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**Mater Research Support Centre
Newsletter**

Welcome to the third edition of the MRSC newsletter. We are now on the Mater Intranet – to download additional copies of our newsletter visit our Website via the Mater Intranet, clicking on “Departments”, Mater Research Support Centre, Information, News and then MRSC newsletters.

We welcome any letters to the Editor including comments on the state of research on the campus. There will be a word limit of 300 words for letters to the Editor and the MRSC reserves the right to edit or refuse to publish any submissions. Although submissions may be published anonymously, all submissions must be accompanied by the author's name and contact phone number. Should you wish to submit a letter to the Editor, join our mailing list, or to contact any of our staff, please email: Anne-Maree at Anne-Maree_Stout@mater.org.au or phone 3840 1591.

WHAT'S NEW

Establishment of a Database Service

With the employment of two part-time programmers, MRSC is able to offer a database service to the Mater Community.

COCHRANE NEWS

The Dissemination of Cochrane Evidence - New Inventory

Over the past several months, The Canadian Cochrane Centre has been working to collect evidence of the reach and impact of The Cochrane Collaboration. The first part of this project is an inventory of resources (print and online) which use and disseminate Cochrane systematic reviews. The inventory contains over 70 resources in 20 languages, including textbooks, journals, online libraries, newsletters, summaries, clinical guidelines and indexes.

The Dissemination of Cochrane Evidence inventory is now available on The Cochrane Collaboration web site at

<http://www.cochrane.org/reviews/impact/index.htm>.

New Review from Mater Cochrane Reviewers: Milrinone in the treatment of cardiac dysfunction in neonates

The MRSC was pleased to assist Dr Phil Sargent (Mater Children's Hospital) and Dr Karthik Kulasekaran (Senior Reg Paediatric Cardiology, Prince Charles Hospital) in the preparation of a protocol for a Cochrane review to the Cochrane Neonatal Review Group. The review will address the current evidence from randomised controlled trials on the effects on cardiac function, mortality and side effects of milrinone in the treatment of cardiac dysfunction in neonates. It is anticipated that the results of this review will be available within the coming months.

DEVELOPMENT OF THE MATER HEALTH SERVICES RESEARCH REGISTER

Introduction

The Research Support Committee (RSC) in its meeting on 19th May 2004 decided to establish a Research Register. The Research Support Committee will oversee the Research Register and has established a Research Register Committee which will function as a subcommittee of the RSC providing overall management of the Register. Members of this subcommittee are: Prof. Allan Chang, Ms. Vicki Flenady, Prof. Frank Bowling, and Assoc Prof. Mike McGuckin. Mater Research Support Centre (MRSC) will provide the infrastructure support to the Research Register. This support includes: development of the Register database; management of the communication interface and generally act as a focus of activity related to the Register.

The general approach and functions of the Register have now been developed. This update provides a brief summary of the progress made. For further information please contact the MRSC on ext 1591.

Why a Research Register at the Mater?

Mater Health Services (MHS) recognises the value of research and encourages high quality research. Although there is a considerable amount of high quality research being undertaken at the Mater, there is currently no mechanism for MHS researchers, clinicians or managers to access comprehensive information on research studies or researchers across the campus. This deficiency makes collaborative and possibly synergistic opportunities for Mater researchers and consideration by management of areas to enhance research capabilities, problematic.

As research consumes resources, and possibly imposes additional risk, discomfort and inconvenience to patients, and potentially inconveniences colleagues, the importance of the research question to be addressed must be commensurate with the efforts and risk. Therefore all research activities must be clearly defined, subjected to review, and formally approved before being undertaken. Although some research activity at the Mater will undergo review through the Mater Human Research Ethics Committee according to the NHMRC statement, other research activities have no such requirement.

The key objectives of the Register are:

- to provide a comprehensive, accurate, up-to-date source of information on all research projects, researchers and research publications emanating from the MHS for the purposes of marketing and audit, thus enabling the promotion of research at the MHS and assisting with management decisions about allocation of research resources, identification of research strengths and weaknesses, and providing the basis for decisions to enhance research capabilities
- to facilitate cross-sharing of resources, skills, experience, and other specialist expertise through easy access by the Mater community to comprehensive information on research activity across the Mater campus, while ensuring appropriate security and confidentiality of information captured.

Information included in the Register

The Register will include four major components as follows:

- 1 A register of researchers at the Mater
- 2 A register of Mater research - ongoing and completed projects
- 3 A register of Mater publications
- 4 An audit and quality control component to monitor on-going research projects.

How will I register and view information in the Register?

The Research Register will be a server-based database which allows researchers to input and output data entirely by web-page through the Mater Intranet. Eventually, it is aimed to make the Register accessible to designated users on the Internet.

Data input: Web-page forms will be available for individual users to register research studies, publications and personal details and to provide updates on ongoing research progress.

Data output: Information stored in the Register will be available in the way of defined reports accessible through the Mater Intranet.

Would you like to help in the Register development?

The Research Support Committee feels that it would be helpful to inform the Mater community of the progress made and to seek input at this point in time. Therefore, a survey of staff at the Mater is currently being conducted by the CEO.

Mater researchers are invited to participate in the Research Register User Reference Group to provide input with system development, and to pilot test the Register by registering details of their research. A number of researchers have indicated an interest in joining this group. Please contact Anne-Maree Stout or Vicki Flenady, Mater Research Support Centre, ext 1591 if you would like further details about the survey or Research Register User Reference Group.

MRSC's SECRETARIAT ROLE FOR JOHN P KELLY RESEARCH COMMITTEE

The John P Kelly Fund was established in 1982 to promote and support research activities on the Mater campus. The John P Kelly Research Committee (JPKRC) was set up to allocate these funds under the following principles:

- The process of allocation should be fair, open and transparent
- The principles of allocation should be recommended and the procedures endorsed by the Research Support Committee
- In addition to scientific merit, the clinical relevance, the encouragement of research, the opportunity for teaching and the promotion of the Mater mission should be considered.

To assist the JPKRC to carry out its role, MRSC was assigned to act as the JPKRC Secretariat. In this role MRSC acted as the daily communication interface between applicants and the JPKRC and carried out administrative duties in relation to the allocation process.

To facilitate a fair, open and transparent process, the MRSC set up the John P Kelly Research Committee website on the Mater Intranet. This enabled the Mater community to have immediate

access to application documents, the application timetable and decisions made by the JPKRC Committee.

The Evaluation Tool used by the Evaluators was also available on the website, thereby enabling applicants to see clearly the areas where most scoring would be awarded.

For the 5 separate groups of the John P Kelly Research Fund, 34 applications were received as follows

Education	2
Seeding	4
Major Projects	13
Infrastructure	5
Beginner	10

Each applicant was issued with a unique number and the marked results of their submissions were placed on the Website to enable the applicant to see the success of their submission. It is anticipated that applicants will be notified officially of their results late August/early September 2004.

LETTERS TO THE EDITOR

(We share with you two letters we received about the MRSC publication. We plan to publish letters we receive on research or other topics that we feel would be of interest to the Mater Community. We look forward to your contributions. Sue Jenkins-Manning - Editor)

I've just read the 2nd newsletter and just have to comment on what a good publication it is. Really informative bringing all the research education, the centres services and other bits and pieces together then illustrating with actual projects underway. Helpful to have the library schedule in there also. Motivating to have the upcoming conferences and opportunities listed. Congratulations.

Kate Cleary

Congratulations on a good production.

Sr. Regis M.

SAMPLE SIZE CALCULATION - PART 2

This is the second article in a series of three articles looking at sample size calculations. The final article will be produced in the next MRSC newsletter.

Conceptual steps in sample size planning in a research project

1. Determine the level of robustness. Conventionally a Type I error (Alpha) of 0.05 is used.
2. Determine the level of power. Conventionally a Type II error (Beta) of 0.2 (Power=80%) is used.
3. Estimate the background variation. This is the expected Standard Deviation within any group of observation if it is a measurement. In the measurement of proportions, background variation is dependent on the background proportion.
4. Nominate the difference to be tested in the study. If previous observations exist, published differences can be a guide to determine the difference that can be expected. Alternatively, the difference to be tested can be one that is of practical or theoretical interest.
5. Statistical programs are then available for the calculation of sample size requirements.

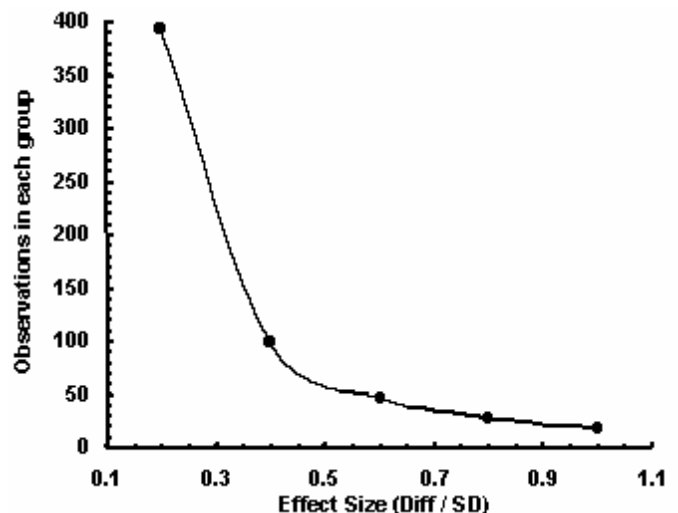
An alternative to sample size estimation is the sequential analysis model, where the borders to determine when a study should continue or terminate are used rather than the estimation of the fixed sample size required. In both cases considerations have been given to ensure both robustness and power, and that sufficient but not excessive observations have been made. Sequential analysis was covered in the previous newsletter.

Comparison of means between groups

These include scalar measurements that are normally distributed. Examples are whether male babies are heavier than female babies, whether one dietary regime loses more weight than another, whether cholesterol levels are better controlled by one drug or another. The following considerations are used after the Type I and II errors are nominated (usually 0.05 and 0.2 respectively).

The first parameter to be decided on is the background variation. For example, we know that the standard deviation of birth weight around term is about 350g.

The second parameter is the size of the difference that matters. We may know that the difference between the sexes was 120g in another set of data, and want to confirm that this is so in our research project. Alternatively, we may decide that any difference less than 100g does not matter. The Effect Size for the first decision is $120/350 = 0.34$ and the sample size required is 134. For the second the Effect Size is $100/350 = 0.29$ and the sample size is 192. (Sample size applets can be found on our website.) The following figure shows the relationship between Effect Size and sample size for comparison of means.



It can be seen that the sample size required increases as the Effect Size decreases. In most clinical studies, a moderate Effect Size is of interest, and sample size of 50 to 100 per group are commonly used.

Comparison between 2 proportions

Clinical research often compare proportions between groups. Examples of this are the cure rate for different treatments, complication rate for

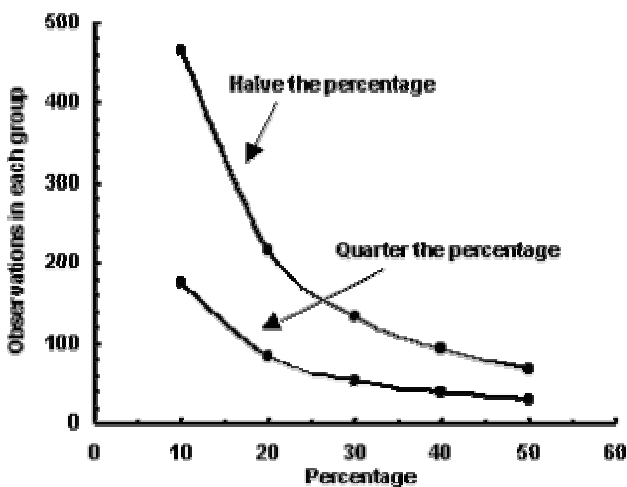
different operations, prevalence of an illness in different population groups, and so on. The following considerations are used after the Type I and II errors are nominated (usually 0.05 and 0.2 respectively).

The two proportions under consideration are used to estimate the sample size requirements. Two approaches can be used.

The first is merely to state the two proportions of interest. For example, we want to test the hypothesis that 18% of boys and 15% of girls got into university, and the sample size is 567 of each sex.

The second is to estimate a baseline proportion, and state the minimal difference that will be of interest in a comparison. For example, we may have a postoperative wound infection rate of 15%, and want to know if prophylactic antibiotic would make a difference. We then decide that anything less than a 5% improvement is not good enough. The model is therefore to compare 15% with 10%, and the sample size will be 721 per group.

The following figure shows sample size required comparing a proportion against a half and a quarter of that proportion. It can be seen that sample size increases exponentially with lower proportions, and when the difference between the two groups is small.



Sample size calculations for estimating population parameters

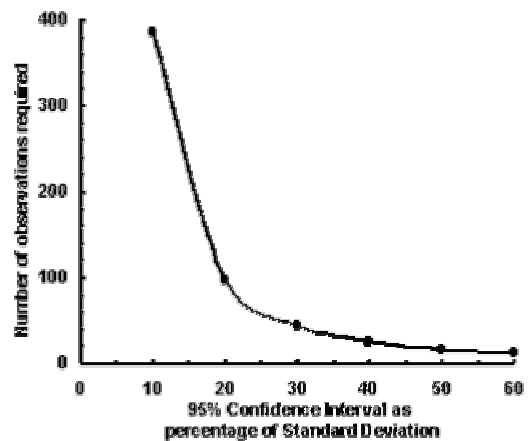
Not all research models compare group differences. A common research method is that of estimating a parameter in a population, a sort of fact-finding exercise. In this type of approach, the accuracy of the finding is of interest.

The planning process is therefore to consider the sample size required in order to obtain a precision no greater than a defined tolerable error. The error is defined in terms of the 95% confidence interval of the measurement. The narrower the tolerable error, then the larger will the sample size be required.

Sample size for estimating population mean

Researchers may want to know the mean value of a parameter in a population. Examples of this are weight of babies born in Brisbane in a year, the height of Norwegians, the Haemoglobin concentration of pregnant women, the dose of a particular drug that will achieve a particular effect.

The ratio of tolerable error to the anticipated Standard Deviation governs the sample size, as demonstrated in the following figure.



For example, we know that the Standard Deviation of birth weight is 350g, and we want to estimate the weight of babies born at the Mater to a 95% Confidence interval of +/- 100g. The ratio is $100/350 = 0.29$ and the sample size is 48.

Part 3 of this article in the next newsletter will address topics such as sample size calculations for estimating population proportion and for groups of unequal sizes.

SCIPP IT PROJECT (Smoking Cessation in Pregnancy: Parents Infants Together)

On Tuesday 27th July 2004, the SCIPP IT Project was successfully launched. The project was officially launched by Dr John O'Donnell and attended by representatives from the working party that developed the smoking cessation guidelines in pregnancy, the steering group and project team, Queensland Health and other invited guests. A morning tea was held in the antenatal clinic for women and staff to mark the event. The launch received media coverage and as a result there has been interest from other hospitals and from women themselves to join the project.



Dr John O'Donnell, Prof David Tudehope, Ms Vicki Flenady (Project Coordinator) Prof Allan Chang, Assoc Prof Rob Cincotta, Dr Ian Ring

The project has been well received by both women and staff. A key aspect of the project is to refer women to Quitline for counselling and ongoing assistance and support to quit smoking. This approach has been successful to date with many women requesting this support. The project will run over a 12 month period. Through a Service Agreement with Queensland Health, the

Centre for Clinical Studies at Mater Health Services has coordinated the development of a guideline to address the issue of smoking cessation in pregnancy and the gap between what is known from the best available research and what is actually done in day-to-day practice for smoking cessation programs in pregnancy in Queensland. This pilot project will evaluate the guideline and an implementation strategy to increase the uptake of the guideline recommendations into practice. The results of this pilot, which includes feedback from antenatal care clinicians and women attending the antenatal clinic, will assist future updates of the guideline and enable consideration by Queensland Health of potential strategies for widespread implementation of the guideline in Queensland maternity hospitals.

The project has been supported by Queensland Health and the Queensland Cancer Fund (QCF).



Ms Katherine Gillett (QCF), Ms Sarah Kelly, Ms Julie Smith, Ms Liz Davis (SANDS), Ms Vicki Flenady (Project Coordinator), Ms Karen New (Project Officer), Ms Glennys Friend

INTRODUCING/FAREWELLING MRSC & CCS STAFF

Yanlin Liu is one of MRSC's new Programmers involved with database development and server side programming. Yanlin works Monday-Thursday. He has a Graduate Certificate in Business Administration and has a Masters of Information Technology.

Scott Pain is employed for 3 months as MRSC's Statistician to provide statistical advice. Scott works Monday-Tuesday and has a Masters of Mathematical Science.

Jill Tierney develops and problem solves Access database queries (that are PC based) for MRSC clients. Jill works Monday & Wednesday and is studying Computing Science.

Dr Rita Davies is employed by the Centre for Clinical Studies (CCS) as a part-time Research Assistant for the Induction of Labour trials. Rita has a BA, MNursing and a PhD in midwifery history and works Tuesday-Thursday.

Margie Jell is also employed by CCS as a Research Assistant. Margie is a Registered Nurse and Endorsed Midwife and recruits for a multi-centred obstetric trial using Vitamin C & E to prevent pre-eclampsia. Margie works Tuesday, Wednesday and Friday.

Camilla Bennett is employed by MRSC as an Administration Assistant. Camilla works Thursday-Friday and is currently studying Bachelor of Biomedical Science.

Kiri Vaughan is employed by both MRSC and CCS (PSANZ funds). Kiri is an Administration Assistant, works Monday & Wednesday and is studying Arts (Psychology and Literature).

We say goodbye and best wishes to:

Richard Hockey, Senior Data Analyst and
Katie Waters, Research Assistant.

RESEARCH GRANTS SOON TO CLOSE

KIDNEY HEALTH AUSTRALIA

Kidney Health Australia provides scholarships for individuals wishing to study full time for the research degrees of PhD or MD and Masters by research, by undertaking research into the causes, prevention and treatment of disorders of the kidneys and urinary tract.

Further information is available from: <http://www.kidney.org.au/?section=2&subsection=163>

Deadline for applications: 30 August 2004.

THE CANCER AND BOWEL RESEARCH TRUST

The Cancer and Bowel Research Trust provides funding for scientific and medical research into the cause, cure and prevention of cancer related illness in Australia and New Zealand. Applications are invited for funding grants to commence in 2005.

Further information is available from: <http://www.cancerresearch.org.au/>

Deadline for applications: 30 August 2004.

MULTIPLE SCLEROSIS AUSTRALIA

Postgraduate Research Scholarships

Postgraduate Research Scholarships are available for graduates for 2-3 years to undertake full time study towards a higher degree (PhD or in some cases a Master degree).

Seeding Grants

To broaden the scope of its support for research relevant to multiple sclerosis, the MSA wishes to promote research into rehabilitative and other aspects of the disorder.

Further information is available from: <http://www.msaustralia.org.au/research/SCHOLARS.pdf>

Deadline for applications: 31 August 2004.

TELSTRA FOUNDATION

The Community Development Fund gives grants to charitable organisations for projects that have wide impact and intervene early to address causal factors affecting the health, well-being and life chances of Australia's children and young people.

Further information is available from: www.telstrafoundation.com

Deadline for applications: 3 September 2004

CSANZ

The CSANZ Research Scholarship is intended to provide support for Members of the Cardiac Society of Australia and New Zealand who wish to pursue a career in cardiovascular research. The value of the Scholarship will be equivalent to that of the NHF Postgraduate Medical or non-Medical Scholarship (depending on the candidate's academic qualifications) and will be payable for one year. Scholarships will be awarded only to applicants whose research is to be conducted in Australia or New Zealand.

Further information is available from: <http://www.csanz.edu.au/scholarships/RS-2005.pdf>

Deadline for applications: 24th September 2004

UPCOMING CONFERENCES AND SEMINARS

CLINICAL TRIAL (DIS) AGREEMENTS

Topics covered will include:

- Why do we have Clinical Trial Agreements?
Are they a simple document?
- What legal basis do they incur?
What are some of the issues investigators are facing?
- What issues concern hospitals and Queensland Health including when third parties are involved such as universities?

For further details go to <http://www.arcs.com.au>

26 August 2004 University of Queensland Staff and Graduates Club, Brisbane

2004 GROWTH AND DEVELOPMENT UNIT CONFERENCE: TWINS/MULTIPLE PREGNANCY

The use of twins to study childhood development and behaviour.

For further details email Leith_Poulsen@mater.org.au

10 September 2004 Mater Hospital, Brisbane

HEALTH OUTCOMES 2004: PERSPECTIVES ON POPULATION HEALTH

10th Annual National Conference Health Outcomes 2004 will include a significant focus on evaluation issues and challenges in the planning, development and implementation of population health initiatives aimed at improving health outcomes both for the general population and for particular population groups.

For further details go to <http://www.uow.edu.au/comMere/ahoc>

15 – 16 September 2004, Canberra

12TH COCHRANE COLLOQUIUM.

“Bridging the Gaps”.

For further details go to <http://www.colloquium.info>

2 – 6 October, 2004, Ottawa Canada.

ACER RESEARCH CONFERENCE 2004

Supporting student wellbeing: what does the research tell us about social and emotional development of young people?

For further details go to http://www.acer.edu.au/works_hops/documents/ResearchConf2004program.pdf

24 – 26 October 2004 Radisson Playford Hotel, Adelaide

SCIENTIFIC MEETING ON ‘PROGRESS IN MULTIPLE SCLEROSIS RESEARCH’

The MRAB arrange a two-yearly scientific meeting on ‘Progress in Research in MS’. For further details go to <http://www.msaustralia.org.au>

10 – 12 November 2004 Walter & Eliza Hall Institute, Melbourne

THE AUSTRALIAN HEALTH & MEDICAL RESEARCH CONGRESS

The five day Congress program will cover a broad cross section of topical areas in the thematic structure. Eminent international and local scientists will be invited to present their latest work in plenary sessions and integrated multi-society symposia. In addition, the Congress will provide a framework for free oral and poster communications and a host of smaller focussed meetings. For further details go to <http://www.ahmrccongress.org.au>

21 – 26 November 2004, Sydney Convention Centre, Sydney

4TH ANNUAL QUEENSLAND HEALTH AND MEDICAL SCIENTIFIC MEETING

For further details email info@iamevents.com.au

30 November and 1 December 2004, Brisbane Convention and Exhibition Centre, Brisbane

LIBRARY TRAINING FOR SEPTEMBER 2004

Electronic Journals

Learn to:

- Locate electronic journals through the Library website
- Access full-text articles from the Library, work and home
- Set up journal alerting services to help you track the latest research in your field

Tuesday 21st Sept., 1:00-2:00

Endnote

Endnote software assists writers and researchers in keeping track of bibliographic references and generating bibliographies for books and papers.

Part 1 – Monday 20th Sept., 12:30- 2

Part 2 – Monday 27th Sept., 12:30- 2

Thursday 30th Sept., 3:30-5:00

Evidence-Based Nursing

Searching for the Best Evidence

During this session you will:

- Gain a basic understanding of evidence-based practice
- Learn about the hierarchy of evidence and different study types
- Formulate clinical questions using the PICO model
- Learn how to search Cochrane Library, Joanna Briggs and CINAHL in order to find the best evidence

Thursday 30th Sept., 3:30-5:00

**Mater Library Training Room, Ground Floor,
Aubigny Place**

To book your place, please call 07 3840 1689

*Tailored workshops for groups can be arranged at times to suit you, at the Library or at your work place.
Please call 3840 8135 or email j.chamberlin@library.uq.edu.au to discuss*

