**Purpose**

To provide instructions on the appropriate usage of the Credo Coolers. This includes preconditioning the coolers, packing the appropriate blood products, activating the temperature recorder, and cooler return processing.

**Policy**

The Credo coolers are used for storing blood products that require storage at 1oC to 6oC. They must be appropriately preconditioned before use and can hold a maximum of four red blood cell and/or liquid plasma units. When a cooler is packed, a temperature logger will also be placed in the cooler to record temperatures allowing assessment of blood product return to inventory or discard.

**Equipment**

* Credo Series 4 EMT Coolers
* Data Recorder and sealable, water tight plastic bag
* Credo Cooler Log

**Procedure**

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| **Step** | **Action** | **Related Documents** |
| **Credo Specifications** |
| 1 | **Credo Cooler System consists of 3 parts*** TIC System: internal base and lid which are “preconditioned” prior to blood storage and transport
* VIP System: **V**acuum **I**nsulation **P**anel base with hinged lid
* Outer bag with zipper closure lid

**Overview*** Light weight pack designed for use by emergency medical staff
* Holds blood and other chilled medical supplies for 24+ hours even in harsh ambient conditions.
* Reusable, iceless medical container has removable two liter TIC Insert that is preconditioned in a standard freezer.

**Ensuring Performance*** All components are clean and not damaged
* Avoid opening container unnecessarily
* Bag has not been torn or damaged during use
* Both TIC and VIP lids are secure before sealing for transport
* Avoid removing VIP base from the outer bag unless replacement or cleaning are required
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| **Conditioning the Credo Series 4 EMT Cooler** |
| **Step** | **Action** | **Related Documents** |
| 1 | **Prepare a Credo Cooler Log.*** Record cooler number
* Record Tech ID, date and time on the Cooler Log as indicated.
* Comments section available throughout process for documentation.
 | Credo Cooler Log |
| 2 | **Inspect Credo Cooler:*** Verify VIP is not expired
* Inspect for punctures, scratches, bends, tears and/or dents
* Ensure zipper is functioning and closes securely

**Condition the cooler:*** Remove the black, inner container from cooler (Box and Lid)
* Place it in a minimum -18°C freezer
* Place lid flat to ensure proper gel distribution
* Leave in freezer for at least 8 hours (no maximum time)
* Record Tech ID, Date/Time on Cooler Log under “Conditioned” for time placed in freezer.
* Clip cooler log to the door of the freezer.

**Prepare cooler for loading**:* Remove the black container from the freezer
* ***NOTE: Minimum 8 hours in freezer***
* Record Tech ID, Date/Time removed from freezer under “Prepared” on cooler log.
* Leave at room temperature for 25 minutes (surface frost has melted)
 | Credo Cooler Log |
| **Loading Credo Series 4 EMT Cooler**  |
| 1 | Select products per policy. All blood products must have different unit #s. Do not place products from same donor in one cooler.* Ensure products are at or below 4oC prior to loading.
* Transfer product to appropriate location in LIS.
* Prepare and attach UNXM sticker and Transfusion Record.
* Prepare and attach ALNW Unit Record
* Record unit number on the form using a sticker and/or written unit number and aliquot designation
* Check product type box: RBC or Plasma
	+ LTP: add Low Titer Plasma sticker
* Record tech number for preparer.
* Cooler log: Attach sticker or handwrite unit number and aliquot, if applicable
 | Changing Blood Product Location in SQStock Trauma Pack MaintenanceAirlift Northwest (ALNW)Using TAG for Emergency Release of Blood Products Credo Cooler Log |

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| 2 | **Red Blood Cells:*** Label glass 12x75 tube with RBC unit number including aliquot designation.
* Place one segment from RBC unit in the labeled tube.
* Store in the ALNW section of the RBC segment rack in TSL.
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| 3 | **Temperature data recorder:*** Prepare per SOP
* Record Data Recorder number on Cooler Log with Tech ID and Date/Time
 | Using the Marathon MicroDL Temperature Data Loggers |
| **Loading Credo Series 4 EMT Cooler (continued)** |
| **Step** | **Action** | **Related Documents** |
| 4 | **2nd tech reviews ALNW “pack”:*** Unit numbers match between face labels and Credo Cooler log.
* Verify LIS location transfer, Transfusion Record and unit record.
* Data Logger displays **REC**
* Cooler expiration is 7 days or 2 days prior to expiration of shortest date product.
* Record review on Credo Cooler Log and ALNW unit cards
 |  |
| 5 | Load Credo Cooler:* Units lay on a side with ports alternating pointing right and left.
* Do NOT lay units flat, stacking from the bottom
* Place data logger between middle units.
 | Using the Marathon MicroDL Temperature Data Loggers |
| 6 | Package cooler* Place the lid of the black, inner container back on
* Place the inner unit into the outer cooler.
* Close the white lid
* Secure it using the Velcro strap.
* Zip shut the cooler.
* Attach a tie strip to the zipper handles to secure the closure.
* Record ALNW destination on the top of the Credo Cooler Log
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| 7 | Record issue/release information on the Cooler Log.* Post Cooler Log in TSL.
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| **Monitoring Issued/Released Coolers** |
| 1 | Credo Coolers will return to TSL:* + If cooler has remained refrigerated
		- Every 7 days **OR**
		- With 2 days remaining on products whichever is shortest.
	+ As soon as possible after removal from refrigerator. *Note: Cooler can be out of refrigeration for 24 hours and maintain acceptable temperatures if the unit is not opened repeatedly.*
	+ If refrigeration is unavailable at ALNW
 |  |
| 2 | Daily:* + TSL staff will examine Credo Cooler Log(s) for expiration date
	+ Weekly routine exchange by ALNW courier is scheduled.
	+ Outside weekly scheduled exchange:
		- Contact facility to schedule return and replacement prior to expiration.
		- Record on cooler log.
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| **Step** | **Action** | **Related Documents** |
| **Returned Coolers** |
| 1 | When the cooler is returned: * Record the time and date of return and determine if the cooler has been opened by examining the tie strip.
* Note OPENED or NOT OPENED on the Cooler Log.
* Remove tie strip, if present, and unpack the cooler
* Note Recorder status as Alarm or No Alarm
* Notify Lead or MLS2 when data logger ready for download
 | Credo Cooler Log |
| 2 | Reconcile cooler inventory:* Compare product to Credo Cooler Log.
* Record “In Cooler?” Yes (Y) or No (N)
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| **Returned Blood Products** |
| 3 | Using Blood Status Update:* Quarantine all units pending Lead review using appropriate return code
* Transfer location to “H” in Sunquest
* Place data recorder in Quarantine with product.
* Discard Transfusion Records and **blank** Unit Cards
* Record “Quarantine” Yes, Tech ID and date on the cooler log.
 | Changing Blood Product Location in SQQuarantine of Blood Products |
| 4 | Lead or MLS2 Review of data recorder and Credo Cooler Log:* Review data
* Record findings and final disposition on Credo Cooler Log
	+ Data Downloaded and Reviewed: Tech ID/Date/Time
* Approve the release of acceptable products from Quarantine and store in stock inventory
* Investigate any paperwork discrepancies
	+ *Example: Unit card completed but unit in cooler*
* Complete QIM for units found to be unacceptable.
* Discard units after consultation with TS Manager and/or Medical Director
 | Blood Product Storage Policy Using the Marathon MicroDL temperature data loggersQP: Management of Nonconforming Events |
| **Transfused Blood Products** |
| 5 | Process transfused blood products from unit cards, Transfusion Records and Credo Cooler Log:* Cooler Log: Answer “Transfused at another facility” question
* Apply ORCA/EPIC or hand write patient information in bottom right hand corner of cooler log
* Perform allocation and appropriate testing.
* HMC Patients: Send post Transfusion Records to HIM
* Non-HMC Patients: Staple post Transfusion Records to Unit Cards
* Document flight # on cooler log
* Staple Unit Cards and original Transfusion Records to the Credo Cooler Log and/or Trauma paperwork.

*Note: Transfusion Records for transfused products will be returned to TSL for storage with the unit cards. ALNW has a separate record of transfusion.* | Compatibility Process |
| 6 | Obtain 2nd tech review. | SQ Blood Order Processing |
| 7 | File paperwork in the Trauma Log Notebook. |  |

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| **Step** | **Action** | **Related Documents** |
| **Storage and Cleaning Credo Components** |
| 1 | Upon return: Inspect and clean Credo Cooler |  |
| 2 | **Inspection:**Examine all components of the Credo Cooler to insure integrity:* Tears
* Crush damage
* Zipper not functioning
* Loose or broken straps
* Lids fit securely
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| 3 | **Cleaning:**Lid and Base:* Clean using warm water and soap or alcohol. Disinfect with gray wipes
* Do NOT use abrasive cleaners, acetone, or extreme heat

Outer bag and liner:* Damp rag with soap or alcohol
 |  |
| 4 | **Storage and Rotation:**Lid and Base: * + As needed to meet needs: Store in a -30 or colder freezer
	+ Adequate number in freezer: Store at Room Temperature
	+ Remove an inner container; place a RT container in the freezer

Outer Bag and Liner: Store at Room Temperature |  |

**References**

Credo Cooler Reference Manual

Standards for Blood Banks and Transfusion Services, Current Edition, American Association of Blood Banks, Bethesda, MD