University Hospitals Bristol **NHS**
NHS Foundation Trust

Standard Operating Procedure

VALIDATION AND BACKUP OF COMPUTER SYSTEMS USED IN RESEARCH

SETTING	Trustwide
AUDIENCE	Chief Investigators and associated Research Staff setting up and managing clinical trials sponsored by UHBristol
ISSUE	Clinical Trials of Investigational Medicinal Products are subject to the Medicines for Human Use (Clinical Trials) Regulations. Data must be collected, stored and manipulated using systems which support compliance with the law and Good Clinical Practice (GCP).
	This SOP should be read in conjunction with the Study Data SOP

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Standard Operating Procedure (SOP)

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Approved by:	Trust Research Group		
Date for review:	November 17		

Review date	Version number	Version Date	Effective Date	Reason for change	Author/Responsible person	Authorised by
-	1.0	27/10/15	03/11/15	n/a –original	Diana Benton	Diana Benton
November 2016	1.1	23/06/17	03/07/17	Annual review – addition of CTIMP verification appendix and minor updates and clarifications	Genna Nicodemi, Jess Bisset & Debbie McPhee	Diana Benton

1. Purpose

The purpose of this SOP is to describe the processes which should be implemented in order to document that a computer system in use within a Clinical Trial of an Investigational Medicinal Product (CTIMP) is fit for purpose and supports sponsor compliance with applicable legislation and Good Clinical Practice (GCP).

2. Scope

In scope: Computer systems, both hardware and software, in use in clinical trials of investigational medicinal products sponsored by UHBristol that impact on the quality of the trial data and subject safety.

GCP	Good Clinical Practice
CTIMP	Clinical Trial of Investigational Medicinal Products
CSV	Computer systems validation
DMS	Document management system

3. Definitions/abbreviations

4. Procedure

4.1 Validation

All systems, whether procured from an external supplier, or developed within the trust, must be validated. Validation for all types of systems should take the form of robust controls throughout the system's use, supporting documentation (as part of the data management plan) and demonstrable evidence that a computer system in use is fit for purpose. Please see appendix 1 to Study Data SOP for the template data management plan.

For activities within the scope of this SOP that are carried out by a third party (e.g. a clinical trials unit), evidence of validation of relevant systems must be provided prior to their use. The CI will document the computer systems that (s)he intends to use to collect and manage data for the CTIMP. The data management plan and subsequent amendments must be agreed with the trial sponsor prior to implementation in accordance with the Study Data SOP.

4.1.1 Risk-Assessed Validation

The level of validation required must be determined by making a risk-based assessment of the nature of the system. This assessment will include:
- Identification of all risks posed to the system validity
- Measures taken to mitigate those risks
- What evidence is required to demonstrate risk mitigation

4.1.2 Examples of systems and levels of validation required

Off the shelf: *Microsoft excel for data management and simple analysis:* Cell formatting and formulae should be checked to ensure the required specification is met, and the checks made should be documented. For example, confirm that columns intended to receive a date are appropriately formatted; confirm the required number of decimal places is captured; confirm that values calculated from a number of cells use the correct formulae.

Trial specific: *Adaptation of a commercially available off the shelf package (e.g. randomisation systems, eCRFs):* Document the agreed and approved specification, how the system will be tested (both by the users and the developers), that any issues with the system identified through testing have been resolved and the specification is met (validation report), instructions for use and how users will be trained, training records, how the final system will be released.

Bespoke system: *Purpose built system solely for the trial:* Document the process by which the decision to use a bespoke system was made and the risk assessment conducted as part of that decision making process, the agreed and approved

specification (functional and user requirements), validation plan, code-testing documentation, that any issues with the system identified through testing have been resolved and the specification is met (validation report), instructions for use and how users will be trained, training records, how the final system will be released.

4.1 Change control

Any change to the system must be controlled and documented. The following information should be included: reason for changes and person requesting changes, risk assessment, assessment of the changes and what actions are required, approval of the changes, testing, validation report and release documentation. These are complementary to the processes described in section 02.

5. System Backup

Arrangements should be in place to ensure that data can be retrieved if there is a computer system failure. Computer systems should be located within an infrastructure which provides for routine backups and disaster recovery in order to protect against accidental loss. Confirmation of this should be documented within the data management plan, or on a global level if more appropriate. Local copies of different versions of data sets/databases should be retained if there is not audit software in place, in accordance with the 'Study Data' SOP. These will be subject to organisational backups.

6. Dissemination and training in the SOP

6.1 Dissemination of this SOP

6.1.1 New SOPs and new versions of existing SOPs: The Research Operations Manager will be responsible for ensuring authorised SOPs are uploaded to the DMS in line with Trust policy and on the R&I website as described in the SOP "Authorship, review, revision and approval of research procedural documents produced by Research & Innovation". Internal Trust Staff are expected use the DMS to access latest versions of SOPs and to check the website regularly for updates, as communicated in the Training SOP.

Notice of new or amended procedural documents that have undergone a major amendment will be given via the following routes:

- Inclusion in the R&I e-bulletin (monthly);
- Direct email to Research Leads, Research Unit Managers and Band 7 staff for onward cascade;
- Direct email to Chief Investigators of CTIMPs sponsored by UHBristol;
- Direct email to the Head of Research Governance at the University of Bristol (as relevant).

6.2 Training in this SOP

6.2.1 All staff whose activities are subject to this SOP should ensure that they read and understand the content of the SOP.

6.2.2 The training log within the Investigator Site File/Trial Master File should be completed to document that members of staff have read and understood the content of the SOP and its amendments.

7. Appendices

- Appendix 1: R&I Work Instruction for verification of UHBristol Sponsored CTIMP data on EDGE

IMPORTANT NOTE:

This procedure has been screened for equality impact; it was not assessed as having adverse effects on any section of the community.

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RELATED DOCUMENTS	Developing and Designing your Study SOP Research Training SOP Investigator Oversight of Research SOP Study Data SOP Research Contracts and Vendor Selection SOP Monitoring and Oversight of Research Activity SOP
AUTHORISING BODY	Trust Research Group
QUERIES	Research Operations Manager or Research Management Facilitators - Research & Innovation Department via 0117 342 0233

Appendix 1

Work Instruction for verification of UHBristol Sponsored CTIMP data on EDGE

EDGE is an off the shelf product which is used for research management in NHS R&D offices. See http://www.edgeclinicalresearch.com/about/ for further information.

Within the context of UHBristol R&I office, EDGE is used to generate a number of reports that are used to manage the research we host and sponsor.

Some of the reports that are generated have the potential to impact on sponsor activities in relation to the regulatory elements of Clinical Trials of Investigational Medicinal Products. This work instruction is to be applied to those reports. Some of the reports that the trust uses are generated directly from the EDGE database; some are downloaded as excel spreadsheets and manipulated. The purpose of this work instruction is to ensure that data we receive are correctly reported and that activities relying on those data are carried out appropriately.

Applicable Reports:

-R&I - Admin - Sponsored CTIMP Reports [P]

-R&I Admin - Sponsored CTIMP Verification [P]

-R& I - Ops - Sponsored Study Reports [P]

-Sponsored Study Reports from - Ops_Report xx-xx-20xx

The above reports can be found on the 'project attributes report' listing on EDGE.

Verification of Reports on EDGE

Reports must be verified annually by the R&I Information Officer prior to running CTIMP data verification. This is in order to check that reports are identifying the same dataset.

1. From EDGE prepare report entitled 'R&I - Admin - Sponsored CTIMP Verification [P]' setting report filter to exclude studies where the final report was sent prior to the last MHRA Inspection. Run report then download and print first three columns of the report.
2. Physically check print out of report against Sponsored CTIMP hardcopy folders in RMF office to ensure all appropriate studies have been identified by the Report.
3. On EDGE run report entitled 'R&I - Ops - Sponsored Study Reports [P]' and download to Excel. From download, apply filter for CTIMP studies only, print out and cross refer to the list of studies identified from the other report entitled 'R&I - Admin - Sponsored CTIMP Verification [P]'to confirm these are the same.
4. Information Officer signs the printouts to confirm correct studies identified, scans and saves in 'UH Bristol sponsored CTIMP report verification' electronic file in reports folder on R&I shared drive.
   If any studies are missing or incorrect from the reports, the Information Officer will identify and amend the error(s) in the report(s) and repeat the process (1-3) above until correct studies are identified. If necessary, amendments to fields in EDGE will be made to support correct reporting.

If any changes are made to the structure of either report, this process should be repeated as soon as reports are changed (to check accuracy) and once more before next verification.

At the Operations meeting (Ops) following the verification, RMFs will be asked to check that all expected studies are appearing on the Ops report tab 'Sponsored CTIMPS Reports Due'. The information for this tab is provided from the report entitled 'R& I - Ops - Sponsored Study Reports [P]' described above.

If any are missing this will be recorded on the Ops meeting actions log for the Information Officer to investigate and resolve.

Validation of data

Checks are to be carried out for each UH Bristol sponsored CTIMP by the R&I Staff annually in February, in the order described below. If reports are amended, then the checks have to be repeated as soon as the new report is generated:

1. Information officer to run - R&I - Admin - Sponsored CTIMP Reports [P] and update the mail merge link to attach to CTIMP Data Verification Table (see below). Information officer will save each CTIMP Data Verification Table in the applicable study folder (labelled with the date it was created) and print out 1 copy for each CTIMP.

2. RMFs will then compare source documents to the data held in the CTIMP Data Verification Table for each CTIMP.

3. The source data will be held within the electronic or hard copy files of the TMF/Sponsor file. All data points in the CTIMP Data Verification Table will be checked for accuracy.

4. If there are any errors identified the RMF must make a note of the error on the hard copy of the CTIMP Data Verification Table, update EDGE with the correct information and document that this has been completed.

5. Any queries should be raised with the Information Officer or Research Operations Manager.

6. The Information Officer along with the Research Projects Officer (Sponsored Trials) will also review the 'Sponsored Studies' excel sheet from the most recent Ops report. This report contains manipulated data and is used to determine when DSURs are due to be reported to the regulatory authorities.

    a. They will check that DSUR due date is less than one year in the future and is on the CTA anniversary date.
    b. They will print the excel sheet and confirm the check has be carried out by initialling each study. This will be scanned and filed with Verification documentation held on the J drive.

A copy of the completed CTIMP Data Verification Table and any other related correspondence will be filed hard copy in the Sponsor files in the RMF office.

UHBristol Sponsored CTIMP Data Verification Table
Run Date - XXXX

On annual check, all fields should be checked against source data (MHRA Application, Amendments and Reports). If checks are carried out more frequently, any changes from last verification should be checked against source data

1. Study Details

	Source data checked				Source data checked
Project ID	«Local_project_reference»	☐	**CI**	«Chief_Investigator»	☐
Status	«Project_site_status»	☐	**RMF**	«RMF_Allocated»	☐
Project Title	«Project_Title»				

2. Reporting

MHRA Approval Date	«MHRA_Approval_Date»	☐	**NHS Permission Date**	«Project_site_Start_date_NHS_Permission»	☐
Last DSUR sent	«Last_relevant_DSUR_sent»	☐	**Closed Date**	«Project_site_Closed_date»	☐
Date of End of Study Notification	«Date_of_end_of_study_notification»	☐	**Final Report Date**	«Date_final_Report_Received»	☐
Linked studies for DSUR	«DSUR_LinkedReporting_Studies»				

3. Drugs			4. Risks		
Drug Name 1	«Drug_Name_1»	☐	**Risk Adaption Category**		☐
Drug Name 2	«Drug_Name_2»	☐	«Risk_Adaption_Category»		
Drug Name 3	«Drug_Name_3»	☐	**Early Phase Study**	«Early_Phase_Study»	☐
Placebo	«Placebo»	☐	**Participants Healthy Volunteers**	«Participants_Healthy_Volunteers»	☐
Drug Type - Biologic	«Drug_Type__Biologic»	☐	**Participants – Children**	«Participants_Children»	☐
Drug Type - Chemical	«Drug_Type__Chemical»	☐	**Participants – Vulnerable Adults**	«Paticipants__Vulnerable_Adults»	☐
Drug Type – Advanced Therapy	«Drug_Type__Advanced_Therapy»	☐	**Study involving pregnancy**	«Study_Involving_Pregnancy»	☐
Drug Type – Other	«Drug_Type__Other_Eg_Herbal»	☐	**Study involving emergency care**	«Study_Involving_Emergency_Care»	☐
Licensed within EEA	«Licensed_Within_EEA»	☐	**Notes**		
Licensed within EEA – off label	«Licensed_Within_EEA_Off_Label_	☐			

Unlicensed within EEA	«Unlicensed _Within_EE A»	☐	

5. Amendments

Any Amendments Submitted since last validation?	**Yes/No**	Amendment no(s).	

Describe any implications to IMP of amendments which would affect EDGE record

6. Validation

No changes from previous check	☐	Amendments made and EDGE record reflects current status of study	☐

Note any changes since last verification and confirm data is correct

Name		Signature		Date	