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| Temperature Monitoring | | | |
| **Purpose** | This procedure provides instructions for daily temperature monitoring of laboratory equipment. | | |
| **Policy Statements** | Temperature regulated equipment must be checked daily, results recorded, and when appropriate, corrective action taken and documented.  The use of automated (including remote) temperature monitoring systems is acceptable, providing that laboratory personnel have ongoing immediate access to temperature data, so that appropriate corrective action can be taken if a temperature is out of the acceptable range.  The daily functionality of the system must be documented. | | |
| **Procedure** |  | | |
|  | **Step** | Action | **Related Document** |
|  | 1 | Locate the appropriate equipment temperature log and thermometer mounted inside or on the equipment. |  |
|  | 2 | Inspect the thermometer for fluid separation and storage. Thermometers must be stored in an upright position.  Refer to manufacturer’s instructions for corrective action. |  |
|  | 3 | Record the temperature in °C for each piece of temperature controlled equipment in the box on the log. |  |
|  | 4 | Check the Smart Temps Management System for any outliers. |  |
|  | 5 | Open Children’s Intranet, proceed with the following;  ● Click on Applications  ● Scroll down to Smart Temps  ● Log in with user name and password, the following log in’s are for each section of the lab;  Mpls;  User Name: bloodbankm  Password: bloodbankm  User Name: labcorem  Password: labcorem  User Name: microm  Password: microm  User Name: histologym  Password: histology    St. Paul;  User Name: labsp  Password: labsp |  |
|  | 6 | **Daily monitoring;**  ● Click on Reports.  ● Click on Equipment Monitoring.  ● Select date range (1 day).  ● Review % and bar graph for the appropriate devices.  ● If any red color is visible on the bar graph, indicating <100% double click on it to check graph.      Reports  Equipment  Monitoring  Double Click  Here  Document corrective action;  ● Go to Report tab, click Alerts and Settings. Click on Required Actions, the instrument (event) needing action, Create Action. |  |
|  | 7 | Select Note type and then type in your note. Remember to include your tech number. Click Refresh. The Corrective Action tab will now show the completed action.    **Monthly Monitoring;**  ● Double click on individual instruments  ● Click on Graph. Select date range for the previous month.  ● Select Print icon to print the graph.  ● Click on Notes from the same selected date range.  ● Select Print icon to print notes.        Date Range Graph |  |
| **Procedure Notes**  **References**  **Historical Record** | 1.) Black devices attached to temperature regulated equipment are called guards. Guards record information every 15 minutes and send the information every 30 minutes to Smart Link. Smart Link connects network to Command Center (website). Five conditions are monitored; high/low temps, humidity, low battery, and no function.  Colored boxes are displayed in Smart Temp;  Blue – low temp  Red – high temp  Black – no activity after 120 minutes  Purple – equipment / wire malfunction  Orange – Hibernation, alerts not being sent  Guards do not sound an audible alarm. A button on the Guard lights up display and sends readings immediately to the Command Center (website).  2.) If the condition of “Hibernation” is present, temperature monitoring will have to done manually. This will be done at a minimum of once per shift. Temperatures may be recorded manually in a log book or entered manually in Smart Temps as a note.  3.) Summary of information found on the various tabs on the Command Center;  Temperature Tab - equipment Monitoring displays current status of instrument. Double click on individual instrument to get a summary that displays the last five monitors and a graph.  Reports Tab - with changeable start and end dates is printable.  Graph tab - with changeable start and end dates is printable.  Modify tab - displays temperature ranges, calibration verification and the ability to silence and hibernate alarms.  Notes tab displays alert and notes.  Alerts and Settings Tab - to document corrective action, click on Required Action and Create Action. Select note type and enter note with tech number. Click on Create Note.  Equipment Monitoring Tab - Shows % and bar graph for each instrument.  4.) The laboratory is responsible for changing batteries on Smart Guard.  The system sends out **Low Battery Alerts** when the battery life on the Smart Guard gets to **20 %.** These batteries may be ordered from Children’s Warehouse and Supply Chain- onsite Storeroom. The Item number for AA Alkaline is 440. [smart-temps-how-to-change-batteries-on-the-smart-gaurd.pdf](http://intranet.childrensmn.org/References/labsop/qual/equip/smart-temps-how-to-change-batteries-on-the-smart-gaurd.pdf)    5.) Customer support can be accessed through the Smart Temps website    Smart Temps Temperature Monitoring System Command Center (website)  [www.smart-temps.com/web/login.cfm](http://www.smart-temps.com/web/login.cfm)  [smart-temps-education-packet.pdf](http://intranet.childrensmn.org/References/labsop/qual/equip/smart-temps-education-packet.pdf)   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** | | | 1 | Laboratory Quality and Patient Safety Council  A. Quigley | 5/11/17 | | Initial Version | | 2 | A. Quigley | 8/7/17 | | Added hyperlinks for Changing batteries on the Smart Guard,  Added education packet as a resource | | 3 | A. Quigley | 8/11/17 | | Added login for St.Paul  Added Hibernation alert | |  |  |  | |  | |  |  |  | |  | | | |