1. Introduction

This Standard Operating Procedure (SOP) defines the procedure for the production of a Statistical Analysis Plan (SAP) for research sponsored by the University Hospitals of Leicester NHS Trust (UHL). There should always be pre-specified statistical methodology documented for a trial. This can be detailed in the protocol or in a separate document such as a SAP. If there is not a separate SAP, the protocol must contain all the necessary information on the analysis, including important details such as adjusting for multiple testing and handling missing data, as required. For open label trials, full details of the statistical methods for analysis of trial data should be included in the protocol and changes to the pre-specified analysis once the trial has commenced should be avoided to prevent potential accusations of bias.

2. Scope

This SOP applies to all research sponsored by the UHL.

3. Definition

A SAP is a document that contains a more technical and detailed elaboration of the principal features of the analysis described in the protocol and includes detailed procedures for executing the statistical analysis of the primary and secondary data and other variables.

4. When must a SAP be produced?

The Chief Investigator (CI), in collaboration with the study statistician must ensure that a SAP is produced during the conduct of the study. The final version must be in place prior to the release of any randomisation codes to un-blind blinded trials. The SAP must be finalised prior to any interim analysis and before database lock.
NB. Un-blinding individual patients for safety a reason is a separate issue and is dealt with in **SOP S-1009 UHL.**

5. How must a SAP be produced?

It is expected that a statistician will be involved at the early stages of study design and protocol development. The SAP must be based on the trial protocol statistical considerations section. The C I must ensure that it is finalised following review by appropriate personnel and approved by the statistician and Sponsor. It must be version controlled during its production and it must be clear as to which is the final version.

There is a legal requirement to comply with the trial protocol The SAP must be consistent with the protocol and any analyses in the SAP that are not detailed within the protocol must be notified to the Sponsor, so that a protocol amendment can be facilitated in accordance with **SOP S-1018 UHL**.

The SAP (and the analysis specified in the protocol for open-label trials) must be followed. Any changes to the planned analysis (post unblinding for blinded trials) must be fully justified and communicated in the report of the results of the trial. This is particularly important if the change is not consistent with the protocol.

6. Contents of a SAP

The SAP must be a comprehensive and detailed description of the methods and presentation of data analysis for the trial, including both the main and any interim analyses. Subsequent secondary analyses of a more exploratory nature will not be bound by the SAP, although they are expected to follow the broad principles laid down within it.

Typical contents of a SAP include:

- Authorship
- Signature page
- Trial background
- Populations
- Flow of subjects
- Research hypotheses and data
- Endpoints
- Baseline characteristics
- Treatment allocation
- Treatment received
- Efficacy
- Safety
- Interim analysis

The SAP must also state who has overall responsibility for data analysis and which individuals will be performing the data analysis.

7. Responsibilities

	Responsibility	Undertaken by	Activity
1	Chief Investigator	Chief Investigator	Ensure a SAP is produced during study in collaboration with Statistician
2	Chief Investigator	Chief Investigator	Ensure SAP is finalised prior to interim analysis or database lock
3	Chief Investigator	Chief Investigator	Ensure that any amendments to the protocol required after production of SAP are managed in accordance with SOP S-1018 UHL
4	Sponsor	Head of Research Operations or delegate	Confirm with Chief Investigator during Sponsor Green Light process that SAP has been considered and delegated appropriately
5	Sponsor	Head of Research Operations or delegate	Ensure amendments to protocol are processed in accordance with SOP S-1018 UHL

8. Supporting Documents and Key References

SOP S-1009

SOP S-1018

9. Key Words

Research, Innovation, Volunteers, Participants, Trials, SAP, Statistical Analysis Plan, Protocol

This line signifies the end of the document

This table is used to track the development and approval and dissemination of the document and any changes made on revised / reviewed versions

DEVELOPMENT AND APPROVAL RECORD FOR THIS DOCUMENT		
Author / Lead Officer:	Joanne Thompson / Carolyn Maloney	**Job Title:** Medical Writer, Clear Clinical Research Ltd / UHL
Reviewed by:	R&I Governance Meeting	
Approved by:	Professor Nigel Brunskill	**Date Approved:** 16/2/21

REVIEW RECORD			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
April 2015	2	Carolyn Maloney	Logo and name changes
September 2016	3	CM, LW, JJ	Consistency checks.
February 2017	4	Carolyn Maloney	Update to logo.
May, October 2018	5	CM, JT, CCL	May: general review, no updates October: updated R&I logo
Nov 2020	6	LW, JJ, AM	Reformatting to new template

DISTRIBUTION RECORD:			
Date	**Name**	**Dept.**	**Received**