BBSE 1.0-Temperature Monitoring of Blood Bank Equipment

1. Principle

Proper storage requirement for blood, blood components and blood banking reagents must be followed to ensure the best quality product for transfusion. Testing methods must be performed according to the temperatures indicated by the manufacturer and Standard Operating Procedures. All blood bank equipment must have the temperature monitored continuously and recorded daily to ensure compliance with these regulations.

# General Policies

* 1. Temperatures of blood bank equipment must be recorded daily.
  2. Temperature charts will be maintained on each piece of storage equipment and changed a minimum of weekly.
  3. Temperature charts may need to be changed more frequently as a result of equipment failure and/or repair.
  4. First shift technologists are responsible for changing the temperature charts on the storage equipment.
  5. Third shift is responsible for documenting all blood bank equipment temperatures on the appropriate form.

# Specimen Collection and Preparation

N/A

# Equipment

* 1. Monitored Blood Bank refrigerators
  2. Monitored Blood Bank freezers
  3. Helmer platelet incubator
  4. Dry heat blocks
  5. Precision water bath
  6. HemoTemp Activation Block

# Supplies

* 1. Designated temperature charts

# Reagents

N/A

## Quality Control

N/A

## Safety

Refer to Chemical Hygiene and Blood Borne Pathogen Plan for Memorial Hospital Laboratory.

## Procedure

* 1. **Refrigerator/Freezer Temperature**
     1. Document readings on form Quality Control of Refrigerator/Freezer Temperatures.
        1. Top thermometer reading
        2. Bottom thermometer reading, if applicable
        3. Chart recorder reading
     2. Ensure that chart recorder is tracing on the correct day and time.
     3. All temperature readings must agree within + 2C.
  2. **Dry heat block/Waterbath Temperature**
     1. Document reading on form Quality Control of Incubators and Waterbaths.
     2. Rotate the probe in the dry heat block after each daily reading. Document rotation check on form Quality Control of Incubators and Waterbaths.
  3. **Helmer Platelet Incubator**
     1. Document readings on form Quality Control of Refrigerator/Freezer Temperatures.
     2. Ensure that chart recorder is tracing on the correct day and time.
     3. All temperature readings must agree within + 2C.
  4. **Hemotemp Activator block**
     1. Document reading on form Quality Control of Incubators and Waterbaths.
     2. Ensure there is a minimum of 6 indicators in the activator block, restocking as necessary.
     3. Indicators should remain in the activator for no longer than 4 weeks.
  5. **Temperature Recording Charts**
     1. Obtain the appropriate temperature chart.
     2. Document on the back of the chart:
        1. Equipment ID
        2. Start date, time and initials of tech replacing chart
     3. Document on the front of the chart:
        1. Equipment ID
        2. Location where tracing begins
     4. Press the appropriate button to activate the movement of the recording pen.
     5. Unscrew chart holder and remove chart.
     6. Document:
        1. Stop time, date and initials of tech on the back of the chart
        2. Location where tracing stops on front of chart
     7. Place new chart over the center pin, ensuring that correct day and time are in line with recording pen.
     8. Screw down the chart holder.
     9. Press the appropriate button the activate movement of the recording pen.

## Reporting Results

a. Acceptable results are as follows:

* + 1. Refrigerators: 1-6C
    2. Plasma freezer: -18C or below
    3. Ultra-Cold freezer: -40C or below
    4. Platelet incubator: 20-24C
    5. Dry-heat block and waterbaths
       1. Dry-heat blocks: 36-38C
       2. Waterbaths: 36-38C
       3. Hemotemp Activator block: 38-42C
  1. Document any explainable deviation in temperature (i.e. cleaning, loading, etc.) on the temperature chart or quality control form to include:
     1. Reason
     2. Date/time
     3. Technologist initials
  2. If temperatures of storage equipment are not within acceptable range:
     1. Ensure that the doors of the equipment are securely closed.
     2. Observe if temperature is returning to acceptable range.
     3. If no indication of returning to acceptable range within 5-10 minutes:
        1. **Product must be removed from equipment.** Refer to SOP Responding to Alarm Activation of Blood Bank Storage Equipment.
        2. **Notify supervisor.**
  3. If temperatures of testing equipment are not within acceptable range:
     1. Remove equipment from use until problem is investigated and/or corrected.

## References

* 1. Standards for Blood Banks and Transfusion Services, AABB, 26th Edition, 2009, Std. 3.6, 5.1.8, 5.1.8A, Bethesda, MD.
  2. Technical Manual, AABB, 16th Edition, 2008, pp. 284-288, Bethesda, MD.
  3. Blood Bank Refrigerator Operation Manual, 2003, Jewett, Asheville, NC.
  4. Blood Bank Freezer Operation Manual
  5. Platelet Incubator Operation Manual
  6. Forma Freezer Operation Manual

**PROCEDURE AND FORM CHANGE CONTROL**

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| Title: Temperature Monitoring of Blood Bank Equipment | | | | | | | | | | |
| Written | | **Validated** | | **Path Review** | | **Review** | | **Effective** | | **Reason for Revision** |
| Date | **By** | **Date** | **By** | **Date** | **By** | **Date** | **By** | **Date** | **By** |
| **12/1/09** | **PAB** | **12/12/09** | **GJM** | **12/16/09** | **ESB** |  |  | **1/4/10** | **PAB** |  |
| **Revised** |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | **12/14/11** | **PAB** |  |  |  |
| **2/14/12** | **PAB** | **2/16/12** | **BSG** | **2/28/12** | **ESB** |  |  | **2/29/12** | **PAB** | **Included changing of temperature charts** |
| **9/12/12** | **PAB** |  |  | **9/12/12** | **ESB** |  |  | **9/13/12** | **PAB** | **Changed ultra low limits** |
| **9/5/13** | **PAB** |  |  |  |  |  |  |  |  | **Removed Thermogenesis** |
| **10/27/14** | **JLH** |  |  |  |  |  |  |  |  | **Removed BBR3 from all documentation and forms. Assigned SOP number and version.** |
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Location of any copy(s) of the procedure:

**Out of use:**

**Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Reason:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**