Wake Forest Baptist Medical Center	Blood Cooler Protocol BB.Protocol.1026.10	Dept:	324311
		Dept Name	Blood Bank
		Effective Date:	9/6/11
		Revised Date:	3/5/2020
Name & Title: CLIA Laboratory Medical Director		Contact:	Julie H. Simmons/ Christina S Warren
Signature: C Pomper		Date:	3/17/2020

1. General Protocol Statement:

A. **Purpose:** This protocol is to outline the proper storage and usage for the blood bank coolers. These coolers are used to keep the blood products regulated at their proper temperatures during transport and while awaiting transfusions. This protocol also clarifies the agreement that has been made between Air Care at WFBMC and Blood Bank at WFBMC to supply blood units on each helicopter in a storage capacity in case of need meeting all of the regulatory and accreditation requirements for storage and transfusion of blood. This protocol discusses how to use and resolve any issues with the SPOT Tracking System. Not only does the Blood Bank need to monitor the temperature of the units but also their location.

B. Responsible Department/Scope:

i. Procedure owner/Implementer: Julie H. Simmons/ Christina Warren
ii. Procedure prepared by: Julie Jackson
iii. Who performs procedure: Department staff/management

C. Definitions:

SPOT Tracking System- a program that has been installed throughout the hospital that tracks hospital equipment.

RFID Tag- a radio frequency identification locator that is attached to the coolers which allows them to be tracked by the SPOT tracking system.

Air Care- Air Care services at Wake Forest Baptist Medical Center

Air Care coolers- Pelican (formerly Minnesota Thermal Coolers)-Series EMT canvas bag, 4L Volume

Blood Bank- Blood Bank at Wake Forest Baptist Medical Center

Safe-T-Vue- indicator applied to the back of the blood unit that monitors the temperature the unit has been exposed from 1-10°C.

WFBMC- Wake Forest Baptist Medical Center-main campus

SEMS – Surry County EMS

SCC – Soft Computer Consultants

Max Q coolers – cooler from PackMaxQ validated to hold blood products at 1 to 6C

Insert/ Lid- Golden Hour cooler insert with lid

Panels- Credo inserts (set of 6 panels)

Bricks- MaxQ inserts (blue gel and white Koolit gel packs)

MTP- Massive Transfusion Protocol

ED- Emergency Department

D. Sections:

Section I- Blood Bank Cooler Protocol

Procedure- Conditioning of Cooler inserts/lids and panels for use- Golden Hour, Credo and small Canvas blood coolers

Section II- Air Care/Surry County EMS Protocol

Procedures- Packing Air Care and EMS Canvas blood coolers

Returning Air Care and EMS Canvas blood coolers

Section III- MTP Pack for Adult ED Emerge Refrigerator Protocols

Procedures- Conditioning and packing of MTP Pack coolers

Creating MTP Packs in Blood Track and adding to Emerge

Reconciliation of returned MTP Packs

Section IV- MaxQ coolers (not MTP packs) Protocols

Conditioning and packing of MaxQ coolers for Routine blood transport

Section V- SPOT Tracking System Protocol

2. Protocol:

Section I- Blood Bank Cooler Protocol

1.0 The Blood Bank will use various validated coolers to store blood and blood products when multiple units are requested for a single patient in the Operating Room, the Emergency Department and remotely located outpatient clinics facilities to maintain the proper storage temperature of issued blood and blood components. Blood products sent to outpatient dialysis centers will be packed in Red Cross boxes since these are not returned quickly.

2.0 Issue one (1) patient's blood in a cooler at one time. Do not proceed to issue multiple patients with multiple coolers at the same time. Complete the process for one patient prior to starting the process for a second patient.

3.0 Coolers are inspected for intactness and cleanliness at each issue. Coolers that are not intact or are dirty are quarantined. (If a floor brings a floor cooler that is not intact or dirty, then a Blood Bank cooler may be used to issue product until the floor cooler is repaired or cleaned.)

4.0 Validated coolers must be approved by management and prepared as below:

4.1 Validated coolers will be assigned an ID number.

4.2 A cooler identification tag will be attached to the side of the cooler. The following information must be on the identification tag:

a. For BLOOD coolers:

- Cooler ID Number
- Return to Blood Bank ASAP
- Do not store platelets in this cooler
- KEEP ALL LIDS CLOSED after opening
- BIOHAZARD

b. For PLATELET coolers:

- Cooler ID Number
- Return to Blood Bank ASAP
- FOR PLATELET TRANSPORT ONLY
- BIOHAZARD

5.0 All new cooler shells, inserts/lids, panels and bricks will be validated upon receipt and added to the list for QC.

5.1 After initial validation inserts/lids, panels and bricks will only need to be QC'd every other year.

5.2 After initial validation cooler shells do not need to be QC'd again unless repaired or quality of the cooler is questioned.

5.3 Each cooler shell, insert/lid, panel and brick will be assigned an ID #/name.

5.4 Validated, tagged coolers will be assigned an RFID tag which will be securely affixed on the side of the cooler.

a. Contact SPOT at SpotSupport_DL@wakehealth.edu to have RFID tag placed and made available for use in the SPOT Tracking System.

Go to procedure (FD): SPOT Tracking System (BB.FD.1021)

5.5 Any new coolers, inserts/lids, panels and bricks must be added to the equipment list by the designated techs.

5.6 For cooler QC schedule:

Go To procedure (QC): Cooler Validation, QC and Cleaning

6.0 The minimum freezing times required for inserts/lids, panels and bricks before use are listed below

Cooler Type	Freezer T°	Minimum freezing time
Golden Hour® O.R Container (Golden Hours)	-18 to -30°C	8 hours
Crēdo Cube™ O.R. Container (Crēdos)	-18 to -30°C	12 hours
Crēdo Cube™ (canvas coolers) (Crēdo Cubes)	-18 to -30°C	12 hours
Platelet coolers	Not applicable Store at Room Temp	Not applicable
MaxQ Cooler bricks	-18 to -30°C	24 hours

6.1 Cooler Prep Flags must be used for all inner inserts/lids, panels and bricks being frozen and must follow the cooler as it is conditioned and used.

7.0 Golden Hour inserts/lids and Credo panels must be conditioned before being used in the coolers with blood products

7.1 After freezing, the inserts/lids, and panels must also be conditioned at room temperature (RT) before being used in the coolers with blood products.

7.2 Inserts and lids are conditioned at room temperature until the infrared thermometer measured temperature is between 2-5°C for either IMMEDIATE use or storage in refrigerator for future use.

8.0 Conditioned Golden Hour and Credo cooler inserts and panels

8.1 Will be stored in a refrigerator maintained at 2-5°C for a maximum of 72 hours.

8.2 Unused cooler inserts/lids and/or panels remaining at 2-5°C for >72 hours must be returned to the freezer for re-freezing as stated in Step 7 above.

9.0 MaxQ bricks:

9.1 Small blue MaxQ and Large red MaxQ coolers used for normal blood transport do not require conditioning as they are used directly from the freezer.

9.2 Large red MaxQ coolers that are to be kept refrigerated in the ED Emerge refrigerator for MTP packs need to be conditioned at refrigerator temperatures before use.

a. DO NOT use frozen bricks for the MTP pack coolers as this will cause the temperature of the cooler to dip below freezing and damage the blood products.

10.0 Each cooler and insert/lid, panel and brick are treated differently. Below is a quick reference chart showing the differences:

COOLER TYPES – INSERT CONDITIONING REQUIRED			
Cooler Type	**Insert type**	**Minimum Freeze time**	**Conditioning required**
Golden Hour® Routine product transport	Golden Hour insert and lid	8 hrs	Set at RT° until 2-5°C Store in fridge* up to 72 hrs
Small Canvas Off-Site Cooler	Golden Hour insert and lid	8 hrs	Set at RT° until 2-5°C Store in fridge* up to 72 hrs
Crēdo ™ Routine product transport	Crēdo panels 6 panels	12 hrs	Set at RT° until 2-5°C Store in fridge* up to 72 hrs
Large Canvas **AIRCARE** (MTP pack backup cooler)	AirCare panels 6 panels	12 hrs	Set at RT° until 2-5°C Used immediately in cooler
MAX Q 2 Liter (Small blue) Routine product transport	White Koolit gel packs (bricks) 2 bricks	24 hrs	None Use frozen
MAX Q 4 Liter (Large red) Routine product transport	Blue gel packs (bricks) 3 bricks	24 hrs	None Use frozen
MAX Q 4 Liter (Large red) MTP packs	Blue gel packs (bricks) 3 bricks	24 hrs	Set in fridge* for 24-48 hrs before use

*1-6°C

11.0 Issued coolers will be tracked via their RFID tag and the SPOT Tracking System

12.0 Return of coolers:

12.1 Any cooler insert/lids, panels and/or bricks used in a cooler for blood storage will be returned to the freezer for the required freezing time upon return to the blood bank.

Exception: provided the Golden Hour or Credo cooler insert and/or panels are within the acceptable temperature range of 2-5° C and the maximum allowable time of use has not been exceeded, coolers may be re-used.

a. The "return" time must remain as determined with the initial issue of the cooler.

b. Cooler inserts/lids and/or panels shall be left in the cooler with the cooler flag attached to the outside of the cooler.

c. The initial "return time" must be documented on the initial issue slip which will be maintained with the cooler.

d. Subsequent use of the cooler will be followed by attaching the second issue slip to the original issue slip and cooler prep flag and recording the internal temperature of the cooler on the issue slip.

e. The return time for the cooler will be the same as for the initial issue.

12.2 MAX Q Coolers may be re-used within the 10 hour expiration date of the cooler.

a. Bricks shall be left in the cooler with the cooler flag attached to the outside of the cooler.

b. The initial "return time" must be documented on the initial issue slip which will be maintained with the cooler.

c. Subsequent use of the cooler will be followed by attaching the second issue slip to the original issue slip and cooler prep flag.

d. The return time for the cooler will be the same as for the initial issue.

e. This **does not** include the red MaxQ MTP pack coolers.

12.3 Issued coolers which have exceeded their allowable storage time will be flagged by the SPOT Tracking system. Cooler conditions are indicated by the following codes:

CODE INDICATOR	COOLER CONDITION
Home Base	Cooler is inside the Blood Bank and available for use or located at the designated "Home Base" on the floor. Blood Bank is considered the cooler "Home Base" for BB coolers.
Issued	Cooler has been issued and has been detected by the SPOT System as having left the Blood Bank. The location of the cooler will be displayed. This status indicates in use.

12.4 Any blood product returned after the maximum allowable cooler storage time must be scanned for temperature using an infrared thermometer.

a. Units maintaining a temperature of 1-6°C may be returned to inventory. A comment must be included in SCC in unit history stating the temperature of the unit(s) upon their return.

b. Units maintaining a temperature of 7-10°C should be quarantined for 24 hours. Consult management about disposal.

13.0 Cleaning and storage of coolers

13.1 All plastic coolers stored within the Blood Bank will be cleaned, disinfected and dried annually by assigned staff.

13.2 Canvas coolers and MaxQ coolers will be inspected and replaced as necessary.

Go to procedure (QC): Cooler Validation, QC and Cleaning (BB.QC.1005)

13.3 All coolers will be stored on the shelving provided at Front Desk.

14.0 Cooler Descriptions and Intentions

See attachment 1

15.0 The Blood Bank may validate other containers for the storage of blood and blood products as necessary.

16.0 Exceptions to QC will be the Large Credo Cubes and floor platelet coolers.

16.1 The Large Credo Cubes are used infrequently and will be monitored when used with a Global Sensor.

16.2 They are validated upon receipt but not annually.

16.3 Platelets are transported in coolers to the floors and should be transfused as soon as possible upon arrival so are not subject to the quality control procedure.

17.0 Management will be informed of any damaged or missing coolers.

18.0 Any problems with the SPOT Tracking System must be reported to management.

18.1 Document problem using the *"Cooler/Insert Maintenance Log"*

18.2 Email SPOT at SpotSupport_DL@wakehealth.edu or Page at 336-806-8952.

18.3 If there is no response during the shift, call the Help Desk and report the problem with the SPOT Tracking System.

Go to procedure (FD): SPOT Tracking System (BB.FD.1021)

Procedure: Conditioning of Cooler inserts/lids and panels for use- Golden Hour, Credo and small Canvas blood coolers

Chemical Risk Assessment: None
Biological Risk Assessment: None
Protective Equipment: Gloves

Supplies: Cooler Prep Flag
Reagents: N/A
Equipment: Cooler Inserts and Panels
Specimen Requirements: N/A

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Fill out Cooler Prep flag for each insert/lid or panel set to be frozen.** 1.1 Document the inserts/lid or panels set number on the cooler prep flag. *See attachment 2 area 2* 1.2 The unique ID number for the insert/lid or panel set can be found on the underside of each part of the container. 1.3 Make sure that the insert ID matches the lid ID. 1.4 Make sure that all the components in a set have matching IDs. 1.5 If the numbers don't match, set off to the side to await the matching insert, lid or panel.	
2.0	**Store insert/lid or panel set in designated freezer** 2.1 Document the Date and Time the insert/lid or panels are being placed in the freezer to be frozen. *See attachment 2 area 3* 2.2 **For Inserts/Lids:** a. Place lid of insert upright inside insert b. Place Cooler Prep flag in insert c. Place all 3 items in designated freezer near Front Desk. d. Inserts and lids must be frozen for a minimum of **8 hours** before they can be removed from the freezer for conditioning and use. 2.3 **For Panels:** a. Stack 1 set of panels on top of each other b. Place Cooler Prep Flag in between 2 of the panels. c. Place all items in designated freezer near Front Desk.	

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th><th>CHANGE/ APPROVAL</th></tr>
<tr><td></td><td>d. Panels must be frozen for a minimum of 12 hours before they can be removed from the freezer for conditioning and use.</td><td></td></tr>
<tr><td>3.0</td><td>Remove insert/lid or panel from freezer when ready to condition.
3.1 Document the date and time the insert/lid or panels are taken out of the freezer to be conditioned for use.
See attachment 2 area 4</td><td></td></tr>
<tr><td>4.0</td><td>Condition insert/lid or panels
4.1 Place insert/lid, and/or panels removed from the freezer on a towel lined shelf at Front Desk to condition at Room Temperature.
4.2 Lay inserts on their side, prop lid against insert.
4.3 Set panels in the rack provided at Front Desk in the cooler conditioning area.
4.4 If rack is full, prop panels up against the walls adjacent to the thawing shelf.
4.5 Set a timer for 15- 20 minutes.
4.6 Upon alarm of timer, scan the inside face of each insert, lid, and/or panel with an infrared thermometer.
a. See chart below for acceptable and non-acceptable temperatures.
<table>
<tr><th>Insert/Panel Temperature</th><th>Acceptable?</th><th>Action</th></tr>
<tr><td>2-5ºC</td><td>Y</td><td>Store in Front Desk Refrigerator
or
Place in cooler for immediate use</td></tr>
<tr><td>Less than 2ºC</td><td>N</td><td>Reset timer for 5-10 min
Check temps again</td></tr>
<tr><td>7º or warmer</td><td>N</td><td>Return to freezer
Golden hour Coolers: 8 hrs
Crēdo panels: 12 hrs</td></tr>
</table></td><td></td></tr>
<tr><td>5.0</td><td>Document temperature before storing in refrigerator or using immediately.
6.1 Acceptable range 2-5ºC
6.2 Document final temperatures of inserts/lids and panels, taken with an infrared thermometer in the spaces provided before storing in the Front Desk refrigerator or placing in cooler for immediate use.
See attachment 2 area 6</td><td></td></tr>
<tr><td>6.0</td><td>Document the date and time the inserts/lids and panels are acceptably conditioned and placed into the refrigerator or cooler.</td><td></td></tr>
</table>

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
	5.1 Appropriately conditioned inserts/lids and panels may be used immediately. *5.2 See attachment 2 area 5* **NOTE:** After 72 hours in the refrigerator –must place back in freezer and reconditioned. (Golden hour insert/lid for 8 hrs / Crēdo panels for 12 hrs)	

Section II- Air Care/Surry County EMS Protocol

1.0 The coolers will be maintained, stocked with Group O neg or Group O pos units of blood *(when Group O neg shortages)* , dispensed to Air Care employees or designated courier to support the Medical Centers mission of providing emergent care for blood transfusion when necessary to the communities it serves.

1.1 *Refer to Attachment 3: Critical Care Transport: Infusion of Blood.*

2.0 Air Care/Surry County EMS will notify Blood Bank when there is a need for additional blood/or an exchange of coolers.

3.0 The conditioning of the panels will only be prepared by the Blood Bank at the time of notification.

3.1 Do not use preconditioned panels because we want to maximize the time for use.

3.2 Precondition panels when Air Care/Surry County EMS notifies the Blood Bank.

4.0 The cooler will have conditioned liners inserted along with a global sensor data logger. The data logger will be programmed for 30 minute intervals.

5.0 The cooler inserts/lids, panels and bricks will have quality control performed every other year by the Blood Bank once they have been validated at receipt (new).

6.0 Blood units will be maintained in the cooler and routinely returned to us prior to the 4th day.

6.1 However, during June through September the coolers will be evaluated to determine if return time will be shorter.

7.0 All units will have Safe-T-Vue indicators attached to the back of the unit to monitor the temperature during storage outside the Blood Bank environment.

Acceptable criteria: white, white speckled with red (1- 10C)

Unacceptable criteria: completely red (greater than 10C or less than 1C)

8.0 No other blood units will be stored in the coolers except Group O units from WFBMC Blood Bank.

9.0 Blood Bank will provide the following in each cooler:

Air Care	Surry EMS
2 units: Group O low titer Whole Blood leukoreduced 1 unit: Group O neg red cell 1 unit: Group A plasma	2 units: Group O neg red cells

9.1 In times of blood shortages, Group O negative red cell units may not be available and Group O positive red cell units may be substituted.

10.0 Do not attach any transfusion product tags to units.

11.0 All units transfused must have a Blood Bank Emergency Release Form completed for the patient and signed by the ordering physician and returned to the Blood Bank.

11.1 These completed forms can be stored in the returned cooler, scanned and emailed or faxed by Air Care/Surry County EMS within 24 hours of transfusion.

12.0 Coolers for the blood units will be refreshed or restocked by Blood Bank every 3 to 4 days (depending on time of year) whether or not the blood units issued to Air Care/Surry County EMS have been transfused.

13.0 The cooler holds 1-6°C temperature for longer periods of time as predetermined by validation testing but Air Care will return the coolers for reconditioning on the 4th day or sooner if units of blood are needed.

14.0 Air Care/Surry County EMS will obtain blood units only from the Blood Bank at WFBMC.

15.0 Air Care/Surry County EMS will not store any other blood units in the coolers except the blood issued by Blood Bank at WFBMC.

16.0 Blood units will not be removed from the cooler to be stored in another location.

17.0 Coolers will not be stored in refrigerators or freezers outside the Blood Bank.

18.0 Utilization review of the blood units issued to Air Care/Surry County EMS will be reported: units issued, transfused, wasted.

19.0 Patients transfused with any blood units MUST be identified on the Emergency Release form.

20.0 The coolers will have RFID tags on the outside and be tracked by the SPOT program on screen as coolers.

21.0 Each unit transfusion will be audited by Blood Bank.

22.0 When a transfusion reaction is reported, the policies and procedures for nursing will be followed.

22.1 A blood specimen and the unit will be returned to the Blood Bank for investigation.

23.0 *See Attachment 1- Cooler Descriptions and Intentions*

Procedure: Packing Air Care and EMS Canvas blood coolers

Chemical Risk Assessment: None
Biological Risk Assessment: None
Protective Equipment: Gloves

Supplies: Cooler Prep Flag
Reagents: N/A
Equipment: Cooler Inserts and Panels
Specimen Requirements: N/A

<table>
<tr><th>STEPS</th><th>INSTRUCTIONS</th></tr>
<tr><td>1.0</td><td>Condition panels per procedure.
1.1 Go to Section I: Conditioning of Cooler inserts/lids and panels for use- Golden Hour, Credo and Canvas blood coolers
1.2 Condition 5 of the 6 panels to a temperature of 2-5°C
1.3 The 6th panel must remain frozen until ready to place in cooler
1.4 Document on cooler prep flag as stated in the procedure in section I.
a. Time removed from freezer
b. Temperature readings when conditioning
c. See attachment 2 areas 4 & 6</td></tr>
<tr><td>2.0</td><td>Immediately prepare the following units:
<table>
<tr><th>Air Care</th><th>Surry EMS</th></tr>
<tr><td>2 units: Group O low titer leukoreduced Whole Blood
1 unit: Group O neg red cell
1 unit: Group A plasma</td><td>2 units: Group O neg packed cells

Refer to Surry EMS Protocols for units issued to Mini BioFridge</td></tr>
</table>
2.1 Make certain the units will not outdate during the time they are at Air Care/Surry County EMS.
2.2 Apply a Safe-T-Vue to each unit.
2.3 Attach label to each unit bag, “Uncrossmatched Blood”.</td></tr>
<tr><td>3.0</td><td>Change the Location for each unit in SCC.
3.1 In SCC go to Inventory > Edit > Location
3.2 Scan unit (also scan product code if prompted)
3.3 Select New Location from drop down list:
<table>
<tr><td>AIRCARE 1- LEXINGTON</td><td>AC1</td></tr>
<tr><td>AIRCARE 2- WILKESBORO</td><td>AC2W</td></tr>
<tr><td>AIRCARE 3- MARTINSVILLE</td><td>AC3</td></tr>
<tr><td>AIRCARE GROUND TRANSPORT 1</td><td>ACG1</td></tr>
<tr><td>AIRCARE GROUND TRANSPORT 2</td><td>ACG2</td></tr>
<tr><td>RETURN TO BAPTIST MED CENTER, BB</td><td>BMC</td></tr>
<tr><td>Surry Co EMS 1</td><td>SEMS1</td></tr>
</table></td></tr>
</table>

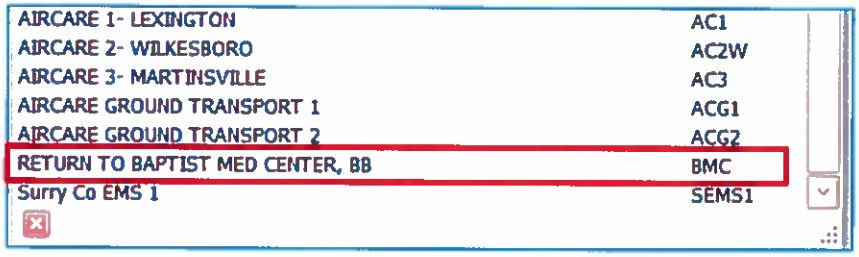
STEPS	INSTRUCTIONS
	NOTE: location BMC is for use when units are returned
4.0	**Pack the cooler.** 4.1 Place the conditioned panels into the cooler, leaving the top frozen off. Then put the units into the cooler. 4.2 The data logger probe must be placed between the units so that the probe remains in contact with the unit.  4.3 Add one of the smaller gel packs with temperature range of 2-5°C on top of the units.  4.4 Obtain the frozen panel from the freezer and place on the top. *This must be placed on the top and should not come into direct contact with the units (thus the gel pack)*  4.5 Securely close the inner liner lid. Close the Velcro straps.

STEPS	INSTRUCTIONS
	 4.6 Zip up the cooler and secure the cooler with a red fastener.
5.0	**Insert Emergency Release forms, one for each unit in cooler.** 5.1 The forms must be folded and inserted in the outside pocket.
6.0	**Calculate the "Return by" date/time and attach to cooler.** 6.1 The cooler should have a 4 day returned date for Air Care/Surry County EMS Coolers. a. The days may decrease to 3 days during the summertime. 6.2 In the clear plastic pocket attached to the cooler place the "Return by" card with the date and time that the cooler must be returned to the Blood Bank.
7.0	**Fill out a Blood Bank Issue form.** 7.1 On the Issue form a. Record all of the unit #s and product codes (E code) in the cooler b. Record the date to be returned c. Record the temperature of cooler at time of issuing from the Data logger. 7.2 Air Care/Surry County EMS must sign the Blood Bank Issue slip before removal from the Blood Bank. a. The pink copy of the issue form goes with AirCare/Surry County EMS. 7.3 Attach the top copy of the Issue form to the cooler prep flag and store in the clip for Air Care/Surry County EMS at front desk. a. Any copies of ISBT labels of the units (photocopy or reprinted ISBT label) should be stapled to the form.

Procedure: Returning Air Care and EMS Canvas blood coolers

Chemical Risk Assessment: None
Biological Risk Assessment: None
Protective Equipment: Gloves

Supplies: Cooler Prep Flag
Reagents: N/A
Equipment: Cooler Inserts and Panels
Specimen Requirements: N/A

STEPS	INSTRUCTIONS
1.0	**Check the temperature of the returned cooler using the attached data logger.** 1.1 If the temperature is 2-6°C the units may be placed back into inventory. 1.2 If the temperature is 6-10°C quarantine units and consult management. 1.3 If the temperature is over 10°C discard unit (physically and in SCC) and write a QA for management.
2.0	**Change the Location for each unit in SCC back to Baptist.** 2.1 In SCC go to **Inventory > Edit > Location** 2.2 Scan unit (also scan product code if prompted) 2.3 Select New Location of BMC. 
3.0	**Pull the Issue form from the front desk and file with other issue slips.**
4.0	**Place all 6 panels back in freezer and place gel pack in refrigerator.** Go to *Section I: Conditioning of Cooler inserts/lids and panels for use- Golden Hour, Credo and Canvas blood coolers*
5.0	**Emergency issue (in SCC) any units transfused by Air Care or Surry EMS.** 5.1 Patient information should be on the Emergency Release form filled out by the Air Care or Surry EMS team. 5.2 If units were given to a patient that was taken to another facility: a. Air Care /Surry County EMS will provide the Blood Bank the identity of the other hospital and the patient on the Blood Bank Emergency Release form. b. The Blood Bank will arrange the transfer of blood units to the other facility if possible. i. Units are to be transferred in SCC if unable to issue unit to patient. • Add patient information in a unit comment in SCC. ii. Units need to be transferred by the supplier to ensure proper charging:

STEPS	INSTRUCTIONS		
		For:	Do:
		ARC	Transfer in Blood Hub
		Non ARC	Notify management to invoice the other facility

Section III- MTP Pack for Adult ED Emerge Refrigerator Protocols

1.0 MTP packs are to be used in the adult ED refrigerator only.

2.0 Each MTP pack will contain 2 O Positive Whole Blood units

3.0 MTP packs are to be removed from the ED refrigerator for patients who are on massive protocol and more than one unit of whole blood may be required.

4.0 MTP packs will last up to 7 days in a refrigerator.

5.0 Once the cooler has been removed from the ED refrigerator the pack will expire in 5 hours.

5.1 Once a MTP pack has been removed for use it cannot be returned to the refrigerator, it must be returned to the Blood Bank.

6.0 The standard cooler to be used for MTP packs is a red MaxQ cooler. The canvas coolers can be used as a backup when needed (to be packed in the same way as for Air Care, see Section II- Air Care/Surry County EMS Protocol).

7.0 MTP packs are **not** be placed in the Peds ED or L&D refrigerator.

8.0 Two (2) extra sets of bricks are to be conditioning in the refrigerator at all times.

8.1 Due to the extended amount of time it takes to condition a cooler 2 sets of bricks should be in the process of coming to refrigerator temperature or ready in the 24-48 hour waiting period.

9.0 See Attachment 1- Cooler Descriptions and Intentions

10.0 For nursing steps on removing MTP Pack and returning used pack see

Attachment 6: Using MTP Pack from Emerge Refrigerator

Procedure: Conditioning and packing of MTP Pack coolers

Chemical Risk Assessment: None
Biological Risk Assessment: None
Protective Equipment: Gloves

Supplies: Cooler Prep Flag
Reagents: N/A
Equipment: Cooler Inserts and Panels
Specimen Requirements: N/A

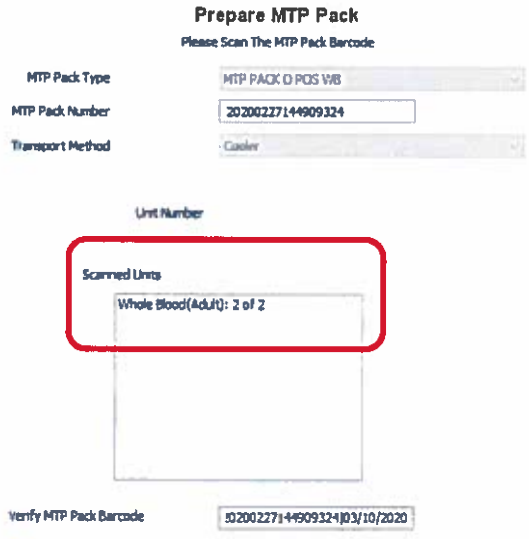
STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Fill out Cooler Prep flag for each brick set (3 bricks) to be frozen.** 1.1 Document the brick set number on the cooler prep flag. *See attachment 2 area 2* 1.2 The unique ID number for the brick set can be found on the underside of each part of the container. 1.3 Make sure that all the bricks in a set have matching IDs. 1.4 If the numbers don't match setup off to the side to await the matching brick.	
2.0	**Store brick set in designated Freezer** 2.1 Document the Date and Time the bricks are being placed in the freezer to be frozen. *See attachment 2 area 3* a. Date/Time may be documented manually or by passing the Cooler Prep Flag through a time stamper at the Front Desk. 2.2 Bundle 3 bricks into 1 set by wrapping a rubber band around them. a. Place Cooler Prep Flag in between 2 of the bricks. b. Place all items in designated freezer near Front Desk. c. Panels must be frozen for a minimum of **24 hours** before they can be removed from the freezer for conditioning and use.	
3.0	**Remove bricks from freezer when ready to condition.** 3.1 Document the date and time the bricks are taken out of the freezer to be conditioned for use. *See attachment 2 area 4*	
4.0	**Condition bricks** 4.1 Place frozen bricks on a towel lined shelf in the designated refrigerator to condition at refrigerator temperature. 4.2 Lay bricks out on towel side by side.	

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
	4.3 Set a timer for 24 hours. 4.4 Upon alarm of timer: a. **For immediate use:** i. Place the bricks inside the MaxQ cooler as seen in picture below and continue on to next step (5.0):  See *Attachment 3: Packing a MTP Pack Cooler* b. If a cooler is **not needed immediately** keep the bricks where they are and set timer for another 24 hours. i. Bricks can be used for 24 to 48 hours after they have been removed from the freezer. ii. If not used within the second 24 hours (a total of 48 hours since removal from freezer) return bricks to freezer (see steps 1.0 and 2.0)	
5.0	**Record the prepared date/time** 5.1 Write on a Prepared Date/Time card and slip in the attached clear badge holder. **Prepared on:** **Date:** **Time:** See *Attachment 3: Packing a MTP Pack Cooler*	
6.0	**Select 2 O positive whole blood units that have more than 7 days expiration left.** 6.1 MTP packs are good for 7 days unopened in the refrigerator. 6.2 Attach a Save-T-Vue to each unit See *Section II- Air Care/Surry County EMS Protocol; protocol 7.0* 6.3 Photocopy units (or reprint ISBT label in SCC) and place copies in clear sleeve on top of cooler. See *Attachment 3: Packing a MTP Pack Cooler*	

Procedure: Creating MTP Packs in Blood Track and adding to Emerge

Chemical Risk Assessment: None
Biological Risk Assessment: None
Protective Equipment: Gloves

Supplies: Cooler
Reagents: N/A
Equipment: Cooler Inserts and Panels
Specimen Requirements: N/A

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Create an MTP pack in Blood Track** 1.1 In Blood Track Manager go to **Transactions > Activate Out** 1.2 Once the units are Activated out, on the same screen click on **Prepare MTP Packs** 1.3 Select the MTP Pack type: **MTP PACK O POS WB** 1.4 The MTP Pack # will auto fill 1.5 Select the Transport Method: **Cooler** 1.6 Scan the unit # 1.7 Scan the 2nd unit # 1.8 The # of units will tally on the screen:  1.9 The MTP Pack label will automatically print on the zebra printer by BB Monitor1. 1.10 Scan the MTP Pack label to verify the barcode. 1.11 The pack is now built in Blood Track.	

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
	NOTE: If for some reason the barcode is not scanned then Blood Track will disassemble the pack and the whole blood units are free to be added to another MTP Pack. See *Attachment 4: How to create a MTP Pack in Blood Track*	
2.0	**Place the MTP Pack label in the clear badge holder attached to the cooler.** 2.1 Use the same badge holder as in step 5.0 making sure that the MTP pack label and the Prepared card are both visible. 2.2 This label will be used to scan the pack into and out of the Emerge refrigerator. See *Attachment 4: How to create a MTP Pack in Blood Track*	
3.0	**Place the 2 units in the prepared cooler and close cooler.** 3.1 The cooler is now ready to go to the ED Emerge. 3.2 Keep the cooler refrigerated in Blood Bank if unable to take to the ED immediately. See *Attachment 4: How to create a MTP Pack in Blood Track*	
4.0	**Take MTP pack to the adult ED Emerge.**	
5.0	**Scan pack into ED Emerge** 5.1 Scan badge at Kiosk 5.2 Enter password 5.3 Select **Putting In** 5.4 Select Transport Method: **Cooler** 5.5 Scan the MTP pack barcode as the unit# 5.6 Door will open 5.7 Place pack on designated shelf in fridge. **NOTE:** When adding or removing the pack the MTP Pack barcode is to be scanned, the individual units are not to be scanned at the Kiosk. Once the pack has been removed from the refrigerator it expires in 5 hours and must be returned directly to the Blood Bank before the 5 hours is up. See *Attachment 5: How to Scan a MTP Pack into Emerge Refrigerator*	

Procedure: Reconciliation of returned MTP Packs

Chemical Risk Assessment: None
Biological Risk Assessment: None
Protective Equipment: Gloves

Supplies: Cooler
Reagents: N/A
Equipment: Cooler Inserts and Panels
Specimen Requirements: N/A

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Examine the MTP pack cooler immediately upon its return.** 1.1 Match up the MTP pack with the print out from Blood Track that was printed when it was removed by the ED. 1.2 Check the time on the print out to see if the cooler has been returned within 5 hours of removal from ED fridge. a. If the cooler has been **returned within 5 hours**: i. Open cooler and remove any remaining units ii. Return any remaining units in Blood Track: Transactions > Return Stock iii. Return units to BB inventory, place in designated refrigerator. iv. Emergency Issue in SCC any units transfused to patient. 1. Use the copy of the unit placed in the clear sleeve on top of cooler. b. If the cooler has been **returned more than 5 hours** since removal: i. Open cooler and take the temperature of any units remaining in cooler. ii. If the temps are 1-6°C return units in Blood Track and to BB inventory (see previous steps in 1.2.a). iii. If the temps are *greater than* 6°C 1. Quarantine units in SCC and place on quarantine shelf. 2. Write a QA for management review, making sure to include the temps taken. iv. If there are no units left in cooler a QA does not need to be written. v. Emergency Issue in SCC any units transfused to patient.	

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
	1. Use the copy of the unit placed in the clear sleeve on top of cooler. See *Attachment 7: Reconciliation of used MTP Packs*	

Section IV- MaxQ coolers (not MTP packs) Protocols

1. There are 2 types of MaxQ coolers available in the Blood Bank:
    a. Small 2L blue MaxQ cooler
        i. These are to be used for routine blood transport within the hospital
        ii. They are for refrigerated products only (red cells, whole blood and plasma)
        iii. They are validated for use for 10 hours
    b. Large 4L red MaxQ cooler
        i. These can be used for routine blood transport within the hospital OR can be used for MTP packs for the ED refrigerator.
        ii. They are for refrigerated products only (red cells, whole blood and plasma)
        iii. For each of these uses, they are conditioned and packed differently
        iv. For routine blood transport, they are validated for use for 10 hours
        v. For MTP packs see section III- MTP Pack for Adult ED Emerge Refrigerator
2. The red and blue MaxQ coolers for routine blood transport use gel packs frozen for at least **24 hours** in the designated freezer at front desk.
3. *See Attachment 1- Cooler Descriptions and Intentions*

Procedure: Conditioning and packing of MaxQ coolers for Routine blood transport

Chemical Risk Assessment: None
Biological Risk Assessment: None
Protective Equipment: Gloves

Supplies: Cooler Prep Flag
Reagents: N/A
Equipment: Cooler Inserts and Panels
Specimen Requirements: N/A

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
1.0	**Fill out Cooler Prep flag for each brick set to be frozen.** 1.1 Document the brick set number on the cooler prep flag. *See attachment 2 area 2* 1.2 The unique ID number for the brick set can be found on the underside of each part of the container. 1.3 Make sure that all the bricks in a set have matching IDs. 1.4 If the numbers don't match setup off to the side to await the matching brick.	
2.0	**Store brick set in designated Freezer** 2.1 Document the Date and Time the bricks are being placed in the freezer to be frozen. *See attachment 2 area 3* 2.2 Bundle bricks into 1 set by wrapping a rubber band around them. a. Set of bricks #s: i. For small blue MaxQ a set is 2 white Koolit gel packs ii. For the large red MaxQ a set is 3 blue gel packs b. Place Cooler Prep Flag in between the rubber bank and the bricks. c. Place all items in designated freezer near Front Desk. d. Panels must be frozen for a minimum of **24 hours** before they can be removed from the freezer for conditioning and use.	
3.0	**Prepare cooler for use.** 3.1 MaxQ bricks do not need to be conditioned (thawed). 3.2 The bricks go straight from the freezer to the cooler. a. MTP Pack red coolers are the exception- they are to be conditioned	

STEPS	INSTRUCTIONS	CHANGE/ APPROVAL
	3.3 **Small blue MaxQ:** a. Place a frozen white Koolit gel pack on the right and left in the cooler, between the walls and insert for units.  3.4 **Large red MaxQ cooler:** a. Place a frozen blue gel pack on the right, front and left in the cooler, between the walls and insert for units.  	
4.0	**Document the cooler expiration (10 hours) on the outside of the cooler with a piece of colored tape.**	

Section V- SPOT Tracking System Protocol

1.0 The SPOT Tracking system is designed to track Blood Bank coolers once they are issued using radio frequency ID (RFID) tags secured to the outside of all Blood Bank coolers.

2.0 All validated coolers will be assigned an RFID tag and will be programmed to be followed by the SPOT system.

3.0 The SPOT system displays the location of all Blood Bank coolers throughout the hospital and tracks the amount of time the cooler has been out of the Blood Bank.

3.1 The cooler status is differentiated by a code and is displayed on a computer monitor at Front Desk.

3.2 The username and password for the SPOT login is "BBFront".

3.3 Each code indicates a specific cooler condition as stated below:

CODE INDICATOR	COOLER CONDITION
2. Home Base	Cooler is inside the Blood Bank and available for use or located at the designated "Home Base" on the floor. Blood Bank is considered the cooler "Home Base" for BB coolers.
3. Issued	Cooler has been issued and has been detected by the SPOT System as having left the Blood Bank. The location of the cooler will be displayed. This status indicates in use.

3.4 Blood bank technologists will monitor coolers return time via issue slips. Every effort should be made to notify locations to return the cooler before the cooler outdates.

4.0 Any problems with the SPOT system or the RFID tags must be brought to the attention of Blood Bank management and should be logged in the Golden Hour Maintenance Log located at Front Desk.

4.1 If a cooler is returned to the Blood Bank but remains "issued" according to the SPOT system, the cooler may be held up to one of the tracker antennae in the ceiling at front desk. Wait approximately 10 minutes for the tracking system to "see" the cooler. If exposure to the antenna does not rectify the issue, set the cooler aside and call SPOT or Help Desk to report the problem. Log the problem into the Cooler/Insert Maintenance Log located at Front Desk.

4.2 If coolers are missing and showing "red" on the SPOT display, call the location on the display and ask for the cooler to be returned. If the location fails to return the cooler, call the charge nurse/person of that location, report the problem and ask that the cooler be returned. If the cooler is not returned after these two phone calls then notify management.

4.3 Power surges and SPOT program updates may freeze the system. This will be evident when the recent activity of multiple coolers is not appearing on the SPOT screen. Call SPOT or Help Desk for resolution. Log the problem into the Cooler/Insert Maintenance Log located at Front Desk.

4.4 If a single cooler fails to register its activity on the SPOT screen, the battery in the RFID tag may be exhausted. Call SPOT (8am to 5pm) or email if after hours for resolution. Log the problem into the Cooler/Insert Maintenance Log located at Front Desk.

5.0 Coolers may be used for more than one issue episode providing:

5.1 The cooler is returned with time remaining on the insert used.

a. *Go to protocol: Blood Cooler Protocol* (BB.Protocol.1026)

5.2 The insert temperature is within the acceptable range upon return and at the time of desired reuse.

a. *Go to protocol: Blood Cooler protocol* (BB.Protocol.1026)

5.3 Tracking of coolers issued for subsequent use after return to the Blood Bank must be tracked carefully using the issue slip and SPOT.

a. *Go to procedure (FD): Blood Cooler Issue* (BB.FD.1024)

3. Review/Revised/implemented:

All procedures must be reviewed according to the Document Control Protocol.
All new procedures and procedures that have major revisions must be signed by the CLIA Director.
All reviewed procedures and procedures with minor revisions can be signed by the designated section medical director and/or designee.

4. Related Procedures:

QC: Cooler Validation, QC and Cleaning
FD: Blood Cooler Issue
FD: Blood and Blood Products: Storage, Transport, Return and Reissue Blood Cooler Issue
FD: SPOT Tracking System Log-in
P: Regulated Blood Coolers (Intranet)

5. References: N/A

6. Attachments:

Attachment 1- Cooler Descriptions and Intentions
Attachment 2- Cooler Prep flag
Attachment 3- Packing a MTP Pack cooler
Attachment 4- How to create a MTP Pack in Blood Track
Attachment 5- How to scan a MTP Pack onto Emerge Refrigerator

Attachment 6- Using MTP Pack from Emerge Refrigerator
Attachment 7- Reconciliation of used MTP Packs
Attachment 8- MTP Pack Training for Blood Bank Staff

7. Revised/Reviewed Dates and Signatures:

See Document Change Control

Attachment 1

Cooler Descriptions and Intentions

Cooler Type	Maximum Storage Hours	Validated Storage Temp	Cooler Description	Photo
Golden Hour® O.R Container (Golden Hours)	10 hours	1-6°C	An "operating room" container designed to safely and efficiently store blood. Maintains the FDA temperature so that unused blood may be returned to the supply. The container is iceless and includes a reusable insert that must be properly frozen and conditioned before use. **This cooler can hold up to 3 units of blood / thawed plasma**	
Crēdo Cube™ O.R. Container (Crēdos)	10 hours	1-6°C	An "operating room" container designed to safely and efficiently store blood. Maintains the FDA temperature so that unused blood may be returned to the supply. The container is iceless and includes reusable insert panels that must be properly frozen and conditioned before use. **This cooler can hold up to 12 units of blood / thawed plasma.**	
Crēdo Cube™ (Crēdo Cubes)	7 days	1-6°C	Designed for the storage of a large number of red blood cells units in the event of a hospital wide power outage or the storage of extra blood in the event of a major disaster (Code Triage). The container is iceless and includes reusable insert panels that must be properly frozen and conditioned before use. **This storage cooler is designed to hold up to 50 units of red blood cells.**	
Golden Hour® Series-4 EMT Canvas Bag Offsite Cooler	10 hours	1-6°C	A lightweight container designed for use by emergency medical technicians. (Volume: 2L). This container can maintain the FDA temperature so that unused blood may be returned to the supply. The container is iceless and includes a reusable insert that must be properly frozen and conditioned before use. **This cooler can hold up to 3 units of blood / thawed plasma.**	

Cooler Type	Maximum Storage Hours	Validated Storage Temp	Cooler Description	Photo
MAX Q Coolers 4 Liter (Large red)	10 hours	1-6°C	A lightweight card board container, designed for use by emergency medical technicians. This container is able to maintain the FDA temperature so that unused blood may be returned to the supply. The container is iceless and includes a reusable insert that must be properly frozen and conditioned before use. **This cooler can hold up to 8 units of blood / thawed plasma. (300ml per unit so may hold more if small units.)**	

Wake Forest Baptist Health
Winston-Salem, NC 27103
Blood Bank

Name:

MTP PACK TRAINING FOR BLOOD BANK STAFF

Review the following procedures and protocols with BB Staff.

PROCEDURE/PROTOCOL	Preceptor Initial/Date as completed
Creating a MTP pack in Blood Track 1. Activate out units 2. Build MTP pack 3. Scan MTP pack # label 4. What to do if MTP Pack# is not scanned	
Physically creating MTP Pack 1. Which units will go in pack- O Pos WB 2. Make sure unit is good for more than 7 days 3. Which cooler to use 4. How to pack coolers 5. How to label cooler	
Scanning MTP pack into Emerge at Kiosk	
Removing MTP pack from cooler for use	
Cooler to be stored up to 7 days in refrigerator	
Once cooler is removed from refrigerator, it is good for 5 hours	
Cooler must be returned to BB once it has been removed for use ➢ It cannot be placed back into refrigerator ➢ It must be returned within 5 hours of removal from fridge	
Reconciliation of used MTP pack 1. What to do if cooler is expired a. Check temps of units b. Write QA if >6C, quarantine units 2. What to do with units not used	

I certify that I am fully trained and competent to create and reconcile MTP packs and I understand MTP Pack protocols.

Signature of Trainee/Date: _____

Manager Review/Date: _____