Annual Report 2007

The Medical Statistics Group

Health Services Research Section

ScHARR

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Preface

The Medical Statistics Group was established in 2004. It is located within the Health Services Research (HSR) Section of ScHARR at the University of Sheffield and works closely with the Medical School, the Trent Research Development and Support Unit (RDSU) and the Clinical Trials Research Unit (CTRU).

The Medical Statistics Group (MSG) aims to:

1. develop new statistical methodology relevant to medical and health services research;
2. help ScHARR achieve a high rating at the next RAE by providing high quality advice on research proposals and using modern statistical methods in the analysis and display of data;
3. provide direct input to medical and health services research projects through collaborative research and consulting;
4. develop and deliver statistics modules for undergraduate and postgraduate degree schemes within ScHARR and the University of Sheffield;
5. train medical and health services professionals in the theory and application of appropriate statistical methods in their own research;
6. train the next generation of medical statisticians (by introducing an MSc in Medical Statistics).

The Group will operate in the three main areas of research, teaching and consultancy.

Highlights of 2007

Jenny Freeman’s promotion to Senior Lecturer.

Stephen Walters’ promotion to Reader.

Successfully holding the Teachers of Medical Statistics Conference in Sheffield in April (the first time it has been held away from Bristol)

We have now had a whole year of consolidated teaching, and have seen the advantages of this. Steven Julious wrote and delivered HAR6036 ‘Statistics for Doers’ in the second semester for the first time. This was aimed at the intercalated BMedSci students and the Research Training Programme (RTP) students. Stephen Walters gave all the lectures for the undergraduate MBChB course and again ran HAR6035 successfully.

We had two books published during the year. Mike and Stephen published the 4th edition of ‘Medical Statistics: a commonsense approach’ (Wiley) with David Machin, who is now an emeritus professor in the Group. In December Jenny, Stephen and Mike’s book on ‘How to Display Data’ from BMJ Books appeared.
Steven has completed the first drafts of two books “Early phase trials” and “Sample sizes for clinical trials” which should appear in 2008. Steven Julious joined Mike and David Machin in writing a revision of ‘Statistical Tables for the Design of Clinical Studies’, which should also appear in 2008.

The Clinical Trials Research Unit, of which Steven is now Chair, successfully generated enough money to appoint a statistician and in December 2007 Mike Bradburn joined the unit. Steven devised the specification for the randomisation system which is now in use.

Khadija Rantell left the group but still works with Mike Campbell on her PhD and on the DESMOND project.

Jenny has been appointed to the Medical Section Committee of the Royal Statistical Society and joins Stephen Walters (who is secretary to the committee). In collaboration with Nottingham Trent University and the University of Leicester, Jenny set up the Statistics Poster Challenge, a successful event that was participated in by over 500 children across the region (http://www.schoolspoc.org.uk/).

Steven was on the organising committee of the Statisticians in the Pharmaceutical Industry (PSI) 2007 conference and co-organised a one day meeting on multiplicity also for the PSI. This was the first meeting by the PSI to be web streamed. Steven is also chair of the DIA 2008 European Stats Meeting.

As can be seen in the report, the core members of the MSG teach and examine across a wide range of undergraduate and post graduate courses for both SchARR and for the Faculty of Medicine.

All five core academic members of the group have been submitted for the RAE 2008. We have a strong list of peer reviewed publications with 18 joint-authored papers in 2007 and a further 8 non-refereed papers, letters or books. We also have a strong list of successful grant collaborations.

MJC January 2008
The Medical Statistics group

Mike Bradburn (MB)  Statistician
Mike Campbell (MJC)  Professor of Medical Statistics
Jenny Freeman (JF)  Senior Lecturer in Medical Statistics
Georgina Jones (GL)  Senior Lecturer in Social Sciences
Steven Julious (SAJ)  Senior Lecturer in Medical Statistics
Stephen Walters (SJW)  Reader in Medical Statistics
Spencer Boyle (SB)  PhD Student
Lucy Radford (LR)  PhD Student
(David Machin)  Emeritus Professor

Other Statisticians in ScHARR

Jon Nichol (JPN)  Professor of HSR  MCRU
Alicia O’Cathain (AOC)  Senior Research Fellow  MCRU
Xin Shi  Statistician  HEDS
John Stevens  Deputy Director, CHEBS  HEDS
Tracey Young (TY)  Lecturer  HEDS
Teaching 2007 by MSG

Undergraduate
MBChB (MJC, JF, SAJ, SJW, GLJ)
HAR202 BMedSci (ScHARR) (JF, SAJ, MJC)

Undergraduate/Postgraduate
Statistics for the Medical and Health Sciences (HAR6036) (MJC, SAJ, SJW, JF)

Postgraduate
An Introduction to Statistics and Critical Appraisal (HAR6035) (MJC, JF, SJW, SAJ)
MSc Genetic Epidemiology (MJC)
MPH (SJW, MJC)
MSc (HSR) (MJC)
MSc Health Sciences (JF)
MSc Health and Social Care (distance learning) (including RTP and MSc in Psychological Research Students (GLJ)

Specialist Registrars short course (JF)
MSc Renal Medicine (JF)
MRCPsych Part II Social Science (GLJ)

Trent RDSU New Researchers Training Programme (SJW)
Trent RDSU Short courses (JF, SJW)
Trent RDSU Statistics Clinics (MJC, JF, SAJ, SJW)

External Courses
Cluster randomised Trials : afternoon course MSc Med Stats (Leicester) (MJC)
‘Cluster randomised trials’. One day Erasmus Winter Course, Rotterdam (MJC)
Medical Statistics Group peer-reviewed publications 2007


**Julious SA** and Mullee MA. Issues with using baseline in a last observation carried forward analysis. *Pharmaceutical Statistics*, DOI: 10.1002/pst.311

**Julious SA** and George SL. Are hospital league tables calculated correctly? *Public Health* 2007;121:902-4 (with commentary and response 905-908)


Other publications (non refereed)


Books


Invited Conference Talks and seminars

MJ C

‘Equivalence or superiority trial? The AHEAD study (Assessing Health Economics in AntiDepressants study)’. Royal College of Psychiatrists Annual meeting, Sheffield February, 2007.


‘A statistician on a NICE Appraisals Committee: a personal view’ Leeds November.


JVF


‘Critical understanding of information and information display’. Sheffield City Council Scrutiny policy day (Sept 2007).

‘Teaching innovation’. University of Southampton 5th Dec 2007.

*The Use of Marginal and Random Effects Models In Trials With Clustering Effects Due To Health Professional Variation*. MRC PHSRN workshop: Clustering effects in individually randomised trials, MRC Clinical Trials Unit, London, November 2007.
**SAJ**
Julious SA. Seven useful designs. PSI Scientific Meeting. London, 2007

**SJW**
The Use of Marginal and Random Effects Models In Trials With Clustering Effects Due To Health Professional Variation. MRC PHSRN workshop: Clustering effects in individually randomised trials, MRC Clinical Trials Unit, London, November 2007.

Analysis of quality of life outcomes - a practical guide. Stroke Seminar, Division of Stroke Medicine, Nottingham City, Hospital, Nottingham, September, 2007.


**Contributed talks and posters**

Talk ‘Relative Risks, Odds Ratios and Cluster Trials’ MJ Campbell Biometrics Conference Coffs Harbour Australia Dec

J Freeman, D Staniforth, S Collier. Innovations in curriculum design: involving subject specialists when teaching statistics to non-statistics students. Royal Statistical Society Annual Conference 2007 Poster


A Nisar, A Salama, J Freeman, AG Davies. Avascular necrosis in acute and acute-on-chronic slipped capital femoral epiphysis. The European Federation of National Associations of Orthopaedics and Traumatology (EFORT) May 2007, Firenze, Italy

J Freeman, D Staniforth, S Collier. Innovations in curriculum design: involving subject specialists when teaching statistics to non-statistics students. University of Sheffield Spotlight on Learning and Teaching Conference 2007
PhD Students

Adriana Ismail (about to submit) supervised by MJC and GJ.
Spencer Boyle (full-time): supervised by SJW and GJ
Lucy Radford (full-time): supervised by SJW, JVF and MJC
Elton Chanakira (full-time): supervised by Liddy Goyder (Public Health), JVF & Alicia O’Cathain
Nicola Clibbens (part-time university staff candidate): supervised by Wendy Baird (Public Health) and SJW
Tom Locker (part-time university staff candidate): supervised by Sue Mason (HSR) and SJW
Khadija Rerhou (part-time university staff candidate): supervised by MJC
Chirk Jeng Ng (full time): supervised by Nigel Mathers and MJC

MSc Students

Hosnieh Fathi MSc HSR (MJC)
StellaMay Gwini MSc HSR (MJC)
Zahid Memon EuroPubhealth (MJC)
Jane Senior MSc Health Sciences (MJC)
Aida Karina Zaineddin MSc Genetic Epidemiology (MJC)
Clarissa Mswaka MPH (JF)
Jennifer Lai MPH (SAJ)
Lubna Abdul Razak MPH (SJW)

BMedSci Students

Federika Kurera (MJC)
Kirsty Saunders (JF)

External examining

External Examiner (PhD University of Cambridge, MJC)
External adviser: MSc Medical Statistics. University of Hong Kong (MJC)

Internal Positions

Mike Campbell. Head of Health Services Research section
Steven Julious Chair of the CTRU.

External Positions

Mike Campbell completed his term as Editor in Chief for Statistics in Medicine at the end of 2007. He is a member of Appraisal Committee C for the National Institute for Health and Clinical Excellence. He is a member of Panel C12
(Professions Allied to Medicine) for the Research Assessment Exercise 2008. He was a member of the National Institute for Health Research (NIHR) panel assessing programme grants, and a member of the short lived NIHR methodology panel. He continues on the Education Committee of the International Society for Clinical Biostatistics (ISCB). Mike is a member of Data Monitoring and Ethics Committees for: THREAD (University of Southampton); FINE, University of Manchester and the FACS trial (University of Nottingham). He is on the TSG for VULCAN (Anti-microbial treatment for venous ulcers) University of Sheffield. He is on the Academic Advisory Group to the Sheffield Health and Social Care Consortium.

Steven Julious completed his term as Editor in Chief of Pharmaceutical Statistics at the end of 2007. He sat on the organising committee of the PSI 2007 conference and co-organised and co-organised a one day meeting on multiplicity also for the PSI. This was the first meeting by the PSI to be web streamed. Steven is also chair of the DIA 2008 European Stats Meeting. Steven is a Chair of Data Monitoring and Ethics Committees for Surgery against Brachytherapy Trial (SABRE) (University of Southampton).

Stephen Walters is secretary to the Medical Section for the Royal Statistical Society. He is an independent member of the ELSA trial steering committee, University of York; and on the Data Monitoring and Ethics committees of three other randomised controlled trials: CHHIPS study, University of Leicester; COSSACS study University of Leicester; the SINS study University of Nottingham. He is also a member of the International Advisory Board for the journal of Quality of Life Research; statistical advisor to the editorial board of the journal of Sexual and Relationship Therapy and a member of the Editorial Board for the journal of Health and Quality of Life Outcomes. Stephen is a member of the Sheffield Health and Social Care Consortium Scientific Review Panel.

Jenny Freeman is a member of the Sheffield Health and Social Care Consortium Scientific Review Panel. She is the Examiner in Medical Statistics for the Graduate Diploma of the Royal Statistical Society and a member of the Medical Section for the Royal Statistical Society. She is the Medical Faculty rep on the Maths and Stats Help Centre steering group.

Georgina Jones continues to be on the Executive Board for the national charity PCOS UK. She is on the Editorial Board for the journal of Health and Quality of Life Outcomes. She is an expert member of the South Sheffield Ethics Committee.

Refereeing
Both Mike Campbell and Stephen Walters are reviewers for the BMJ, whilst Jenny Freeman is a statistical referee for the BJGP, the Journal of Health and Social Care and the Statistics Education Research Journal. Stephen has acted as a referee for the following: Quality of Life Research; Statistics in Medicine; Pharmacoconomics; Health and Quality of Life Outcomes; International Journal of Surgery; Medical Research Council (MRC) Clinician Scientist Fellowship Scheme and the NHS R & D Health Technology Assessment (HTA)
Research Awards and Grants (both new and ongoing)

New

**MJ Campbell**  3Mg  A trial of nebulised versus injected magnesium for acute asthma attacks (3Mg) (PI S Goodacre) Total £1,110,333  3 yrs Funding Body NHS HTA.

**MJ Campbell**  Improving management of Type 1 diabetes in the UK: the DAFNE programme as a research test-bed (PI S. Heller) Total £1,983,000 over 3 years Funding body NIHR Programme Grant.

**MJ Campbell**  The development and evaluation of the effectiveness of a patient decision aid (PtDA) to improve decision quality and health outcome in type 2 diabetic patients making treatment choices (PI N Mathers), Total £250,000 over 2 year Funding Body HTA Research for Patient Benefit.

**JV Freeman**. Computerised cognitive behaviour therapy for treatment of depression in people with MS: pre-clinical trial exploratory study (PI Cindy Cooper). Total £213k. Funding body: MS Society.

**JV Freeman**. Breast Cancer Aftercare: Preparing patients for discharge from routine hospital follow up (PI Joanne Thompson). Total £86k. Funding body: Weston Park Hospital Cancer Appeal.

**SA Julious**. Randomised Assessment of Treatment using Panel Assay of Cardiac markers (RATPAC) (PI S Goodacre). £716,500. Funding body NHS HTA.

Ongoing

**SJ Walters**  A randomised 2x2 trial of community versus hospital rehabilitation followed by telephone or conventional follow up; impact on quality of life, exercise capacity and use of healthcare resources. £400,000. 48 months 2002-2006 Funding body: NHS R & D HTA PI: Dr R. Lawson.

**SJ Walters**  Comparison of review methods for evaluating quality and safety in health care £472,000 36 months 2004-2007. Funding body: Department of Health PI : Prof. A. Hutchinson.

**SJ Walters and JV Freeman**  Clustering by health professionals in individually randomised trials (University Project Studentship); £48,000; 36 months 2006-2009; Funding body: University of Sheffield. PI: Dr Stephen Walters.

**MJ Campbell**  Does self monitoring of blood glucose as opposed to urinalysis provide additional benefit to newly diagnosed individuals with Type 2 diabetes receiving structured education? 2006-7. Funding Body : Diabetes UK £12, 750 PI Simon Heller.
GL Jones (PI). Treatment for endometrial & vulval cancer: Measuring outcome from the patients’ perspective. 27 months Feb 2007 – May 2009. Funding body Weston Park Cancer Hospital, £45,072.

GL Jones (PI) A pilot study to develop a new chronic pelvic pain questionnaire Pfizer. £10,000. 24 months.

GL Jones (PI) Understanding why women present late for antenatal booking: a qualitative analysis Sheffield Health and Social Care Research Consortium £36,484.

Future Plans

In research we will continue to investigate practical applications of the latest theoretical research.

In teaching we are collaborating with the Department of Probability and Statistics to deliver an MSc in Medical Statistics, as an offshoot of their MSc in Probability and Statistics by distance learning and face-to face.

We will continue to support the CTRU.

SAJ will have two books: published i) Clinical Trial Design for Chapman and Hall. ii) Early Phase Trials for Wiley.

JF has been commissioned to write an essay on Confidence intervals for the Encyclopaedia of Medical Decision Making, Sage publications.

GLJ has submitted a book proposal with Mr Stephen Radley on quality of life measurement in gynaecology.

SJW is writing a book for Wiley entitled “Quality of life outcomes in clinical trials and Health-Care Evaluation: a practical guide to analysis and interpretation.”