University of Hertfordshire UH

## University of Hertfordshire

# DATABASE LOCK AND DATA EXTRACT AUTHORISATION

## Clinical Trials Support Network (CTSN)

Standard Operating Procedure for the locking of clinical trial databases and authorisation for data extraction

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| **SOP Number:** gSOP-46-01 | **Effective Date**: 16th March 2022 |
| **Version Number:** 1.0 | **Review Date:** 3 years (or as required) |

### 1. BACKGROUND

This is a University of Hertfordshire (UH) standard operating procedure (SOP).

This document sets out the procedures to be followed by all UH staff who are involved with data management processes and the extraction of data for analysis. All SOPs are required to assist researchers in conducting research in accordance with the principles of ICH Guidelines for Good Clinical Practice (ICH GCP E6 (R2), 2016), Clinical Trials Regulation EU No 536/2014 and the UK Policy Framework for Health and Social Care Research.

Where there are potential conflicts between different collaborating organisations' SOPs project level working instructions should be developed to determine precedence.

On completion of a clinical study and at formal interim analyses, the database must be locked and exported to the appropriate analysis. The authorisation and validation process for locking and unlocking the database will ensure that the database is in a known good state at the end of the study.

### 2. PURPOSE

This SOP describes the process for how datasets obtained from databases used for the capture of clinical trial data at UH should be accessed, controlled and protected to ensure data is managed and reliable for its intended uses. It also describes how datasets should be provided to users of the data. The uses are limited to:

- Datasets required during database locking.
- Datasets used for interim analysis.

This SOP documents how to undertake a database lock of a clinical trial database. It also covers procedures required should a hard locked database need to be unlocked.

This document will cover the following principles:

- The process is controlled.
- There must be a formal request to lock a database, and Sponsor approval to unlock a hard locked database.
- There must be procedures in place to govern how the dataset is to be made available for use i.e. what was undertaken to make it available, where it is stored and how it is to be accessed and protected?
- There is a formal declaration of when the hard lock is completed, and the dataset declared 'final'.
- There is evidence of how this state of finality was achieved.

## 3. APPLICABLE TO

This applies to all staff involved in clinical research sponsored/co-sponsored by UH or hosted by UH, including, but not limited to: Chief Investigators, Principal Investigators, Research Fellows, Consultants, Statisticians, Clinical Trial Pharmacists, Research Managers, Research Nurses, Clinical Trial Practitioners, Allied Health Professionals, Trial Coordinators, Clinical Studies Officers, Data Managers and Students.

## 4. RESPONSIBILITIES

The data lock and data extraction processes are the responsibility of the data management team.

The CI, Statistician, Trial Manager and Sponsor may input into the decision to lock a trial database.

## 5. PROCEDURE

In order to maintain a robust dataset, it is vital that database locking is a controlled process subject to the appropriate approvals by interested parties. This is ensured by the use of approval forms.

Locking a database is the process of removing the ability of users to add, edit or delete data. Locking may be partial (leaving certain areas of the database open for further edits) or full (no changes allowed).

Partial locking may be useful towards the end of the study to allow verification and 'cleaning' of sections of the database where data entry has finished, leaving other areas open for data entry to continue.

### 5.1 Data Validation

- There should a Data Validation Plan which lists all the checks that will be made post-lock to ensure that the dataset is in as good a state as possible.

- The Data Validation Plan should be executed on the database each time it is locked. Any checks arising should be resolved or accepted and documented by the study statistician. Details of the checks (e.g., database query code) should be retained so that they can also be re-run once the database has been re-locked after resolution.

### 5.2. Locking the database

- Usually the trial manager will make the request for a database lock under instruction from the CI. The request should be documented in the Trial Master File (TMF). The CTSN TP-41 Database Lock Request and Authorisation Form should be completed to initiate the locking procedure and CTSN TP-44 Data Export Checklist to provide authorisation to provide a cleaned dataset.

- Upon receipt of the database lock request, the database manager will take the necessary steps to ensure that all access to users will be restricted to read-only.

- A full backup of the database will be taken and stored in the Data Management team study folder.

- A hard lock is always preceded by a soft lock.

#### 5.2.1. Soft Lock / Data Cleaning

- During soft lock, the trial team will clean the dataset and ensure it is as complete as possible and contains accurate data. The request should be documented in the TMF and CTSN-TP-41 Database Lock Request and Authorisation Form should be completed to initiate the locking procedure. Once the locking process has been initiated the majority of data should be in place and routine addition of new data is not expected.

- On locking the database, the trial team will clean the dataset and ensure it is as complete as possible and contains accurate data. The database manager should run the queries etc. as specified in the Data Validation Plan (CTSN TP-45 Data Validation Plan Report template) to check for missing, invalid or inconsistent data. Only data directly related to previously queried data should be added and no further data should be included.

- The dataset may or may not require further revisions. The Statistician may highlight areas that need further cleaning and/or missing data that are required. This is an iterative process until the Statistician is satisfied.

- Data changes during this process should be undertaken in the same way as routine data management and data entry.

- During soft lock, edit permissions are retained in order that data can be updated. It is permissible however, to remove permissions from users who no longer require edit permissions e.g., for a user from a site that has had all data cleaned.

- The soft lock is confirmed by completing CTSN TP-41 Database Lock Request and Authorisation.

#### 5.2.2. Hard Lock

- Only when soft lock is completed, and the dataset is considered final and ready for analysis can the hard lock be initiated. The request should be documented in the

TMF and CTSN-TP-41 Database Lock Request and Authorisation Form should be completed to initiate the locking procedure.

- Evidence of procedures and processes that led to the decision that the dataset is final must be retained. This includes any correspondence, reports, checklists and assessments generated during the cleaning process.

- When data cleaning is completed, and the dataset is considered final and ready for analysis the database can be declared *'Validated'*. The database should have all edit permissions revoked to prevent any amendments to the database.

- Details of where the created dataset is stored and how it is to be accessed and protected should be clearly documented.

- Once locking is complete, the CI confirms they are satisfied that the locking process has been followed by completing the CTSN TP-41 Database Lock Request and Authorisation Form.

### 5.3. Unlocking the database

- Once locked the database cannot be unlocked without good reason. Unlocking will be limited to significant corrections that will have an impact on the reliability of the results.

- In the event that a locked database requires unlocking, the CI should seek permission from the Sponsor. Full details of all data-points to be amended and the reason for each amendment should be documented in the TP- 42 Database Unlock Request Form which should be signed by the Sponsor. The justification to unlock the database, the effect on the statistical outcome and the signed approval form must be documented in the TMF prior to the unlock being undertaken.

#### 5.3.1. Re-locking the database

- Prior to re-locking, the audit trail for the database must be reviewed by the Trial Manager/Database Manager to confirm that only the approved changes were made. Any files, data etc. created to support this process should be retained. The outcome of the review and if appropriate, the audit trail should be filed in the TMF. If it becomes apparent that data-points not approved by the sponsor have been amended, this must be escalated to the Sponsor, CI and trial statistician immediately and appropriate steps taken to ensure data accuracy, compliance and correct documentation.

- Only once all queries or issues have been resolved the re-locking process should be undertaken again as soon as reasonably appropriate.

## 6. RELATED DOCUMENTS

- gSOP-40 Data Management Overview
- CTSN TP-41 Database Lock Request and Authorisation Form
- CTSN TP-42 Database Unlock Request Form
- CTSN TP-44 Data Export Checklist

- CTSN TP-45 Data Validation Plan Report template

## 7. APPENDICES

- Appendix 1 – Definitions

## 8. VERSION HISTORY/REVISIONS

| Version Number | Effective Date | Reason for Change |
|---|---|---|
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## 9. AUTHORSHIP & APPROVAL

### Author

**Signature**  **Date 15/03/2022**

### Pro-Vice Chancellor (Research & Enterprise) Approval

**Signature**  **Date 01/03/2022**

## 10. AGREEMENT (MOVE ON TO SEPARATE SHEET BEFORE PRINTING)

**Please detach and retain within <u>your training files</u>**

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**I have read and understood the contents and requirements of this SOP (ref gSOP-046-01) and accept to follow University policies implementing it.**

**Recipient**

Signature: ……Date: …….

Name & Position: ……

**Please retain copy of the signed form for your reference in your training file**

## Appendix 1: Definitions

**Chief Investigator**
A Registered Physician, Dentist, Pharmacist or Registered Nurse who has overall responsibility for the conduct of the trial.

**Clinical Trial**
A research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or control) to evaluate the effects of those interventions on health outcomes.

**Clinical Trial Authorisation (CTA)**
Regulatory approval issued by a Competent Authority to conduct a clinical trial within a Member State.

**Clinical Trial of Investigational Medicinal Product (CTIMP)**
A study that looks at the safety or efficacy of a medicine/food stuff/placebo in humans as defined by the Medicines for Human Use Regulations (2004).

**Clinical Trial Database**
A repository of data associated with a clinical trial.

**Database Lock –** The process whereby a dataset is readied for analysis and then its state is kept constant – i.e. locked so that the data cannot be subsequently amended.

**Dataset**
Data contained in the clinical trial database.

**Investigational Medicinal Product (IMP)**
A pharmaceutical form of an active substance or placebo being tested or used as a reference in a clinical trial. This includes a medicinal product which has a marketing authorisation but is, for the purpose of the trial -

- Used or assembled (formulated or packaged) in a way different from the form of the product authorised under the authorisation,
- Used for an indication not included in the summary of product characteristics under the authorisation for that product,
- Used to gain further information about the form of that product as authorised under the authorisation.

**Hard Lock**
The point when the data in a clinical trial database has been cleaned and validated and all edit permissions are revoked. Data in a hard locked database is considered clean, complete (as far as is possible) and ready for analysis, and no further data amendments are expected.

**Non-Substantial Amendment**
Minor changes to the original REC application, to the protocol, or any other supporting documentation that will NOT affect to a significant degree;

- The safety or physical or mental integrity of the subjects of the study;
- The scientific value of the study;
- The conduct or management of the study;
- The quality or safety of any investigational medicinal product used in the trial.

**Principal Investigator (PI)**
A Registered Physician, Dentist, Pharmacist or Registered Nurse who has responsibility for the conduct of the trial at a host site.

**Substantial Amendment**
Amendments to the original REC application, to the protocol, or any other supporting documentation that is likely to affect to a significant degree:

- The safety or physical or mental integrity of the subjects of the study;
- The scientific value of the study;
- The conduct or management of the study;
- The quality or safety of any investigational medicinal product used in the trial.

**The Medicines & Healthcare products Regulatory Agency (MHRA)**
UK Competent Authority responsible for regulation of clinical trials.