

	SICKLE IN AFRICA BIOBANK STANDARD OPERATING PROCEDURE		
<u>PROCEDURE ID:</u>	<u>PROCEDURE NAME:</u> SAMPLE STORAGE FACILITY		
<u>NAME</u>	<u>POSITION</u>	<u>SIGNATURE</u>	<u>DATE</u>
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<u>ISSUED BY:</u>			
<u>EFFECTIVE DATE:</u>		<u>NEXT REVIEW:</u>	

1. Purpose

The purpose of this SOP is to describe the standard procedures involved in sample storage facility and management of the -80 °C freezers being used to ensure that the sample quality is maintained. It also provides a guide on the emergency transfer of samples in case of power failure in the freezers used by other projects to store samples. It also provides guidelines on proper logging of samples at the site before shipment to the central processing and biorepository laboratory in Nigeria/South Africa/Uganda (H3Africa Biorepositories).

0. Applicability

This SOP is applicable to laboratory staff processing the samples and those that are responsible in maintaining the sample storage facility. It is the responsibility of the users to follow the guidelines stipulated herein.

The Principal Investigator (through the study coordinator, when applicable) retains the overall responsibility for the implementation of these standard procedures.

The Study Laboratory Coordinator is responsible for answering questions you may have about the content of this SOP and any other relevant study documentation. Please contact the Study Laboratory Coordinator through your site coordinator.

Abbreviations/Definitions

SOP Standard Operating Procedure
 PI Principal Investigator
 °C Degrees Celsius

Required material

- Power backup capacity
- Thermometers
- Cryoboxes
- Dry Ice
- Freezer Maintenance logs
- Back up freezers
- Back up lab
- Alarm systems
- Emergency contact list

Methods

1. General considerations

1. Freezer room temperature in which the samples are being stored should be monitored and logged on temperature logs on a daily basis in the morning and evening. The freezer room should have air-cooling and ventilation installed to ensure that a room temperature of between 15°C - 30°C is maintained to prevent overheating of the equipment.
2. Freezer room airflow and humidity conditions shall be controlled by ensuring adequate air circulation around the freezers to avoid fungal growth. This will prevent excessive accumulation of moisture and condensation.
3. Cleaning of the facility should be done daily to avoid accumulation of dust in the facility.
4. Proper lighting should be provided to allow enough light to perform routine tasks in the freezer room.

0. General maintenance of the freezer

1. Ensure that the freezer doors for freezers where samples are stored shall not be unnecessarily opened for more than 3 minutes to avoid temperature increases and only one rack or box may be removed at a time.
2. The freezers should be inspected daily for cleanliness, malfunctions and possible temperature variation using freezer temperature logs.
3. Document and maintain evidence of actions taken in case of any malfunctions and communicate with the laboratory network coordinator through your site coordinator.
4. Preventative maintenance of the freezers should be put in place at regular intervals as per manufacturer's recommendations.
5. Maintain temperature probe in the freezer to ensure that it captures accurate freezer temperature.

6. Test alarms for functionality of both temperature variation and electrical power supply interruption as regularly as possible and as stipulated in your SOP per your site SOP.
7. Ensure that all the freezers are numbered and that you have a functional 24-hour emergency contact list with a list of personnel to be contacted in case of freezer malfunction. The list should be reviewed on a regular basis to capture any changes of personnel contact or in case a staff has left your institution.
8. Train personnel on how to monitor and defrost mechanical freezers regularly and monitor daily for any frost build-up that may prevent proper sealing of freezer doors hence causing temperature fluctuations.

0. Backup Freezers or Facility

The facility should be installed with a back-up generator with adequate reserve of fuel for up to 24 hours.

If you do not have a backup freezer available in your biorepository, if possible, make arrangements with a partner laboratory with a freezer facility to accommodate your samples in case of a power failure.

0. Emergency Transfer of Samples

1. In case of failure of any freezer with samples, document all the affected samples in a log and inform the site coordinator immediately. Trained biorepository personnel should do rapid transfer of samples to the backup freezer.

0. The samples being transferred to the backup freezer should be documented to ensure return to the correct location when corrective action has been taken.

0. All samples must be transferred in dry ice ensuring the least time possible is taken to transfer the samples and no temperature variation that may lead to thawing of the samples is attained. Any thawed samples should be documented and communicated to the lab manager.

0. A full report on what caused the freezer failure, complete inventory of the affected samples and the corrective action taken should be shared with the site PI/coordinator as well as the laboratory network coordinator.

