

| Standard Operating Procedure<br><b>Emergency Procedures for Freezer Failure</b> |  |
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| SOP Number: <u>SOP-EPFF-02</u>  | Category: <u>Lab Process</u>           |
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|   | Revised: <u>May 1, 2019</u>            |
|   | Pages: <u>1 of 3</u>                   |
| Issued by: Director, Health Sciences Research                                   |  |

## 1.0 POLICY

This standard operating procedure (SOP) describes the actions to be taken in the event of an emergency breakdown of one or more of the research laboratory freezer units located within the W.J. Henderson Centre for Patient Oriented Research (WJHCPOR).

## 2.0 PURPOSE

In the event of freezer failure of one or more of the research laboratory freezer units in the WJHCPOR, appropriate corrective action will be taken to ensure the integrity of the biospecimens are preserved minimizing damage or loss of biospecimens' identity and tracking. The research laboratory freezer units are maintained by Kingston General Health Research Institute (KGHRI).

## 3.0 RESPONSIBILITY

Users are responsible for:

- Providing emergency contact information (mobile and home numbers) for at least two (2) users who can be reached 24/7 in the event of a freezer failure and users' biospecimens will need to be transferred to an alternate location.

KGHRI is responsible for:

- Responding to all freezer alarm notifications by KHSC's Protection Services and the built-in freezer temperature monitoring system.
- Determining if freezer failure has occurred and carrying out corrective action steps.
- Transferring biospecimens to another research laboratory freezer within WJHCPOR and/or alternate location within KHSC and/or Queen's, if available.
- Notifying users when a research laboratory freezer failure has occurred and assisting users prepare biospecimens for transfer to an alternate freezer if an on-site back-up freezer is not available.

- Updating freezer log lists and procedures related to all research laboratory freezer units within WJHCPOR.

#### 4.0 PROCEDURE

- All research laboratory freezer units within the WJHCPOR are connected directly to Kingston Health Sciences Centre's (KHSC) Security Operation Centre (SOC). In the event a research laboratory freezer unit is alarmed, SOC will dispatch KHSC's Protection Services **immediately** to the WJHCPOR to investigate the alarmed freezer and SOC will notify the designated KGHRI staff members listed on the research laboratory freezer units. The after-hour numbers are posted on all research laboratory freezer units and are kept up to date.
- In addition, if the alarm goes off (usually 20 degrees above maximum set point), the built-in temperature monitor system will alert the designated KGHRI staff by text.
- The steps below outline the procedures that will occur when a research laboratory freezer unit is alarmed during normal business hours and after hours:

The designated KGHRI staff member(s) will:

- Respond to KHSC's Protection Services notification that a research laboratory freezer alarm has been triggered. KHSC's Protection Services will come **immediately** to WJHCPOR, inspect the research laboratory freezer and either speak directly to the designated KGHRI staff members (during normal business hours) or contact via telephone the designated KGHRI staff members whose emergency numbers are displayed on the research laboratory freezer (during after hours). Remember to request from the KHSC's Protection Services the identity of the research laboratory freezer that is alarming (i.e. Freezer #1, Freezer #2, Freezer #3). The designated KGHRI staff member should also receive a Monnit Sensor Text Alert which should coincide with KHSC's Protection Services notification.
- Once notification has been received, **immediately** inspect the research laboratory freezer. If the alarm notification occurs after hours, at least one of the designated staff members will come on site to inspect and if needed, start the transfer of biospecimens to a back-up research laboratory freezer.
- If during business hours, check with other users within the WJHCPOR to ensure that no one has just been in the research laboratory freezer (with the door open for a lengthy period of time) which can trigger the alarm.
- Open the research laboratory freezer and ensure the biospecimens have not thawed and that the research laboratory freezer temperature is decreasing back down to the set point (-80°C). If it is believed that there is some mechanical failure with the research laboratory freezer, contact KHSC's Clinical Engineering Department and request a site inspection of the research laboratory freezer.

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- Determine if research laboratory freezer failure has occurred. If confirmed, biospecimens will need to be transferred **immediately**. Alert users who hold biospecimens in the affected research laboratory freezer that biospecimen transfer has to be performed. If there is room in another research laboratory freezer within WJHCPOR, biospecimens will be transferred on site. If there is no room, the designated KGHRI staff member will contact other areas in KHSC and/or Queen’s to see if biospecimens can be transferred on a temporary basis while the research laboratory freezer is being fixed. **If no research laboratory freezer can be found on KHSC’s and/or Queen’s premises, users will be required to retrieve their samples and find an interim location until the research laboratory is fixed.**
  
- Contact KHSC’s Laboratory Services for dry ice. Sample boxes will be removed from the research laboratory freezer and placed on dry ice for transfer. All efforts will be made to limit temperature fluctuations for extended periods of time by rapidly moving samples to the back-up research laboratory freezer. If it is not possible to place biospecimens in the same order as in the failed research laboratory freezer, all effort will be made to maintain a logical or sequential pattern of storage. Details of back-up storage pattern will be recorded (see Appendix A: Emergency Back Up Freezer Storage Log).
  
- Document biospecimen transfer to back-up research laboratory freezer. Track biospecimens to ensure return to correct location when corrective action has been taken. Ensure that alarm systems are operational and monitored.
  
- If KHSC’s Clinical Engineering is not able to repair the research laboratory freezer, arrange for an external service representative to come to site.
  
- Document reasons for research laboratory failure and all corrective action steps taken to restore function to the research laboratory freezer.

**5.0 SOP HISTORY**

| <b>SOP Number</b> | <b>Date Issued</b> | <b>Summary of Revisions</b>  |
|-------------------|--------------------|--|
| SOP-EPFF-01       | 01-DEC-2017        | Original version.  |
| SOP-EPFF-02       | 01-MAY-2019        | Bi-annual review of SOP completed. SOP header format updated. SOP version number updated. SOP effective date updated. Removed “Contacts” section from SOP. Updated section number for “SOP History”. Updated “SOP History” section. No updates needed to Appendix A. |
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