Sutter Health
Sutter Roseville Medical Center

Origination:	*6/30/2021*
Effective:	*N/A*
Final Approved:	*N/A*
Last Revised:	*N/A*
Next Review:	*N/A*
Owner:	*Nadera Dashty: Supervisor, Laboratory Analytic*
Policy Area:	*Lab - Transfusion Service*
References:	
Applicability:	*Sutter Roseville Medical Center*

Monitoring Temperatures in Transfusion Services

PURPOSE

To provide instructions on how temperatures of storage devices and equipment are monitored to ensure that optimum temperatures for accuracy of results, safe storage of blood products, and reagents are maintained.

POLICY

- A SLA or CLS will perform temperature monitoring as described in this procedure.
- Thermometers will be placed into containers that provide a response time similar to the liquids of the products stored in the device.
- Temperatures of the refrigerators, freezers, platelet incubator, and water baths are taken and documented on the *Transfusion Services Daily Temperature Log* twice a day. These temperatures will be taken once on the day shift and a second time on the evening shift.
- Temperatures of the heat blocks and room temperature reagent storage area are taken and documented on the *Transfusion Services Daily Temperature Log* once a day by the day shift.
- The temperature charts for the storage devices are changed each Monday on day shift.
- If temperature falls below 2°C in a device being used for reagent storage, all BioRad and ORTHO reagents must be moved to a storage device that will maintain temperature range of 2-6°C until original storage device returns to ≥ 2°C.
- The CLS is responsible for taking prompt corrective action to rectify the situation or remove the device from service. Corrective action is documented in the *Comments* section of the log.
- A CLS will review the log following completion of documentation for their shift's temperatures. If a CLS performs the temperature monitoring, a different CLS must perform the documentation review.
- Service requests for the refrigerators and freezers will be submitted to Facilities (Plant Ops). All other service requests will be submitted to eQuip.

See table below for replacing fluid for probes in refrigerators and freezers:

	Refrigerator (10:1)	Freezer (1:1)
Water	108mL	60mL
Gycerin	12mL	60mL

See table below for expected/required temperature ranges:

Storage Device/Equipment:	Acceptable Range:
Refrigerators	1-6°C
Freezers	≤ -18°C
Platelet Incubator	20-24°C
Water Baths	35-37.5°C
Heat Blocks	36-38°C
RT Reagent Storage	20-24ºC

PROCEDURE

Refrigerators, Freezers, and Platelet Incubator

Step	Action
1.	On the log, document the *Date* and *Time*.
2.	Check the alignment of the chart to see if the correct day and approximate time is reflected. If view is obstructed, open the chart cover to determine if alignment with day and approximate time is correct. • If the chart is not correctly aligned: ◦ Loosen the chart lock nut and realign to correct day and time. ◦ Re-tighten the chart lock nut. ◦ Document corrective action on the log under *Comments.*
3.	Estimate the chart temperature to the nearest 0.5°C and document on the appropriate space on the log.
4.	Locate the internal thermometer in the appropriate device. Note: The refrigerators will have two internal thermometers, one at the top and one at the bottom of the device.
5.	Estimate the internal temperature to the nearest 0.5°C and document on the appropriate space on the log. Return the thermometer to the magnet that is located in the device to hold the thermometer in place.
6.	Compare the documented values for the device to the acceptable range stated on the log. If they are not within range, report problem to the CLS for corrective action. Document notification in the *Comments* section of the log.
7.	Compare the documented values for the chart temperature and the internal thermometers. Chart temperature and internal temperature must agree within 2°C. If they are not within range, report problem to the CLS for corrective action. Document notification in the *Comments* section of the log.

Changing Temperature Charts

Step	Action
1.	Locate blank charts and equipment chart stamp in the chart supply drawer.
2.	Select the appropriate chart from the list below for each device: Helmer Refrigerators — Helmer 220366 (range -5°C to 20°C) Helmer Freezers — Helmer 220419 (range -50°C to 0°C) Platelet Incubator — Helmer 220273 (range 0°C to 35° C)
3.	Stamp the back side of chart with the equipment chart stamp. Use the list below to complete the *EQUIP* line. If: / Then: RBC stock refrigerator — Helmer Double Door Autologous, specimen storage refrigerator — Helmer Single Door #1 Reagent refrigerator — Helmer Single Door #2 Helmer freezer #1 — Helmer Freezer #1 Helmer freezer #2 — Helmer Freezer #2 Platelet incubator — Platelet Incubator
4.	Complete the *ON BY (*with your initials), the *DATE,* and *TIME* on the new chart.
5.	Disengage the chart pen by pressing either the *C* or *CHANGE CHART 3* button on the device. Loosen the chart lock nut and remove the old chart.
6.	Put the new chart on the device, lining up the day and approximate time. Re-tighten the chart lock nut and reactivate the chart pen by pressing either the *C* or *CHANGE CHART 3* button on the device.
7.	Reset device chart alarm, if applicable. • Select *PAPER* and then *PAPER-CHANGED* to reset chart alarm.
8.	Complete the *OFF BY* (with your initials), the *DATE*, and *TIME* on the old chart.
9.	File the completed charts in the chart supply drawer.

Water Baths

Step	Action
1.	On the log, document the *Date* and *Time*.
2.	Locate the internal digital thermometer at the back of the water bath. Document the digital temperature on the log under *Internal.*
3.	Locate the digital temperature on the *Temperature Controller* on the front of the water bath. Document the digital temperature on the log under *Digital*.
4.	Compare the documented values for the water baths to the acceptable range stated on the log. If they are not within range, report problem to the CLS for corrective action. Document notification in the *Comments* section of the log.

5.	Refer to the fill lines inside the *Chamber* and confirm that the water level falls within the two lines. Refill with tap water as needed. Once complete, document *OK* on the log under *H2O OK?*.
6.	<table><tr><th>If:</th><th>Then:</th></tr><tr><td>Day shift</td><td>Proceed to next section.</td></tr><tr><td>Evening shift</td><td>Document tech code on the log under *Performed by*. Deliver completed log to the CLS for review.</td></tr></table>

Heat Blocks

Step	Action
1.	Confirm that the saline in the test tube with the thermometer is level with the top of the heat block prior to taking the temperature. Once complete, document OK on the log under *Saline OK?*. Note: If saline is added to the test tube with the thermometer, wait 15 minutes before documenting the temperature.
2.	Document the position number that the thermometer is in on the log under *Position #*.
3.	Using the thermometer, estimate the temperature to the nearest 0.5°C and document on the appropriate space on the log. Compare the documented value for the heat block to the acceptable range stated on the log. If it is not within range, report problem to the CLS for corrective action. Document notification in the *Comments* section of the log.
4.	Move the thermometer to the next position in the heat block.

Room Temperature Reagent Storage Area

Step	Action
1.	Esitmate the temperature to the nearest 0.5ºC and document on the appropriate space on the log. Compare the documented value for the room temperature reagent storage area to the acceptable range stated on the log. If it is not within range, report problem to the CLS for corrective action. Document notification in the *Comments* section of the log.
2.	Document tech code on the log under *Performed by*. Deliver completed log to the CLS for review.

CLS Review of Transfusion Services Daily Temperature Log

Step	Action
1.	Review log for accuracy and completeness. If: / Then: All temperatures are recorded and within specified limits → Document tech code on the log under *Reviewed by*. Some temperatures are missing or improper documentation of write-overs → Notify SLA or CLS of need to complete task. Repeat review upon completion and document tech code on the log under *Reviewed by*. All temperatures are recorded but corrective action is needed → See section *Corrective Action*. Document tech code on the log under *Reviewed by*.

Corrective Action

Document all corrective action in the *Comments* section of the log.

Refrigerator, Freezer, and Platelet Incubator Corrective Action

Refer to SOP, *Managing Blood Product Storage Unit Failure or Alarm*, as needed.

If:	Then:
All readings are within device range but temperature readings are not within 2°C	• If temperature is changing, make notation of discrepancy and recheck in 1-2 hours. • If readings are within device range but temperature readings are not within 2°C initiate a service request.
If the internal thermometers are within range but the chart or digital temperature is out of specified range	• Make sure that the temperature probe is immersed in the fluid and that there is sufficient fluid in the vial. Adjust as needed. • Retake temperature in 1-2 hours. • Move products into alternative storage if unable to correct. • Remove device from use and initiate a service request.

If any internal thermometer is outside of specified range	• Quarantine blood products or reagents contained in device. • Products cannot be issued for patient use without authorization by the Pathologist. • Reagents, calibrators, or QC contained in device must be checked to confirm accuracy or quality of material by performing appropriate QC prior to use. • Remove device from use and initiate a service request.

Water Bath Corrective Action

If:	Then:
Temperature is less than 35°C	Do not use to thaw products. Retake the temperature in 2-4 hours. If problem persists, remove device from use and initiate a service request. Use alternate equipment as available.
Temperature is greater than 37.5°C	Do not use to thaw products. Remove device from use and initiate a service request. Use alternate equipment as available.

Heat Block Corrective Action

If:	Then:
Temperature is out of range	Move thermometer to another well to determine if the problem is with the individual well or the whole heat block.
Problem is only with one well	Do not use that well. Block off with tape, remove device from use and initiate a service request. Use alternate equipment as available.
Problem is with entire device	Do not use heat block. Remove device from use and initiate a service request. Use alternate equipment as available.

Room Temperature Storage Area Corrective Action

If:	Then:
Temperature is out of range	Use another thermometer and recheck temperature after 15 minutes.
Still out of range	Turn off under-counter light and/or adjust thermostat. Recheck thermometer after 15 minutes. Note: Thermostat adjustment is to be performed by Transfusion Services Supervisor, Technical Specialist, or Facilities.
Unable to correct problem	Move room temperature reagents to location in the Laboratory that is in acceptable range and initiate a service request.

RELATED DOCUMENTS

Managing Blood Product Storage Unit Failure or Alarm

All revision dates:

Attachments

Transfusion Services Daily Temperature Log.pdf