

Conduct of a study

Trial management and coordination

The development of an appropriate clinical trial design with high quality data collection and processing tools will typically require input from a multidisciplinary study team with expertise across the clinical, statistical, and operational aspects of the research. Effective and efficient implementation of the planned research is improved by establishing a management committee to provide overall direction and a trial coordinating centre to manage operational aspects of the trial. The management committee would typically comprise the principal investigator, key clinicians (who have contributed to the protocol development and/or who may also be recruiting volunteers into the study), the study statistician, and the trial coordinator. Examples of the responsibilities of this committee include:

- assisting in the development of (and approve) the final protocol and any ongoing amendments
- monitoring the progress of the trial with respect to: recruitment, treatment delivery, protocol violation, completeness of data; site specific issues (for example, ethics requirements)
- providing a plan for study completion: presentation, manuscripts, etc.

The responsibilities of the coordinating centre tasked with operational aspects of the trial include:

- provision of study materials and study updates (newsletters etc.) as well as training in and monitoring of study procedures.
- overseeing logistical aspects of drug supply, equipment, specialist laboratory testing, etc.
- registration and randomisation of volunteers and coordination of data collection and processing activities, including the provision of feedback to sites regarding data quality.

Recruitment and retention of centres and volunteers

Volunteers for clinical trials are typically recruited from medical centres, such as hospital inpatient

departments, outpatient clinics and general practitioner's surgeries. A large clinical trial may require the participation of many centres in order to obtain the required number of volunteers. Each centre must be assessed as having sufficient expertise, resources, quality processes, and access to the target study population in order to be a good candidate for participation in the trial.

Implementation of effective strategies for attaining the necessary number of volunteers is critical for the viability of a study. Recommendations include planning early for recruitment, selecting motivated investigators and skilled study staff for participation in the study, pilot testing recruitment strategies, using referrals from other health professionals, using the mass media, providing feedback on study progress to sites, and convening meetings of investigators and site personnel.

Independent data monitoring committee

For some randomised controlled trials it may be appropriate to establish an independent committee to monitor safety and efficacy data by reviewing the results of one or more interim analyses. In a double-blind study, this activity may involve a review of an unblinded interim data analysis (with results tabulated by actual treatment allocation). The committee is responsible for providing recommendations to the trial management committee about stopping a trial early, modifying some aspect of the study (for example, increasing the sample size target), or continuing the study as originally planned on the basis of their review of the interim data. It is imperative that the data monitoring committee be independent of all other aspects of the trial so as to provide impartial recommendations based solely on scientific criteria.

This committee should comprise at least 2 key members with expertise in the disease under investigation and a biostatistician (and/or, if appropriate, a clinical epidemiologist). Other key members might include clinical and biological experts in clinical areas closely allied to the study question (for example, a geneticist, cardiologist, or surgeon).

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Outcomes assessment committee

Some clinical trials employ measures of treatment effectiveness that require expert clinical judgement to be accurately implemented (for example, tumour response, diagnosis of an acute myocardial infarction). Improvements in the reliability and validity of such assessments can be achieved using an outcomes assessment committee with specialised expertise in the particular assessment. The reliability of results is improved from having the assessments applied in a highly consistent manner. Keeping information about treatment allocation from the committee ensures that their assessments are unbiased.

Contact the Outreach team (trials@ctc.usyd.edu.au) or through the website (www.outreachclinicaltrials.org.au) for further advice on this topic.