**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 |  |
| **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 SQ  Stock Trauma Pack Maintenance  Airlift 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 |  |
| 7 | Record issue/release information on the Cooler Log.   * Post Cooler Log in TSL. |  |
| **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) |  |
| **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 SQ  Quarantine 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 loggers  QP: 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 |  |
| 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