



RPH Research Foundation Statistical Service Policy

Goal/Purpose of the service

Study design and adequate sample size, along with appropriate analyses and interpretation, all underpin the quality and therefore credibility of research. These are some of the aspects of a study where input from a statistician should be obtained. In line with our mission to facilitate and support high quality research, the RPH Research Foundation provides statistical support researchers in the EMHS community.

Why statistical support is important

While the internet is a wonderful source of information and DIY support, it is difficult to know what to look for if you have little knowledge of research or statistics. For example, statistical tests are based on assumptions which need to be verified and if not met an alternative analysis adopted. Ignorance of these assumptions may lead to invalid analyses. A more problematic issue is that many do not know *when* to seek help. A common perception is that a statistician is someone whose usefulness is limited to analysis of the data once collected. However, the eminent British statistician Sir Ronald A. Fisher (founder of modern statistics) was quoted to say:

“To call in a statistician after the experiment is done may be no more than asking him to perform a post-mortem examination; he may be able to say what the experiment died of”

Consultation with a statistician early in designing the project is essential, particularly for the less experienced researcher, to ensure that the study has an acceptable chance of achieving its goals and withstanding peer scrutiny. While the literature may provide examples that can be followed, the problem, particularly for the new researcher, is identifying whether it is of sufficient quality to be mimicked. Publication is not a guarantee of quality.

How statisticians can support research

A consultation with a statistician early in the design phase is an opportunity to obtain confirmation of appropriate plans or to correct course to avoid later disappointment and frustration. It is a small investment of time that can have major benefits for the study.

Initial consultations will include:

- discussion of the pros and cons of study designs and their impact on sampling and analysis
- detailed specification of the research question and which analysis can be employed to address the question.
- discussion of sample size implications for feasibility of study goals
- discussion of the importance of measuring potential confounding variables and how this can strengthen the analysis results
- discussion of data arrangements to minimise corrections and preparation for analysis
- assistance with design and analysis components of ethics or grant applications

When data collection is complete the statistician can assist with:

- analysis of data, including preparation of data for analysis
- interpretation and initial reporting of the results
- preparation of a manuscript for publication (drafting statistical methods, reviewing whole paper but with particular attention to the results)
- responses to reviewer's comments following submission

Eligibility criteria to access free support

The RPH Research Foundation provides free statistical support for researchers and projects that meet eligibility criteria. These criteria have been developed to limit access to the EMHS community, and to support research aligned with the RPH Research Foundation's strategic objectives.

Internal staff and data are defined as:

1. Staff of the East Metropolitan Health Service (EMHS) which includes Royal Perth Hospital, Armidale Hospital, St John of God Midland Public Hospital, Bentley Health Service and Kalamunda Hospital
2. Academic residents of the RPH Research Foundation Building, G Block, located at Rear 50 Murray St Perth (Rear 50 Murray St), whose research is tied to EMHS
3. Data generated from within either 1 or 2 above.

Research Focus is defined as:

1. Addressing a gap in the literature that has applicability beyond EMHS AND
2. An intention to publish results in a peer reviewed journal.

In addition, improving patient treatment options and outcomes should be the primary interest.

Examples include:

- a. Gathering evidence of suspected patient disadvantage (poor outcomes) from current clinical practice that may be inadequate,
- b. Evaluating the effect of an intervention designed to improve patient outcomes
- c. Identifying associations between patient outcomes or disease and presenting symptoms/features.

All 3 criteria below must be met to be eligible for free support.

1. Research Focus

- Data must have a research focus.
QA, cost saving, or compliance monitoring projects will *not* qualify without a substantial research component such as the evaluation of an intervention in a designed study.

2. Data Source

- Data must be sourced internally (at least partially) or
- National (including WA) or WA State-wide data sets

3. Researchers

- The principal investigator(s),
 - Supervisor(s) of Advanced Trainees or Higher Degree by Research students,
 - Higher Degree by Research students
- must meet the definition of internal staff above.

If in doubt about whether your project meets the criteria, you are invited to meet with the statisticians to clarify its eligibility. If the project proves not to be eligible for free support, no fees will be charged for this meeting.

Higher Degree by Research Students

Full time Higher Degree by Research students are expected to conduct their own analysis but can consult with statisticians for up to 2 hours per fortnight at no charge. Some tertiary institutions provide a free statistical "drop in" clinic for their post graduate students if more support is required but funds are not available.

Part time clinician Higher Degree by Research students can access the service without restrictions on hours or services.

Projects Approved by the RPH Research Foundation

Any project approved or awarded a grant by the RPH Research Foundation will be eligible for free statistical support. The unique RPHRF grant identifier (from the RPHRF grant contract) will need to be provided to the statisticians.

Not Eligible

- MD (Doctor of Medicine) students' scholarly activity projects. If the student's project meets eligibility criteria (data, supervisor etc) the statisticians can provide support to the supervisor directly who will then be responsible for conveying results to the student. The statisticians will not interact directly with the students for the purpose of meeting tertiary institutions' course requirements but once fulfilled, the statistician can interact with the student for the purpose of publication.
- Tenants of rear 50 Murray St who are not part of a university organisation. Such tenants may apply to the RPH Research Foundation CEO for approval, but access is not guaranteed by tenancy.

"In Kind" contribution

The RPH Research Foundation recognises that nominating statistician time as an "in kind" contribution can improve the attractiveness of a grant application. As part of the RPH Research Foundation's goal to facilitate research, projects that meet the criteria for free statistical support are able to include statistical support as an "in kind" contribution in external grant applications. Please meet with one of the statisticians to confirm eligibility before submitting the grant application.

Accessing the service

It is preferred that, where possible, appointments are made for meetings via email or telephone rather than having clients 'drop in'. Quick questions are rarely quick. The question may be short but in order to answer the statistician often has to ask a series of questions to understand the context and hence quick questions generally become 30–60-minute conversations. This is a considerable disruption to staff providing the service.

It is helpful if initial contact can be accompanied by a one-page project summary (research question, sample size, study design, outcomes, relevant covariates etc) and/or, if it exists, an ethics or grant application.

Email contact can be either via: biostatistics@rphresearchfoundation.org.au

Or to:

Sally Burrows

Sally.Burrows@uwa.edu.au

Part Time

Our office is located on the 1st floor of the RPH Research Foundation building fronting 50 Murray St Perth (next to Ainsley House).

Time Frames

The RPH Research Foundation makes a substantial investment in the quality of research conducted within the EMHS community by providing a statistical service.

The service generally works on a 'first come, first serve basis' and, as with any free service, periods of heavy utilisation can generate long queues. Clients should be respectful of other clients also needing assistance from the statisticians and should plan sufficient time to progress through the queue whilst still meeting deadlines. The following are suggested as minimum allowances for turnaround times:

For analysis of data	4 -6 weeks (also depending on the size of the task)
Review of a manuscript	2 weeks
Review of an abstract	1 week

During periods of heavy demand these times will increase hence allowing some additional time is advisable. If deadlines are likely to prove to be tight, provide the statistician with advance warning of expected data arrival. This input will allow the statistician to plan time in their diary for the analysis to meet deadlines. It may not always be possible to meet short notice requests.

Acknowledging the RPH Research Foundation's support

By utilising the statistical service, the researcher is agreeing to mention the RPH Research Foundation in any publication, conference presentation, poster etc reporting information or results obtained from the statistical service. This should be via co-authorship for the statistician (with the agreement of the statistician), naming the RPH Research Foundation as one of their affiliations or via an acknowledgement. Failure to acknowledge the RPH Research Foundation's support may result in withdrawal of future access to free support.

Co-authorship

The NH&MRC *guide supporting the Australian Code for the responsible conduct of research* states that:

An author is an individual who:

- has made a significant intellectual or scholarly contribution to research and its output, and
- agrees to be listed as an author.

Where a significant intellectual or scholarly contribution in terms of statistical support equates to:

- analysis or interpretation of research data AND
- drafting significant parts of the research output or critically revising it so as to contribute to its interpretation

If the statistician has run the analysis, assisted with interpretation, and then contributed to the publication, co-authorship should be offered. Failure to offer authorship where warranted may result in withdrawal of future access to free support.

Fees

Even if eligible for free support, researchers who request analyses that, in the opinion of the statistician, are futile or without value, will be charged fees for that analysis. Agreement to pay fees will be required before the analysis is performed.

An unplanned second analysis requested for the sake of the discovery of additional participants, or an unplanned interim analysis (to obtain p values) for a conference presentation, may incur fees.

Analyses deemed wasteful or unnecessary will be charged \$100 per hour + GST.

Service reporting to the CEO

The service will provide an annual summary of projects and researchers that have utilised the service to the RPH Research Foundation CEO. The summary will include the researcher's name, department, the project topic, and an estimate of the hours the statistician has spent on the project.

May 2024