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Blood Bank Temperature Monitoring - Troy

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This document provides policies and instructions relating to the daily, weekly and monthly temperature checks that are documented in the Blood Bank.

II. DEFINITIONS/ACRONYMS:

A. Quality Control (QC): QC aims to identify and correct defects in the finished product. Quality control, therefore, is a reactive process. The goal of QC is to identify defects after a product is developed and before it's released.

B. Quality Assurance (QA): Set of activities aimed at preventing defects with a focus on the process used to make the product. It is a proactive quality process. The goal of QA is to improve development and test processes so that defects do not arise when the product is being developed.

C. Designee: Any Blood Bank technical director, or transfusion medicine fellow.

D. NIST: National Institute of Standards and Technology

III. SCOPE:

A. All temperature-dependent equipment (e.g. Refrigerators, freezers, incubators) containing reagents and/or patient/client specimens along with all blood/components and environments must be monitored each day of use using a calibrated thermometer.

B. An appropriate thermometric standard device of known accuracy (certified to meet NIST standards or traceable to NIST Standards) must be available. If a non-certified thermometer is in use then it must be checked against an appropriate thermometric standard device before initial use.

C. Appropriate action must be taken should the temperature in the storage device reach a temperature that might result in harm to the blood and components, reagents and/or patient/client specimens.

IV. POLICIES:

A. Failing Quality Control (QC)

1. The expected results for each temperature is defined and listed at the bottom of the Transfusion Medicine

form, *Temperature QC Log.*

a. The temperature passes if the observed results are within the expected results range, and the temperature fails if the observed results are not within the expected results range.

b. If the QC fails, repeat the QC testing (if applicable); QC passes if the repeat is in the acceptable range.

c. If the QC fails after the repeat then do not use the item (equipment, reagent, instrument, etc.) on which the QC failed.

d. Tag equipment with Transfusion Medicine form, *Out of Order/Service Called,* and place reagents in quarantine.

e. Make a notation of the QC failure on Transfusion Medicine form, *Blood Bank Reagent or Equipment Problems Log*.

f. The supervisor or designee will submit a variance report for each equipment or reagent problem, will document the follow up on the variance report, and will determine whether it is acceptable to place the equipment or reagent back into use.

g. If applicable, arrange for repair from facilities management or the applicable manufacturer.

B. Blood Bank Equipment List

1. The Transfusion Medicine form, *Troy Blood Bank Equipment List,* is used to keep track of the Corewell Health property numbers for Troy Blood Bank Equipment.
2. If any of these pieces of equipment are moved or replaced the form should be updated accordingly.
3. A current copy of this form is maintained in the Supervisor's or Lead Medical Technologist's office.

V. PROCEDURE:

A. Temp Trak® Temperature Monitoring

1. The Cooper-Atkins Temp Trak system (TempTrak) is used by the Troy Laboratory to continuously monitor and record the temperatures of refrigerators, freezers, and the incubators, etc. Refer to Transfusion Medicine policy, Laboratory Temperature Monitoring System - Troy.
2. The temperatures are continuously recorded by each probe and sent to the Temp Trak server approximately every 15 minutes to several hours depending on the appropriateness of the monitor. Lab staff have ongoing immediate access to the data via the Temp Trak website.
3. Document the Temp Trak® section of the Transfusion Medicine form, *Temperature QC Log*, as “S” (satisfactory) or “U” (unsatisfactory).
4. If the Temp Trak review is unacceptable, proceed as described in Transfusion Medicine policy, S*torage Equipment Alarms and Temperature Deviations.*

B. Temperature of Refrigerators, Freezers, Platelet Incubator

1. Equipment temperatures are taken from the following sources:
   a. Calibrated thermometer that is stored on the bottom shelf inside the equipment.

b. Temperature graph.

2. The thermometers are stored on the bottom shelves, so that they are measuring the temperature in a different area of the unit distant from the Temp Trak® sensors.
3. The temperature graphs are located on the front of each unit.
4. The temperature graphs shall be changed weekly and dated with start and stop date along with the initials of the person changing the graph.
5. The tissue chest freezer does not have a graph, record the digital readout temperature.

C. Temperature of Bone/Tissue Storage Unit

1. The storage unit does not have a graph or digital readout for temperature.
2. The thermometer is stored on the lower right shelf, so that it is measuring the temperature in a different area of the unit distant from the Temp Trak® sensor.

D. Temperature of Plasma Bath

1. Plasma Thawing Bath is equipment designed for rapid and uniform thawing of fresh frozen plasma (FFP) and Cryoprecipitate (CRYO) at 37°C.
2. Document the temperatures from the display of each plasma bath.
3. Refer to Transfusion Medicine policy, *Helmer® DH8 Plasma Thawing System QC and Maintenance.*

E. Room Temperature

1. Room or ambient temperature is the common term to denote a specified temperature within an enclosed space, such as a room or even an entire building.
2. Room temperature is between 18º to 25º C (64º to 77º F).
3. The room temperature thermometer is located near the room temperature reagent stock.
4. If the room temperature in the Blood Bank is not within acceptable limits, call Facilities Management immediately and ask to have the temperature of the Blood Bank adjusted.
5. Document the incident in an internal variance and email the supervisor or lead medical technologist so they can follow up.

F. Temperature of Dry Heat Blocks

1. Document the temperature of the numbered dry heat blocks, as displayed on each thermometer.
2. The thermometers are placed in test tubes that are filled with saline or water to the level of the incubator block top surface.
3. The thermometer will be rotated sequentially each day after the temperature is read.

G. Failures / Adjustments / Additional Actions

1. Record any notes, adjustments, or additional actions on the back page of Transfusion Medicine policy, *Temperature QC Log,* in the *Corrective Action* Section.
2. Evidence of corrective action must be recorded if acceptable temperature ranges are not maintained.

VI. EQUIPMENT CALIBRATION AND MAINTENANCE:

A. TempTrak equipment is maintained by Facilities Management.

B. Each temperature probe is NIST certified upon installment and then calibrated against a NIST certified thermometer on a yearly basis by lab staff.

VII. REFERENCES:

1. Temp Trak System Policy, Facilities Management, Troy Specific
2. AABB, *Technical Manual,* Current edition.
3. AABB, *Standards for Blood Banks and Transfusion Services*, current edition.

Attachments

Manual Temperature Monitor-CHE.pdf
Out of Service
Reagent Equipment Problems Log-CHE.pdf
Storage Equipment Alarms and Temperature Deviations -CHE.pdf
Temp QC Log 5-CHE.pdf
Temp QC Log pages for Refrigerators Freezers 3 - CHE.pdf
Temperature QC Log 1 - CHE.pdf

Approval Signatures

Step Description	Approver	Date
	Masood Siddiqui: Staff Pathologist	7/15/2024
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Policy and Forms Steering Committe (if needed)	Teresa Lovins: Supv, Laboratory	7/2/2024
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Applicability

Troy