

## Temperature Monitoring (Clinical Trials)

**IT IS THE RESPONSIBILITY OF ALL USERS OF THIS SOP TO ENSURE THAT  
THE CORRECT VERSION IS BEING USED**

All staff should regularly check the R&D Unit's website and/or Q-Pulse for information relating to the implementation of new or revised versions. Staff must ensure that they are adequately trained in the new procedure and must make sure that all copies of superseded versions are promptly withdrawn from use unless notified otherwise by the SOP Controller.

The definitive versions of all R&D Unit SOPs appear online. If you are reading this in printed form check that the version number and date below is the most recent one as shown on the R&D Unit website: [www.northyorksresearch.nhs.uk/sops.html](http://www.northyorksresearch.nhs.uk/sops.html) and/or Q-Pulse

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Author:	Sacha Honour & Poppy Cottrell-Howe
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Approved by:	Name/Position:	Jax Westmoreland, Principal Pharmacist, Clinical Trials and Research
	Signature:	Signed copy held by R&D Unit
	Date:	8 <sup>th</sup> January 2018
	Name/Position:	Sarah Sheath, SOP Controller
	Signature:	Signed copy held by R&D Unit
	Date:	8 <sup>th</sup> January 2018

This SOP will normally be reviewed every 3 years unless changes to the legislation require otherwise

## Version History Log

This area should detail the version history for this document. It should detail the key elements of the changes to the versions.

Version	Date Implemented	Details of significant changes
1.0	16 <sup>th</sup> March 2009	
2.0	27 <sup>th</sup> July 2009	
3.0	1 <sup>st</sup> January 2010	Pharmacy SOP put into revised template, temperature excursion section added
4.0	2 <sup>nd</sup> July 2012	Change of SOP Controller. Removal of references to the North and East Yorkshire Alliance. Updated to reflect addition of freezer temperature monitoring form, addition of temperature excursion notification form
5.0	24 <sup>th</sup> February 2014	Inclusion of Scarborough Hospital as a site working to this SOP. Removal of guidance relating to Comark temperature loggers. Addition of central Temperature excursion record file.
6.0	19 <sup>th</sup> October 2015	Inclusion of new forms. Change of author. Process of cold chain transport to offsite units and other minor changes.
7.0	5 <sup>th</sup> February 2018	Change of author. Reference to the devices in use and changes to reflect and standardise practice across both sites. New location for NotionPro validation certificates.

## Contents

	<u>Page No</u>
Version	2
1 Information, Background and Purpose	1
2 Who Should Use This SOP	1
3 When this SOP Should be Used	1
4 Procedure(s)	1
5 Temperature Monitoring Systems and Devices	1
6 Daily Temperature Recording	2
7 Creating Monthly Temperature Graphs	3
8 Back-up Temperature Monitoring Devices	3
9 Temperature Excursions	4
10 Fridge and Freezer Alarm Fault Reporting	5
11 NotionPro Alarm Activation	5
12 In the Event of NotionPro failure	5
13 Cold Chain Transport to off-site units	5
14 Validation of off-site transfer using a shipping container	6
15 Related SOPs and Documents	6

## **1 Introduction, Background and Purpose**

Correct storage of Investigational Medicinal products (IMP) is vital to assure the integrity and quality of the medicinal products used in clinical trials. Routine temperature monitoring forms an integral part of that assurance, ensures that a continuous record of storage temperature is available for all IMPs and allows production of temperature records for the Sponsor or MHRA if requested.

Where IMP is stored outside Pharmacy, temperature monitoring will be undertaken as described in study specific trial instructions.

## **2 Who Should Use This SOP**

This SOP should be followed by all members of the pharmacy clinical trials team within Pharmacy at York Teaching Hospital NHS Foundation Trust.

## **3 When this SOP Should be Used**

This SOP should be used by the pharmacy clinical trials team when monitoring and reviewing storage temperatures in areas where IMP is stored.

This SOP should be used in conjunction with the general pharmacy SOP for temperature monitoring.

## **4 Procedure(s)**

A member of the pharmacy clinical trials team should be assigned to monitor and/or review the temperature of IMP storage areas daily on Monday to Friday (with the exception of bank holidays).

## **5 Temperature Monitoring Systems and Devices**

The pharmacy temperature monitoring system (NotionPro) is in routine use within clinical trials and Denward temperature loggers are used to provide back-up monitoring should NotionPro fail.

Temperature logging systems or devices used for temperature monitoring IMPs should be UKAS certified where possible. Annual calibration of the NotionPro system is arranged by the pharmacy quality assurance team and the calibration certificate stored on QPulse.

The location of all Denward loggers should be tracked and a list of the places in which they have been used should be kept.

Loggers should be retrieved and sent for recalibration prior to the expiry of the current calibration certificate.

Denward loggers are externally calibrated. A purchase order must be raised for recalibration requests and the order number quoted on the request to the manufacturer.

All areas where IMP is stored will be monitored this includes:

- The clinical trials dispensary (York & Scarborough)
- All clinical trials fridges (York & Scarborough)
- All clinical trials freezers (York & Scarborough)
- The pharmacy Cold Store (York)

All refrigerators used for storage of IMP must be continually monitored to ensure that the temperature remains within the range 2°C to 8°C.

Areas used for IMP storage at ambient temperature must also be continually monitored to ensure that temperatures remain within the range 15°C to 25°C.

Freezers used for the storage of IMP also require continuous temperature monitoring when used to ensure that the temperature is maintained between -15°C and -25°C or other suitable range as defined in the clinical trial protocol.

## 6 Daily Temperature Recording

Temperature records for all areas within pharmacy where IMP is stored should be checked each weekday (with the exception of bank holidays) via the NotionPro temperature monitoring system. Use Pharm/F108 to record these checks.

At the start of each working day a member of the pharmacy clinical trials team at each site should:

- Log on to NotionPro (<http://svsnotion/notionpro/>) username: pharmacy password: view1234
- Select the required site (York or Scarborough)
- Select 'Reports'
- Select 'Browser Summary Reports'
- Click to tick the box for each required location
- Click 'generate report'
- Select date of last check as the start date
- Select the current date as the end date
- Set the sensor type to 'All'
- Click search
- Document the results on form Pharm/F108
- Inform a senior staff member of any temperature deviations.
- Log out of NotionPro

The Clinical Trials Manager should review and sign each completed form at the end of each month and take action as appropriate.

Completed forms should be stored in the Temperature Monitoring folder located in the clinical trials dispensary at each site.

## 7 Creating Monthly Temperature Graphs

### 7.1 At the end of each month generate a NotionPro cumulative graph for each storage location as follows:

- Log on to NotionPro (<http://svsnotion/notionpro/>) using 'pharmacy' as the username and 'view1234' as the password
- Select the required site (York or Scarborough)
- Select 'View Data'
- Select the required storage location
- Enter the start date and select month as the interval period Select Print. If the print option is not available, click on tools (top left of screen), then compatibility view setting and in compatibility view, untick intranet sites.
- Open the file which appears at the bottom of the screen and click print.
- File the printed graph in the appropriate section of the monthly temperature graphs folder located in the clinical trials dispensary.
- Paper copies of graphs should be retained for 10 years.
- Save the opened graph file on the x-drive in the appropriate section of the clinical trials/temperature monthly graphs folder. The file name should follow the format location, month and year e.g. Dispensary January 2017
- Once all the required temperature graphs have been printed, filed and electronic copies stored on the x: drive, exit NotionPro.

## 8 Back-up Temperature Monitoring Devices

To ensure that temperature is continuously monitored even in the event of a NotionPro failure, Denward loggers should be activated and placed in each area where temperature recording is deemed necessary.

Activate the Denward loggers every Monday morning (or the next working day in the case of bank holidays) as follows:

- Click on the EasyLog icon on the PC desktop
- Insert the logger in to a USB port on the PC
- Click on Set up and start the USB data logger icon.
- Follow the instructions displayed on the screen ensuring that the correct units and parameters are set (remember to delay the start by one hour for any logger going in to a fridge)
- Ensure that the process has been completed this will be indicated by a tick and a notification to remove the logger.
- Remove the logger

Note that logger data will only be saved and graphs printed in the event of a NotionPro failure.

## 9 Temperature Excursions

A temperature excursion is deemed to have occurred if the recorded temperature for a given storage location falls outside its pre-defined limits.

If a temperature excursion occurs, quarantine the affected IMP at the correct temperature immediately as outlined in Pharm/S59.

Move the IMP supplies to an area which is within normal range. The IMP must be clearly marked as quarantined and for clinical trials use only and a record of the temperature in the new storage area must be kept.

Notify all members of the pharmacy clinical trials team so that they are aware that the stock cannot be used.

Inform all the relevant sponsors whose stock is stored within the area where the temperature excursion occurred. This should be done in writing via email and a copy of the temperature graph included with the email. Request that the sponsor confirms in writing whether the IMP is suitable to use following the excursion.

Inform the relevant Research Nurse(s) for the affected clinical trials as soon as possible as they may have to re-arrange patient visits if the Sponsor has not confirmed that the affected IMP is still suitable for use.

Further information on reporting temperature excursions can be found in individual study pharmacy site files.

If the reason for the excursion has not been identified, or has not been corrected, contact the Facilities department to check the air conditioning system/refrigerator/freezer as applicable. Record the job reference number and any actions taken on the temperature monitoring form (Pharm/F54).

If the temperature excursion has been resolved and the trial sponsor has confirmed that the product is safe for use, remove the IMP from quarantine and return it to the designated storage area for that trial.

Document all actions taken in the 'Temperature Excursion Record Form (Clinical Trials Pharm/F79) using one form per trial affected and file the completed form(s) in the Temperature Monitoring Folder. Some sponsors may provide their own temperature excursion forms and may request further information about the excursion.

Write a file note for each affected trial and attach all correspondence relating to the affected IMP and a copy of the temperature graph. The file note should be filed within the temperature section of the pharmacy site file.

Update the file note log so that it reflects all temperature excursions which may have occurred.

## 10 Fridge and Freezer Alarm Fault Reporting

Move any IMP stored in the affected fridge or freezer to a suitable alternative temperature controlled location ensuring that the temperature is still continually monitored.

Report suspected fridge or freezer alarm faults to the pharmacy quality assurance department. If they are unable to determine the cause, escalate the report to the facilities department.

## 11 NotionPro Alarm Activation

NotionPro will send an alarm notification by email when temperatures fall outside the permitted temperature range. These alarms should be actioned in accordance with the general pharmacy SOP for temperature monitoring.

## 12 In the Event of NotionPro failure

If NotionPro fails then:

- Obtain daily temperature readings from the digital display on the individual Denward loggers. Record these readings as noted for NotionPro above.
- Download data from the Denward loggers and save it on the x-drive each Monday morning (or next working day) as previously.
- Print weekly graphs as follows:
  - Click on the EasyLog icon on the PC desktop
  - Insert the logger in to a USB port on the PC
  - Click on Stop the USB Data Logger and download data icon.
  - Enter todays date after the logger name e.g. CTAmbient011217 and save the data on the x-drive/clinical trials/temperature monthly graphs in the appropriate location file
  - Follow the instructions displayed on the screen ensuring that the correct units and parameters are set (remember to delay the start by one hour for any logger going in to a fridge)
  - Ensure that the process has been completed before removing the logger.

## 13 Cold Chain Transport to off-site units

To avoid temperature excursions when transporting cold chain items to off-site units a validated process must be followed.

Temperature loggers will be used to ensure that no temperature excursions have occurred during transport or packaging.



Trial specific instructions contain information on the correct method of packing each shipment or carrier.

#### **14 Validation of off-site transfer using a shipping container**

Prior to sending IMP to an offsite location the process must be validated to ensure that there are no temperature excursions and that the process can be replicated without issue.

#### **15 Related SOPs and Documents**

Pharm/F79	Temperature Excursion Record Form (Clinical Trials)
Pharm/S59	Quarantine of IMP
Pharm/F42	Quarantine Notice
Pharm/F43	Quarantine Log
Pharm/F108	Daily Clinical Trials Temperature Checks
Pharm/S76	Storage and dispensing of Investigational Medicinal Products outside of Pharmacy

UNCONTROLLED DOCUMENT WHEN PRINTED