to accept.
5. Print
 |

 |
| **18.0** | **Select correct printer and print transfusion product tag.** |
| **19.0** | **Verify the information on tag to unit and tag the unit.** 19.1 Place hemolysis check segment with the unit and store in 1-6°C XM  refrigerator.19.2 Hemolysis hue of segment at issue is not required effective November 21,  2016.  |

**V. Labeling**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** COBE processing set, hemostats, metal tube clip, pliers, large plastic thawing bag, 12x75 mm glass tubes

 **Reagents:** 1000mL container 1.6% saline, 150mL container 12% saline, 1000 ***or*** 2000mL container 0.9%/0.2% dextrose,

 0.7% saline

 **Equipment:** COBE/IBM 2991 cell processor, Hematron III heat sealer, 30-37° water bath

 **Specimen Requirements**: n/a

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Place original bag and processing bag side by side.*** 1. Do not detach original bag until processing bag is labeled.
 |
| **2.0** | **Determine if original frozen red cell unit labeled in Codabar or ISBT format.** |
| **3.0** | **Label the deglycerolized red cell unit with the same format as the original frozen red cell unit.** 3.1 Record the following on the deglycerolized label:

|  |  |
| --- | --- |
| **Format** | **Labeling** |
| Codabar | 1. Donor number
2. Expiration date/time (24 hours from start of procedure)
3. ABO/Rh sticker
4. RBC Deglycerolized sticker (or irradiated)

a. Use sticker that reflects original volume (450 or  500).1. “Collected/Processed by” sticker
2. Any attachments on frozen unit bag need to be transferred to processing bag and attached securely, i.e. negative antigens.
3. Any special needs must be transferred to processing bag, such as irradiated, antigen status, CMV, etc.
4. See Attachment: BB.LABEL.1012
 |
| ISBT | 1. ISBT label will print on Hematrax printer once computer function is finished.
2. Any attachments on frozen unit bag need to be transferred to processing bag and attached securely.
3. Any special needs must be transferred to processing bag, such as irradiated, antigen status, CMV, etc.
4. See Attachment for ISBT label examples.
 |

   |
| **4.0** | **Label with any special attributes by using one or more of the following small labels:** 4.1 Directed Donation 4.2 Autologous Donation 4.3 Sickle Cell Negative 4.4 CMV Negative 4.5 See Attachment 2 for examples. |
| **5.0** | **Affix the label securely to the processing bag.** |
| **6.0** | **Proceed to VI. *Computer Functions for Deglycerolization*.** |

**VI. Computer Functions for Deglycerolization**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** NA

 **Reagents:** NA

 **Equipment:** SCC Computer

 **Specimen Requirements**: NA

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Click in the Inventory Icon  from the Main Menu.*** 1. Click:

|  |  |
| --- | --- |
| 1. **Status of Unit**
 | 1. **Go to:**
 |
| 1. ***Selected*** to Patient with Crossmatch Status pending (In progress in SCC)
 | 1. Edit>POS>cr\_Product>Change
2. Scan or Enter MRN
3. F12 to accept
4. Select correct stay if applicable
5. Highlight unit to degly and enter
6. Click F12 for How many? 1
 |
| 1. ***NOT Selected*** to Patient
 | 1. Edit>cr\_Product>Change.
2. Scan or enter the original product code in the first Org field
3. Alternately, click on the drop down arrow and select the original product code from the list of products that can be changed.
4. Select from the drop down, the correct code in the first PRD field that the unit(s) will be changed to.
5. Click F12 -Accept.
6. Scan in the unit number and product code (if required) of all units to be changed.
7. Click on F12-Accept unit list.
 |

 |
| **2.0** | **Review the Product Change Confirmation Screen.**2.1 Edit the date and time of creation, expiration, date or volume if needed.2.2 Click the white box to the right inside the product confirmation screen to  print a full face label.  a. The number may be changed if more than 1 label is needed.  |
| **3.0** | **Click Ctrl R-Supplies on right hand of screen to select supplies.**3.1 Click the drop down arrow and choose the supply, lot number and quantity  used.  a. Cobe set b. 12% Saline c. 1.6% Saline d. 0.9% Saline/0.2% dextrose3.2 Click F12 to accept. 3.3 Repeat steps 3.1 and 3.2 for each supply used.3.4 Click F12 to save. |
| **4.0** | **Select correct printer and F12 to accept.**4.1 The system should automatically display the unit to label verify.  |
| **5.0** | **Double click on the unit that requires label verification.** |
| **6.0** | **Scan in the Donation number, ABORh, Product Code and Expiration date labels into the appropriate field in the box that displays.** 6.1 Click Yes to “Save changes?” a. SCC automatically orders the Hue check and Retype for the unit.6.2

|  |  |
| --- | --- |
| Result | NEXT Steps  |
| Information Matches | 1. Proceed to Step 7.0
 |
| Information Does NOT Match | 1. Exception generated and unit quarantined.
2. Determine cause of Mismatch.
* If mismatch due to scanning in wrong order: Go to Inventory>Edit>Status and change status of unit to available.
	+ Go to Inventory>Edit >Labels>Print to bring up label
	+ Label Verify.
	+ Proceed to Step 7.0
* If mismatch due to true problem with unit and label
	+ Leave unit in quarantine status
	+ Write QA
	+ Notify management.
 |

 |
| **7.0** | **Result the Hue Check.**7.1 Go to Inventory>Orders>Results7.2 Scan unit number and product type. F12 to accept.7.3 Click on Hue Check7.4 Result the following:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test** | **Description** | **Possible Results** | **Acceptable Results** | **Unacceptable results** | **Comments** |
| **HUE 1** | First ‘super’ out | NT, 1, 2, 3, 4, 5, 6, 7, 8 | 1-7 | 8  |  |
| **HUE 2** | Last ‘super’ out hue | 1-4 | 5-8 | If 5-8, perform extra washes – Refer to Procedure VII |
| **HUE X** | Last ‘super’ out Hue if extra washes are used. | NT or 1-4 | 5-8 | If 5-8 discard unit in computer and request credit |
| **HUE .7** | Hue after additional of 0.7% saline and centrifugation | 1-5 | 6-8 | If 6-8 discard unit in computer and request credit |
| **HUE (Interp)** | Interpretation of above | PASSFAILINVLD | PASS | FAIL |  |

 |
| **8.0** | **Complete the unit retype test.**8.1 Refer to Manual Resulting of Tests |

**VII. Extra Wash**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves,

 **Supplies:** COBE processing set, hemostats, metal tube clip, pliers

 **Reagents:** 1000 ***or*** 2000mL container 0.9%/0.2% dextrose

 **Equipment:** COBE/IBM 2991 cell processor

 **Specimen Requirements**: n/a

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Obtain one 1000mL container of 0.2% dextrose/0.9% saline or continue using 2000mL container of 0.2% dextrose/0.9% saline and proceed to step 3.0.** * 1. Record lot number and expiration if using new bag on *Component Prep*

 *Worksheet.* |
| **2.0** | **Connect the 0.2% dextrose/0.9% saline to the yellow striped tubing and hang bag on the right hanger near the front.** |
| **3.0** | **Turn valve selector to V3 and press TUBE LOAD.** |
| **4.0** | **Let 150-200mL 0.2% dextrose/0.9% saline run into the processing bag.** |
| **5.0** | **Press STOP/RESET.** |
| **6.0** | **Set the controls of the COBE as follows:**6.1 For BMT COBE:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **TIMER** | **STOP** | **VALVE** | **STOP** | **RCO** |
|  | **1** | **2** |  | **1** | **2** | **3** |  |  |
| **1** | **○** | **●** | **○** | **○** | **○** | **●** | **○** | **○** |
| **2** | **○** | **●** | **○** | **○** | **○** | **●** | **○** | **○** |
| **3** | **●** | **●** | **●** | **○** | **○** | **○** | **○** | **○** |

6.2 For COBE #3/COBE #5: Select program 2. |
| **7.0** | **Press START/SPIN.**Protective Equipment: Face Shield/Safety Goggles |
| **8.0** | **When the alarm sounds, perform the following:**Protective Equipment: Face Shield/Safety Goggles

|  |  |
| --- | --- |
| **If using BMT COBE** | **If using COBE #3/COBE #5** |
| * Remove the error diode pin in timer #1, row 3.
* Press CONTINUE
 | * Press CONTINUE
 |

 |
| **9.0** | **Compare the last SUPER OUT hue (HUE X in SCC) with the Haemonetics color comparator and record the value on the *Component Prep Worksheet.***Protective Equipment: Face Shield/Safety Goggles9.1 Interpretation of SUPER OUT *after* Extra Wash:

|  |  |
| --- | --- |
| **Acceptable** | **Unacceptable** |
| 1-4Proceed | 5 or greaterDeglyce in computer and place on QC shelf. Consult with manager/medical director if unit is rare. |

 |
| **10.0** | **Press STOP/RESET when alarm sounds.**Protective Equipment: Face Shield/Safety Goggles |
| **11.0** | **Proceed with disassembly of processing set.** 11.1 Refer to: *Installing IBM/COBE Processing Set* procedure. |

**VIII. Preparation of Saline Solutions**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** 500mL plastic reagent bottle, 500mL graduated cylinder, reagent label

 **Reagents:** 500mL container 0.9% saline, 150mL container 12% saline, deionized water

 **Equipment:** n/a

 **Specimen Requirements**: n/a

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0**  | **Select the type of saline needed and follow instructions for preparation:**

|  |  |  |
| --- | --- | --- |
| Saline | Used for: | Instructions |
| 0.7% Saline | Fragility Test | 1. Measure 389mL 0.9% saline in a graduated cylinder and pour into squeeze bottle.
2. Measure 111mL deionized water (from DI water sink) and pour into the same squeeze bottle and swirl to mix.
3. **Store in Component Prep Area @ RT. Expiration is 2 months.**
 |
| 8.5% Saline | Deglycing Segments | 1. Measure 62mL DI water and pourinto squeeze bottle.
2. Add 150mL 12% saline into same squeeze bottle and swirl to mix.
3. **Store in Sera #3 @ 2-8°C. Expiration is 6 months.**
 |

 |
| **2.0** | **Complete Reagent label (See Attachment: BB.LABEL.1050) that has been labeled with the following:**2.1 Reagent’s name2.2 Preparation date/time2.3 Expiration date a. Expiration date should not exceed expiration of original saline  bags (0.9% or 12%) if they expire prior to the 2 month (0.7%) or 6  month (8.5%) expirations.2.4 Storage Temperature2.5 Tech’s initials2.6 Manufacturer/Lot number |

**IX. Deglycerolizing Frozen Segment**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** 12x75 glass tubes, scissors

 **Reagents:** 500mL container 0.9% saline, 150mL container 12% saline, deionized water

 **Equipment:** Serofuge centrifuge

 **Specimen Requirements**: n/a

*\*Note: Check Sera #3 to see if 8.5% saline is already prepared. If not, see Deglycerolization procedure Section VIII: Preparation of Saline Solutions.*

 **Moved to Crossmatch Procedure. Section X.**

**X. Printing ISBT Label from Stand-Alone Program During SCC Downtime**

 Chemical Risk Assessment: None

 Biological Risk Assessment: Moderate

 Protective Equipment: Lab coat, gloves

 **Supplies:** NA

 **Reagents:** NA

 **Equipment:** ISBT Label printer

 **Specimen Requirements**: n/a

| **STEPS** | **INSTRUCTIONS** |
| --- | --- |
| **1.0** | **Log into the Hema Standalone program that is located on the 2nd computer in the Component Prep area.*** 1. Click on the Hema Shortcut Icon on the desktop.
	2. Log in with the generic sign on:
1. User ID: BBTECH
2. Password: BLOODBANK1
 |
| **2.0** | **Select Print Label from the tab located in the upper left.** |
| **3.0** | **Select Full face label.** |
| **4.0** | **Scan unit number in the Unit ID Number field.** |
| **5.0** | **Select Product and choose ICCBBA Predefined Product.** |
| **6.0** | **Type Ecode for product label desired in the ICCBA Product code box using table below as guide.**6.1

|  |  |  |  |
| --- | --- | --- | --- |
| **Frozen Red Cell** | **Frozen Description** | **Deglyced**  | **Irradiated Deglyced** |
| E5098 | Frozen – open | E4580 | E4581 |
| E5085 | Frozen – leukoreduced | E4519 | E4521 |
| E0579 | Frozen – not leukoreduced | E4520 | E4522 |
| E5019 | Frozen apheresis – 1st part | E4590 | E4585 |
| E5020 | Frozen apheresis – 2nd part | E4591 | E4586 |

 |
| **7.0** | **Select the correct ABO/RH in ABO box.** |
| **8.0** | **Type expiration date/time.** |
| **9.0** | **Enter the number of labels desired.** |
| **10.0** | **Click Print and obtain label from ISBT printer.** |

# References

Technical Manual, American Association of Blood Banks (AABB). Revised periodically

Standards for Blood Banks and Transfusion Services. Revised periodically

Gammacell 3000 Elan, Large Chamber Blood Irradiator User’s Manual. 1999/2011.

RADSURE Type 15 Gy and Type 25 Gy Blood Irradiation Indicator Use Instructions. Revised 03/10.

# Related procedures/policies (Navex)

None

# Attachments/Linked documents (title 21)

Codabar Labeling/Reagent Label/ISBT Labeling

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