

## BLOOD BANK FUNCTION & MAINTENANCE CHECKS

### I. PRINCIPLE

The Blood Bank quality control program is set up to ensure that reagents, equipment and methods employed will function as expected according to and compliant with the AABB standards.

### II. CLINICAL SIGNIFICANCE

UnityPoint Health-Pekin Laboratory personnel will follow this procedure when performing maintenance checks on Blood Bank equipment.

### III. SUPPLIES /EQUIPMENT

- A. Helmer® Refrigerator
- B. Helmer QuickThaw™ Plasma Thawer**
- C. Helmer® Freezer
- D. Helmer UltraCW II Cell washer
- E. Heat blocks
- F. Helmer® Platelet Incubator and Agitator

### IV. PROCEDURE

#### A. DAILY:

1. Record temperatures and checks on the Instrument Temperature Record Form (UPPK BB-0529.01) and the Weekly/Daily Maintenance Duties log sheet (UPPK BB 0529.02)
  - a. FISHER 37° C heat block. Check fluid level in tube. Add saline if needed. Move saline tube with thermometer to the next position daily.
  - b. Equatherm 37°C heat block (back up one on the back counter)
  - c. Helmer QuickThaw™ Plasma Thawer - (Digital Display)**
  - d. Blood Bank Refrigerator – On the Home Screen:
    - 1) Upper temperature (Large temperature in the middle of the screen)
    - 2) Lower temperature (Secondary temperature in the lower right hand corner of screen)
    - 3) Thermometer in “Sample Blood Bag”. (2<sup>nd</sup> shelf from the top)
    - 4) Chart temperature.
    - 5) Compare chart reading to liquid reading.
    - 6) Check chart tracing for any abnormality. If there is an abnormal reading give a brief description of the issue along

with your initials and date on the chart.

- 7) If for any reason, blood has to be moved from the main refrigerator to our Back-up refrigerator, the top and bottom temperatures must be checked and recorded on the Back-up refrigerator daily, along with the chart. The simulated blood bag of H<sub>2</sub>O and Glycerin must be moved and stored with the blood products and the temperature checked and recorded daily as well.
  - e. Room temperature
2. Visual Inspection of Units-
  - a. Daily - Units are inspected for clots, hemolysis, bacterial contamination, unusual colors, and gases.
  - b. Upon Release: Visual Inspection of each unit is required prior to release for transfusion. This is done by clicking pass for the visual inspection in Sun Quest-Blood Product Issue.
3. Helmer® Freezer
  - a. Internal temperature is recorded daily by second shift tech.
  - b. Check chart tracing for any abnormality. If there is an abnormal reading give a brief description of the issue along with your initials and date on the chart.
  - c. Check tube of frozen liquid in freezer for evidence of thawing. Record this check on the recording chart when it is changed on Monday.
4. Helmer® Platelet Incubator and Agitator
  - a. Internal temperature is recorded daily by checking the thermometer inside the unit by a second shift tech.
  - b. Check chart tracing for any abnormality. If there is an abnormal reading, give a brief description of the issue along with your initials and date on the chart.
5. Helmer UltraCWII Cell Washer
  - a. Inspect tubing and drain and clear obstructions if necessary.
  - b. Inspect tubing connections and secure if necessary.
  - c. Clean and dry interior after normal usage to prevent corrosion and contamination.
  - d. Flush system with DI or distilled water by loading the rotor with tubes, leaving every other position on the rotor empty. Install the rotor and close the lid. Prepare a container of deionized or distilled water (approximately 1L). Close the saline valve and disconnect the saline tube from the saline solution container and place it into the container of DI or distilled water. Select and run the "flush 1" program. Remove the Saline tube from the DI or distilled water container and place it back in the saline container. Turn the saline



valve back on and select and run the "flush 1" program again.

- e. After flushing the system with DI or distilled water, calibrate the saline volume to 36ml target volume (for the daily calibration). From the start screen touch the Login button. Enter a Service user password and select the green checkmark to confirm. Select the settings button. Select the Tools button to open the Service Menu. Select the Ruler icon to open the calibration screen. Touch the target calibration volume of 36ml. Hold a clean, dry graduated cylinder below the spout on the lid and press the start button. Wait until liquid has stopped flowing from spout. Measure the liquid collected. Use the "+", "++", "-", and "--" on the left of the screen to adjust the number as needed to match what you measured in the cylinder. Select the green checkmark to finish. Use the red arrow to return to the Home screen.

6. Helmer QuickThaw Plasma Thawer

- a. Check plasma thawer distilled water level and add distilled water if necessary. Water level should be between the two fill lines marked on the rear of the chamber.
- b. Wipe down the exterior if needed.

B. WEEKLY:

1. MONDAY: Change chart paper on the Helmer Blood Refrigerator, Freezer, and Platelet Incubator and Agitator. Record your initials and the date on the back of the chart. This shows when the chart paper was placed on the chart. The hospital name should be on the chart.
2. FRIDAY: Clean fill ports on the rotor of the cell washer.
3. FRIDAY: Flush cell washer system with a 0.5% bleach cleaning solution (1:9 ratio of bleach to water). Prepare a container with approximately 400 ml of the bleach cleaning solution and perform flush just like the DI water flush procedure except using the cleaning solution first (select and run the "flush 1" program, *and wait 5 minutes*) then the DI water flush and the flush with saline.
4. FRIDAY: Calibrate the saline volume like above except using the 72ml target volume.
5. Record all weekly maintenance on Weekly/Daily Maintenance Duties log sheet. (UPPK BB 0529.02)

C. QUARTERLY:

1. Empty and clean the chamber and baskets of the plasma thawer. Refill with fresh distilled water and add appropriate amount of the Bacteriostatic & Water Treatment Combination Solution to the fresh water. Clean the fan. Lubricate moving parts. Check temperature

calibration for the temperature controller readout. Recalibrate if necessary.

2. Test the low and high temperature alarm and the door alarm of the refrigerator (the main and backup).
3. Test the high temperature alarm and the door alarm of the freezer.
4. Test the high and low temperature alarm of the platelet incubator and agitator.
5. Test the high and low temperature alarm of the plasma thawer.
6. Refer to Blood Bank Procedure for Refrigerator and Freezer (UPPK BB 0462), and for Platelet Incubator and Agitator (UPPK BB 0591). Refer to the Helmer QuickThaw™ Service Manual and Operation Manual for Plasma Thawer.
7. Record all quarterly alarm checks on the Instrument Temperature Record log sheet. (UPPK BB 0529.01) Highlight the quarterly alarm checks in yellow.
8. Bleach Saline Bottles.

D. ANNUALLY:

1. Check the bearings on the baskets in the Plasma Thawer for wear. Replace if necessary.

V. REFERENCES

- A. Technical Manual of the American Association of Blood Banks, 19th Edition, 2017.
- B. Helmer Scientific, Automatic Cell Washing System Service Manual, UltraCWII, 360387/A.
- C. Helmer Scientific, QuickThaw™ Plasma Thawing System Operation Manual, 14400 Bergen Boulevard, Noblesville, IN 46060, 360094-1/M.
- D. Helmer Scientific, QuickThaw™ Plasma Thawing System Service Manual, 14400 Bergen Boulevard, Noblesville, IN 46060, 360097-1/J.
- E. Helmer Refrigerator Service Manual, i.Series™ and Horizon Series™, Helmer, Inc., Noblesville, IN 46060, 360077-1/L, 360078-1/K, 360371/A, 360076-1/J.
- F. Helmer Freezer Service Manual, i.Series™ and Horizon Series™, Helmer, Inc., Noblesville, IN 46060, 360119-1B, 360076-1J.

<b>POLICY CREATION :</b>	<b>Date</b>
<b>Author:</b> Sharrol Brisbin, MT (ASCP)	02/01/2003
<b>Medical Director:</b> Kathryn Kramer, MD	02/01/2003



<b>MEDICAL DIRECTOR</b>		
DATE	NAME	SIGNATURE
6/04/19	Lori Pacsa	[Signature]
<b>SECTION MEDICAL DIRECTOR</b>		

<b>REVISION HISTORY (began tracking 2011)</b>			
Rev	Description of Change	Author	Effective Date
11/29/18	Add heat block info and visual inspection of units in Sunquest	Jenny Turner	11/29/18
12/09/18	Moving products to the backup refrigerator.	Jenny Turner	12/09/18
5/14/19	Deleted Thermogenesis Plasma Thawer. Added Helmer QuickThaw Plasma Thawer.	Jenny Turner	5/14/19

Reviewed by:

Lead	Date	Coordinator/ Manager	Date	Medical Director	Date
[Signature]	5-23-19				